



## POLICY ROUNDTABLES

# Competition Policy in the Electricity Sector 1996

### Introduction

The OECD Competition Committee debated the application of competition policy to the electricity sector in October 1996. This document includes the written submissions from Australia, Belgium, Canada, the Czech Republic, the European Commission, Finland, Germany, Hungary, Italy, Japan, New Zealand, Norway, Poland, the Slovak Republic, Spain, Sweden, the United Kingdom and the United States, as well as an aide-memoire of the discussion.

### Overview

Liberalisation of this sector, underway in many Member countries, can have significant effects and can benefit consumers. Country contributions addressed several questions. Is structural change necessary for liberalisation? Is privatisation an important step for the introduction of competition, or is corporatisation sufficient? Have lower prices in the countries that have introduced competition resulted from competition or from better regulation? How should stranded costs be treated?

An important lesson of the roundtable was the need for structural separation, at least to separate the transmission grid from generation.

### Related Topics

- Structural Reform in the Rail Industry (2005)
- Competition and Regulation Issues in Telecommunications (2001)
- Restructuring Public Utilities for Competition (2001)
- Competition Policy in Subsidies and State Aid (2001)
- Competition in Local Services: Solid Waste Management (1999)

**APPLICATION OF COMPETITION POLICY TO THE ELECTRICITY SECTOR**

**ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT**

**Paris**

**54822**

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## **FOREWORD**

This document comprises proceedings in the original languages of a Roundtable on application of Competition Policy to the Electricity Sector which was held by the Working Party n°2 of the Committee on Competition Law and Policy in October 1996.

It is published as a general distribution document under the responsibility of the Secretary General of the OECD to bring information on this topic to the attention of a wider audience.

This compilation is one of several published in a series named "Competition Policy Roundtables".

## **PRÉFACE**

Ce document rassemble la documentation dans la langue d'origine dans laquelle elle a été soumise, relative à une table ronde sur l'application de la politique de la concurrence au secteur de l'électricité, qui s'est tenue en octobre 1996 dans le cadre du Groupe de travail n° 2 du Comité du droit et de la politique de la concurrence.

Il est mis en diffusion générale sous la responsabilité du Secrétaire général de l'OCDE afin de porter à la connaissance d'un large public, les éléments d'information qui ont été réunis à cette occasion.

Cette compilation fait partie de la série intitulée "les tables rondes sur la politique de la concurrence".



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# AUSTRALIA

## Background and Overview

The generation, transmission and distribution (low level voltage lines and retail supply) of electricity to Australian consumers has traditionally been the responsibility of State governments. Accordingly, the Australian electricity supply industry has developed on a State-by-State basis, with little trade occurring between jurisdictions. Typically, each State industry has been dominated by a vertically integrated publicly-owned electricity utility. Pricing arrangements have not been related to costs and cross-subsidisation has occurred between different customer classes. There has also been little incentive to improve the level of services to customers. Political influence, centralised capacity decisions and the absence of cost-related pricing have led to inappropriate investment decisions, and some States today have excess generation capacity.

In contrast to these long standing arrangements, there is now a process in place for establishing a competitive electricity market for southern and eastern Australia in which:

- generators will compete for the right to supply electricity;
- there will be open access to the grid for new generation; and
- customers will be free to choose who supplies their electricity.

The process behind electricity reform on a national scale began in May 1990 when the Commonwealth Government requested the Industry Commission to undertake a study into, among other things, ways of improving efficiency in electricity generation, transmission and distribution. In May 1991, the Industry Commission released its report recommending: the corporatisation of all government-owned electricity utilities; light-handed regulation of private electricity utilities; ring-fencing generation, transmission and distribution activities and eventually transforming them into fully independent bodies; the provision of open access by transmission businesses; pooling arrangements with merit dispatch order for generators; and improving pricing to reflect the full cost of supply.

As electricity is primarily the responsibility of State governments, any national approach requires a co-operative relationship between the jurisdictions. In October 1990, the Commonwealth and State governments initiated what has now become a series of periodic discussions with the aim of reforming intergovernmental relations. At that initial meeting, leaders from Commonwealth and State governments agreed that there may be additional benefits from an extension of, and/or organisational changes to, the interstate electricity network. Shortly after the release of the Industry Commission report, all governments agreed to establish the National Grid Management Council (NGMC), with the ultimate objective of replacing separate State markets by developing a competitive electricity market covering southern and eastern Australia. The NGMC has since developed market trading rules, network pricing principles, system controls and rules for access to networks. These and many other aspects of the competitive market have been incorporated into an electricity Code of Conduct (the Code), which will be submitted to the Australian Competition and Consumer Commission (ACCC) for approval under the *Trade Practice Act, 1974*.

The national electricity market is to evolve in stages. The market will commence in early 1997 with the harmonisation of trading arrangements between the New South Wales (NSW), Victorian and Australian Capital Territory (ACT) jurisdictions to achieve the competitive benefits of interstate trading. South Australia is expected to join the national market in late 1997, when appropriate structural reforms are completed. Queensland and Tasmania will join following implementation of further competitive reforms and subject to grid interconnection. The feasibility of developing grid interconnections between these States and the existing multi-state grid is being assessed. A proposal to build an interconnection between NSW and Queensland is likely to proceed by 2000. It is unlikely that Western Australia and the Northern Territory will join the National Grid in the foreseeable future due to their distance from other population centres in Australia.

The national market arrangements will evolve progressively as the Code is applied and the national based systems to support the operation of the market are developed and adopted. Governments have recognised the need for a smooth adjustment to a new competitive environment. The transition to a fully competitive market is expected to be completed by 2000.

A report by the Industry Commission has estimated that the annual benefits of electricity and gas reforms would be around US\$ 4.5 billion, or approximately 25 per cent of the total benefits expected from national competition policy reforms. Following this report, Australian governments reaffirmed their commitment to electricity reform when they agreed to implement both national competition policy and a number of related reforms. A key element of this commitment is a series of competition payments from the Commonwealth to the States — conditional on effective implementation of competition policy and related agreements, including those on electricity.

This paper is set out as follows. The next section briefly sets out a description of recent electricity reforms. This is followed by an outline of the Electricity Code of Conduct and the transitional processes before a competitive electricity market commences.

## **Recent reforms**

At the State Government level, the reform process has been under way since the late 1980s/early 1990s, with jurisdictions corporatising their utilities and seeking commercial returns. Most jurisdictions have structurally separated their utilities into separate generation, transmission and distribution businesses. The pace of reform between jurisdictions has differed, with electricity reforms in the states of NSW and Victoria well advanced.

### *New South Wales*

Following a review into the structure of electricity generation in NSW, the State Government restructured its electricity industry in 1995 and has since developed its own market arrangements.

- Two new independent government-owned generation entities were established, acquiring a total of six coal-fired generation plants previously owned by the incumbent utility, Pacific Power. Pacific Power retains one coal-fired generation plant as well as gas-fired and hydro plants.
- The transmission activities of Pacific Power were transferred into a new corporation, TransGrid, which was established on 1 February 1995.

- Two urban and four rural distribution businesses were established through the amalgamation of the former 25 distributors.
- New legislation was introduced to facilitate market trading in electricity and in May 1996 a competitive market for state-based trade in wholesale electricity commenced. A ring-fenced entity within TransGrid is responsible for managing and administering the market.

### *Victoria*

Victoria is the State furthest advanced in the structural separation of electricity utilities, and has already developed a competitive market.

- In October 1993, the State Electricity Commission was structurally separated into Generation Victoria, National Electricity (transmission) and Electricity Services Victoria (distribution).
  - Electricity Services Victoria has since been disaggregated (October 1994) into five new distribution businesses, including two rural businesses.
  - National Electricity was also separated in October 1994 into a wires business (PowerNet Victoria) and a trading business (Victoria Power Exchange).
  - Generation Victoria was separated into five businesses in February 1995.
- In 1994, generators commenced bidding independently into the Victorian wholesale electricity market for the right to supply electricity. Electricity is traded through a 'pool' arrangement that is managed by Victoria Power Exchange.
- The Victorian Government has been engaged in an extensive privatisation programme, in which all five of its electricity distribution businesses and two electricity generation businesses have been sold by trade sale. The Victorian Government proposes to sell the remaining three wholly-owned electricity generation businesses in the 1996-97 financial year, and possibly its share of its partly-owned generation business, and its transmission business.

### *Other Jurisdictions*

The Australian Capital Territory Government corporatised its electricity distribution (and water) utility in 1995, including the separation of the electricity regulatory functions from the corporation. It is proposed that the distribution and retail activities will be ring-fenced.

In July 1995, the Electricity Trust of South Australia (ETSA) was corporatised as ETSA Corporation, consisting of a holding company and four subsidiaries: generation; transmission; distribution/retail; and gas trading. Following the public release of a review of the South Australian electricity industry in April 1996, the South Australian Government announced the separation of electricity generation from the currently vertically integrated utility, ETSA Corporation. Separation of generation activities into a new government-owned corporation will take effect on 1 January 1997.

On 1 January 1995, the integrated Queensland utility (Queensland Electricity Corporation) was split into two separate government-owned corporations - Austa Electric (generation) and the Queensland Transmission and Supply Corporation, consisting of a holding company and eight ring-fenced subsidiaries responsible for transmission (Powerlink) and distribution (the former seven regional electricity boards). The regulation functions were also transferred from the Queensland Electricity Corporation to the

Queensland Government. Queensland is currently undertaking a review of its electricity supply industry, including structural issues.

In Tasmania, the Hydro-Electric Commission remains a vertically integrated electricity business, with ring fencing of generation, transmission and distribution. Legislation was passed in June 1995 designed to allow new participants and extend customer choice in the industry.

The Western Australian Government has begun a programme to increase competition for the electricity industry. On 1 January 1995, the State Energy Commission of Western Australia (electricity and gas) was separated into two separate entities. Western Power remains a vertically integrated electricity utility but has ring-fenced its generation, transmission and distribution activities. From 1 January 1997, large customers will be able to purchase electricity from alternative suppliers, with thresholds coming down until 1999, when all consumers with a load exceeding five megawatts (MW) at a single point can purchase power from any other supplier. An access regime for the transmission and distribution networks will commence on 1 January 1997 and 1 July 1997 respectively.

There is no intention for the Northern Territory Government to significantly reform its electricity industry as it is characterised by a small and geographically diverse load with minimal grid development and a diverse range of power station capacities.

#### ***Benefits to date***

The benefits so far are well recognised. The latest available figures (1994-95 financial year) show that on average consumers are paying less for their electricity, in real terms, than they did in 1989/90, with real prices falling by six per cent. Commercial and industrial prices declined by ten per cent in real terms, while residential prices increased by 2.1 per cent in real terms, reflecting some removal of cross-subsidies. Since 1990/91, average real revenue per employee (labour productivity) has increased by over 80 per cent. For electricity generation, significant improvements have been made since 1990/91, with most States continuing to show improved reliability. Distributors' service quality has also improved, with a steady fall in the average number of minutes per annum customers are without electricity.

#### ***Corporatisation of the Snowy Mountains Hydro-Electric Authority***

Running alongside national electricity reforms, the Commonwealth is involved with the Victorian and New South Wales Governments in corporatising the Snowy Mountains Hydro-Electric Authority. The Authority was established in 1949, with its primary responsibilities being the control of water for irrigation purposes and the production of electricity. Since the production of electricity from the scheme commenced, the NSW, Victorian and Commonwealth governments have been entitled to proportions of electricity generated, which is purchased at cost. However, electricity entitlements at cost of production do not sit easily with the emerging competitive national electricity market, and all jurisdictions agree that the national electricity market would benefit if the Authority participated in the market on commercial terms.

The process towards corporatisation has not been easy. There are major issues that need resolving before corporatisation can take place. Upon corporatisation, Commonwealth debt that funded the initial construction of the Snowy Scheme is to be repaid and the new corporation is to arrange private finance. Another major issue is how the entity plans to handle its water release commitments, for which it does not receive payment, as well as run on commercial terms on the electricity side.

## **The Code**

Governments have agreed that the national electricity market will be subject to a mix of national and state-based regulation. Market behaviour will be subject to the broader “light-handed” market conduct oversight of national competition law as administered by the ACCC, whilst customer franchise pricing, environment, and health and safety matters will remain state-based responsibilities. Market operations (network connection and access, market rules and operation, and system security) will be covered by an enforceable industry Code of conduct which establishes the uniform rules, procedures and regulations which will underwrite the market. The Code also sets out network pricing principles for network owners, although jurisdictions will be responsible for regulation of network prices.

The National Electricity Code Administrator (NECA) and the National Electricity Market Management Company (NEMMCO) are the two key organisations with regulatory and market management responsibilities respectively in the competitive national electricity market.

Once operational, NECA will be responsible for administering the Code and will have several powers including:

- monitoring and reporting on compliance with the Code and its adequacy;
- enforcing the Code;
- dispute resolution concerning the provisions of the Code; and
- managing changes to the Code.

NEMMCO will manage the market arrangements in accordance with the Code, and will have the following responsibilities:

- operating and administering a spot market for electricity;
- operating a short-term forward market;
- maintaining system security and performing projected assessments of system adequacy;
- determining and securing the market’s requirements for ancillary services;
- securing the availability of reserve plant;
- facilitating and trading in inter-regional hedge contracts; and
- providing financial settlement services.

### ***Market trading arrangements***

The competitive electricity market should see prices closely reflect costs. Market trading arrangements based on merit order of dispatch will force generators to bid against each other for the right to be dispatched, and will encourage generators to reduce their costs so that they can be dispatched. For the retail sector, customers’ ability to switch retailers or participate in the wholesale market will encourage retailers to supply electricity at a competitive price and improve services by offering customers a variety of products, such as separation of charges in billing and multiple tariff structures.

There will be two markets for the competitive electricity industry — a wholesale market and a retail market. All generators with a nameplate rating greater than 30 MW must trade through the wholesale market. Generators with a nameplate rating less than 30 MW are not required to operate in the co-ordinated central dispatch process (although they may choose to do so). The retail market is for customers who choose to receive all electricity needs from a retailer. Under a fully competitive electricity market, all customers will be eligible to either choose the retailer that best suits their needs, or participate

in the wholesale market. To enhance competition at the retail level, distribution businesses with a retail arm will be required to ring-fence their retail activities from their network activities.

Under the wholesale market, there will be three levels of trading: bilateral contracts; short-term forward market trading; and spot market trading. Participants will be able to choose to trade in any combination of these three levels.

- It is expected that long-term bilateral trading will cover the bulk of trading activity. The contracts will be determined between wholesale buyers and sellers. Sellers could be generators, retail suppliers or independent traders and buyers could be end-use customers, retail suppliers or independent traders. Contracts will not confer a right of dispatch for generators.
- The Code does not set out any details of trading in the short-term forward market, although NEMMCO is responsible for establishing a short-term forward market. It is expected that a 2-day ahead short-term forward market will eventually be established, which will allow customers (including generators) to buy or sell to adjust their contract position up or down. The offers will be stacked and a clearing price will be determined. All buys and sells below the clearing price will be traded (see Figure 1).
- For amounts not covered by long-term and short-term contracts, generators and customers will sell and buy electricity at the spot price. It is under the spot market that the ultimate price is determined. There, an ex-post (after the event) price is determined on a half hourly basis designed to clear the market (see Figure 2). Generators will bid every day for dispatch and the lowest price units will run first. The spot price is likely to be volatile and the NGMC has proposed to set a ceiling price for the spot market. A floor price will be set at zero for customers only, but generators can bid below zero to be dispatched.

Because of the historic lack of trade in electricity between jurisdictions, the capacity of interconnectors linking the previous State-based networks is generally small. At certain times spot prices between regions will diverge due to constrained links or losses across interconnectors. These price differences will present risks to market participants with contracts in other regions. However, participants will be able to manage risks by buying hedging contracts for inter-regional price differences. The long-term inter-regional hedge contracts will either be auctioned or tendered.

Trades in the spot market will be conducted through the pool with NEMMCO in charge of a central computerised system for the settlement of wholesale energy. NEMMCO will settle the results of short-term forward market and spot market trades and can also optionally "net out" bilateral trades notified by participants. NEMMCO will also be responsible for the co-ordinated dispatch process and processing of generator bids to establish a merit order, and determining the spot market price. While the new arrangements are maturing, NEMMCO will be required to ensure that the market works smoothly (i.e., provides adequate reserves) and assist generators in deciding to produce the energy to avoid involuntary shutdown.

### ***Access to networks***

In contrast to generation and retail activities, it is widely accepted that network activities exhibit natural monopoly characteristics. The Commonwealth Government recently passed legislation (*Competition Policy Reform Act, 1995*) which implements various aspects of the national competition policy reforms, including parameters governing third party access to essential infrastructure services (Part

IIIA of the Trade Practices Act). The objective is to increase competition in markets dependent on access to natural monopoly facilities, and hence improve efficiency and service delivery.

Under Part IIIA of the Trade Practices Act, there are three ways by which potential users can gain access to an essential facility. First, service providers of natural monopoly facilities can volunteer to provide the ACCC with an access 'undertaking', which sets out the terms and conditions on which they will offer access to any third party. Second, if the service provider chooses not to give the ACCC an access undertaking, a potential user may seek a legal right of access to a facility (via declaration by the relevant Minister). A third option arises if a state-based access regime for essential facilities is accredited as effective.

The Code has been drafted to meet the requirements of Part IIIA of the Trade Practices Act in the electricity industry context. For consistency reasons, the Code goes beyond the minimum requirements as set out in the legislation. Under the Code, all network owners will be required to submit to the ACCC an access undertaking which sets out the terms and conditions on which they will offer access to any third party. The access undertakings will conform to the principles for access within the Code, and therefore be consistent with the Code.

In the event of a dispute arising about access, or between any two participants in the market including NECA, the Code provides for a dispute resolution mechanism. Initially, a Dispute Resolution Adviser is appointed to handle disputes. If the Adviser is satisfied that a genuine dispute exists, the Adviser will appoint a three-person panel to arbitrate the dispute. Access disputes can also be resolved by the ACCC, once the mechanisms within the Code have been exhausted.

### *Network pricing*

In February 1994, Heads of Government agreed to the principle of cost reflective transmission pricing. Full cost reflective network pricing will apply to high voltage lines (transmission networks). The Code provides for 50 per cent of transmission charges to be postage stamped (the overall costs of use of the lines are covered but shared equally across different customer classes and voltage levels). The same general principles also apply to distribution network pricing, although jurisdictional regulators will have discretion over the interpretation of these principles.

All participants in the wholesale market will face connection charges. Some generators may not be required to pay network usage charges, depending on negotiations on access arrangements between generators and the network owner. Generators connected to the transmission network will also be able to negotiate firm access contracts with network service providers. A firm access contract provides an agreed level and standard of power transfer capability from the transmission or distribution network. Recipients of electricity will be charged a network usage charge. The charge can either be fixed, based on energy usage or based on demand.

Due to the network's monopoly nature and therefore the ability of network operators to seize monopoly rents, the Code sets out the form and mechanism of economic regulation, including the definition of the services to be regulated, to ensure participants do not face excessive charges to have access to the transmission and distribution networks. Economic regulation (revenue cap) is to be of the CPI-X form (CPI is the consumer price index), where X is an implicit efficiency driver, as the efficiency gains are contained within the revenue cap. A separate revenue cap will apply to each network owner.

Once the competitive national electricity market is fully operational, governments have agreed that a single national regulator (the ACCC) will regulate charges in relation to transmission services.

Charges for distribution networks services will be regulated by State governments, although State governments have the option of passing distribution network service regulation to the ACCC. The ACCC, and the Victorian and New South Wales regulators are considered independent of their respective governments. Regulators in other jurisdictions are currently embedded within government departments.

## **Transition processes**

The NGMC is in the process of completing the Code, which will then be presented to the ACCC for approval under the Trade Practices Act. The South Australian Government has already passed lead legislation dealing with aspects of the Code that require separate statutory provision. Over the next 18 months other jurisdictions will pass legislation which refers to the South Australian legislation.

Rather than a 'big-bang' approach, the market will evolve in stages. Victoria, NSW and the ACT will seek an authorisation from the ACCC to operate jointly in a harmonised market. This market (NEM1) is expected to commence around February 1997. The second-stage market (NEM2) will commence three months after the ACCC has approved the Code and accepted the access undertakings in accordance with the Trade Practices Act (around July 1997). NEM2 will adopt the Code, except for the market rules and system security. NEM3 will commence once software is developed to enable operation of the market rules and system security.

Different jurisdictions will have various derogations from the full requirements of the Code for a limited number of years. These derogations will also require authorisation by the ACCC. The derogations are to enable a gradual removal by jurisdictions of various impediments to a competitive market, with such removal being done in a way that minimises severe financial burdens for particular classes of customers. The derogations also enable jurisdictions to honour existing contracts which do not conform with the Code. Many derogations will cease before the competitive market becomes fully operational in 2000.

### ***Existing contracts with generators/customers***

Some jurisdictions have contracts in place that they wish to continue to honour, which either guarantee generators a minimum profit over a number of years or large customers a portion of their electricity needs at a set price. These contracts will continue as part of the transition process to a fully competitive market.

### ***Code Administrator***

NSW and Victoria each have a competitive wholesale market for electricity. Both jurisdictions have their own agencies currently performing many roles similar to the proposed responsibilities of NEMMCO and NECA. The State-based agencies, TransGrid and the Victorian Power Exchange, will continue to be responsible for running the State-based markets until February 1997, when the agencies are expected to operate jointly in a harmonised market consisting of Victoria, NSW and the ACT.

### ***Franchise customers***

There is currently a significant level of debt in the industry. To manage the transition to a competitive market and assist generators and distributors to reduce their levels of debt, the interim process will likely involve vesting contracts. Vesting contracts give generators and distributors certain geographical areas to supply and allow them to receive above market prices, in order to reduce their debt. Coverage will be limited to the franchise market only (customers that are tied to a particular

distributor/retailer). As customer eligibility to the wholesale market thresholds increases, fewer customers will be franchised and generators and distributors will increasingly be subject to more competitive pressures, until all franchising disappears and all customers have a choice as to how and from whom they wish to purchase their energy.

### *Network pricing and regulation*

Each jurisdiction will be responsible for economic regulation of the transmission wires as well as the distribution wires until 1 July 1999 when the ACCC commences its role as a single national regulator for charges in relation to transmission services. However, Victoria and South Australia have derogations which allow state-based regulation beyond 1 July 1999, although this is yet to be authorised by the ACCC. Jurisdictions may also choose to pass the responsibility for regulation of distribution to the ACCC after 1 July 1999.

### *Mergers*

Conduct within the competitive market will generally conform with the Trade Practices Act. In the case of mergers, section 50 of the Act would apply to transactions that would substantially lessen competition in the market. Victorian legislation goes beyond the Trade Practices Act to prevent re-integration of generators and distributors and limits the interest that market participants can hold in other participants. It is expected that this provision will remain until powers are transferred to the ACCC.

## **Conclusion**

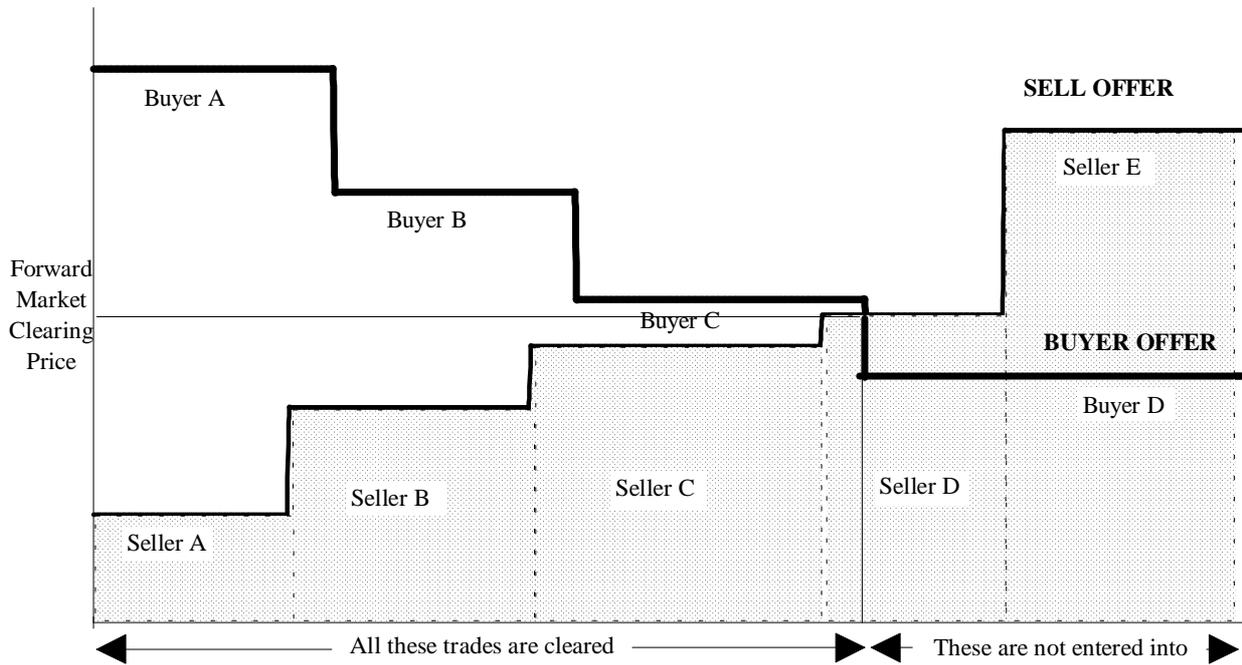
The Australian electricity supply industry has been characterised by separate State markets. Many jurisdictions have now corporatised and structurally separated their utilities with an aim of seeking commercial returns. Benefits so far have been lower prices to consumers, greater efficiency, greater returns to shareholders (traditionally governments), and improved reliability and service quality.

The level of competition in electricity at present is limited to two State markets with few formal linkages between them. There will continue to be several quite distinct retail markets, as a retailer is required to apply for a licence in each jurisdiction in which it intends to participate.

The new market will have benefits as jurisdictions with excess generation capacity will have an avenue to utilise those plants rather than having them lie idle. The new market is also expected to benefit businesses as cross-subsidies are steadily removed, and as large businesses will be able to negotiate directly with generators as well as retailers. It will also bring benefits to consumers as there will be competition in the provision of services.

Reforms in the electricity industry are running alongside reforms in the natural gas industry. It is expected that reforms in the natural gas industry will facilitate competition between the two sources of energy, but also see gas play a greater role in the supply of electricity.

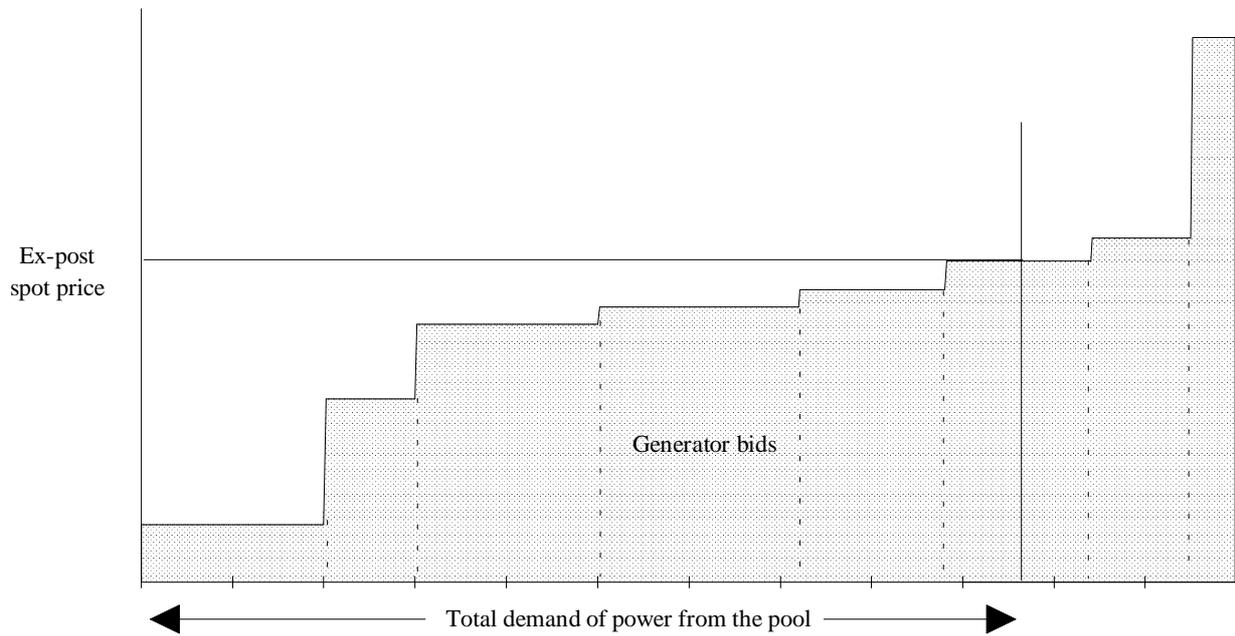
*Figure 1: Short-term forward trading*



Up to 48 hours ahead of each day of trading:

- buyers submit a “buy offer” to buy a quantity of electricity at the maximum price at which they are prepared to buy;
- sellers submit a “sell offer” to sell a quantity of electricity at the minimum price at which they are prepared to sell;
- the offers are stacked as illustrated in Figure 1, and a single clearing price is determined from the intersection;
- all buys and sells below the intersection are deemed to be traded.

*Figure 2: Spot trading*



One day ahead of trading:

- generators bid for the opportunity to run their plant for each half-hourly period;
- NEMMCO receives the bids and creates a dispatch order; and
- the plant with the lowest price is run first.



# BELGIQUE

Le système électrique belge résulte pour l'essentiel de la loi du 10 mars 1925 dont le titre général ne porte paradoxalement que sur les distributions d'énergie électrique.

La loi du 8 août 1980 relative aux propositions budgétaires 1979-1980 (art. 173, § 1) prévoit également un certain nombre de dispositions qui fixent notamment la procédure d'adoption du programme national d'équipement des moyens de production et de grand transport d'énergie électrique.

## **Le cadre législatif**

### ***Production d'électricité***

#### *Loi du 10 mars 1925 sur les distributions d'énergie électrique*

Selon cette loi, l'initiative de production est libre pour les sociétés privées et les communes (article 5).

En revanche, cette liberté est limitée, en ce qui concerne l'Etat et les provinces (article 4) à la fourniture, au moyen de leurs propres lignes, des établissements et services dont ils ont la gestion ou à l'approvisionnement des communes et des particuliers échappant aux dispositions spécifiques prévues en matière de distribution électrique (article 3).

Les critères et procédures d'autorisation nécessaires pour installer des centrales de production sont établis sur une base objective et non discriminatoire (cf. à cet égard les dispositions générales prévues concernant la réglementation générale relative à la protection du travail et celles ayant trait à l'occupation des sols qui sont fixées par les dispositions légales et décrétales relatives à l'aménagement du territoire).

#### *Loi du 8/8/1980 relative aux propositions budgétaires 1979-1980 (art. 170, 171 et 173, § 1er et art. 172 modifiés par l'A.R. n° 147 du 30/12/1982).*

Le plan d'équipement des moyens de production et de grand transport d'énergie électrique doit être approuvé par les ministres des Affaires économiques, après avis du Comité de Contrôle de l'Electricité et du Gaz (article 170) et du Comité National de l'Energie (article 173, § 1er).

### ***Transport d'électricité***

#### *Loi du 10/3/1925 précitée*

Cette loi fixe essentiellement les conditions d'utilisation du domaine public (accord de voirie et permission de voirie) et de terrain privé (déclaration d'utilité publique) pour l'établissement de lignes et de réseaux destinés au transport et/ou à la distribution.

L'Etat, les provinces et les communes peuvent effectuer le transport et la distribution de l'énergie électrique au moyen de conducteurs empruntant des voies publiques.

Les pouvoirs publics peuvent également permettre à des particuliers ou à des sociétés d'utiliser dans les mêmes conditions la voirie publique moyennant l'octroi d'une permission de voirie.

Dans ce cas, chaque échelon de pouvoir demeure compétent dans son domaine respectif pour l'octroi de la permission de voirie.

### ***Distribution d'électricité***

#### *Loi du 10/3/1925 précitée*

S'agissant de la distribution, la loi subdivise les fournitures d'énergie électrique en deux catégories :

- catégorie A : qui comprend les fournitures utilisées exclusivement ou principalement soit pour l'éclairage, soit pour la force motrice dans tous les cas où la puissance requise est inférieure à 1 000 kW (10 000 kW actuellement en Région wallonne);
- catégorie B : comprenant les fournitures à concurrence de 85 pour cent au moins pour la force motrice et qui ont des besoins de puissance dépassant 1 000 kW. Cette limite étant mesurée par la puissance quart horaire maximale utilisée normalement.

Seules les fournitures de la catégorie A sont susceptibles de faire l'objet de l'exercice d'un droit exclusif de distribution.

La commune peut desservir par une distribution publique exploitée en régie la généralité des consommateurs établis sur son territoire.

Le droit de distribution de la régie peut s'exercer à titre exclusif mais uniquement à l'égard des particuliers entrant dans la catégorie A (article 5).

#### *Loi spéciale du 8/8/1980 de réformes institutionnelles (art. 6, § 1er VII)*

La loi spéciale confère exclusivement aux Régions la distribution et le transport local d'électricité au moyen de réseaux dont la tension maximale est inférieure ou égale à 70 000 volts.

## **Organe de contrôle**

### ***Comité de Contrôle de l'Electricité et du Gaz***

Depuis 1955, la Belgique connaît un régime de contrôle et de concertation établis actuellement sous la forme d'un organisme autonome d'utilité publique : le Comité de Contrôle de l'Electricité et du Gaz. Cet organisme a pour objet de veiller à ce que les situations technique, économique et tarifaire des secteurs électricité et gaz évoluent dans le sens de l'intérêt général et s'intègrent harmonieusement dans la politique énergétique globale.

Les membres de ce Comité sont les organisations inter-professionnelles représentatives qui prennent les décisions à l'unanimité; les représentants du gouvernement fédéral et des gouvernements régionaux siègent au Comité où ils disposent d'un droit d'initiative et de suspension des décisions. Les organisations des secteurs électriques et gaz, sont des organisations répondantes et n'ont pas le droit de vote.

Le Comité est chargé :

- de veiller à ce que les tarifications et les conditions de fourniture de tous les clients en électricité et en gaz soient établies en fonction de l'intérêt général;
- d'examiner les affectations de la recette des secteurs en électricité et en gaz;
- d'étudier tout problème technique, économique ou autre, et notamment l'utilisation rationnelle de l'énergie, touchant le régime de la production et de la distribution d'électricité, l'importation, la production, le transport et la distribution du gaz qui serait de nature à contribuer à la réalisation de sa mission;
- de faire établir et approuver un plan comptable national unique à appliquer par les entreprises d'électricité et de gaz;
- d'examiner le programme national d'équipement en moyens de production et de grand transport d'énergie électrique;
- d'examiner les aspects économiques et techniques de l'approvisionnement du pays en gaz naturel et de l'approvisionnement en combustibles et matières fissiles du secteur de la production d'électricité;
- de répondre à toute demande d'avis de la part des pouvoirs publics compétents;
- d'examiner la suite à donner à toute plainte introduite auprès de lui, relative à toute fourniture d'énergie électrique et de gaz;
- de publier un rapport annuel.

## **Comités Consultatifs**

### ***Comité National de l'Energie***

Ce Comité institué par l'arrêté royal du 12 décembre 1975 modifié par l'arrêté royal du 23 novembre 1977 et complété par la loi de réformes institutionnelles du 8 août 1980 (articles 168, 169 et 173 § 1) a pour but essentiel :

- de donner un avis sur les objectifs généraux de la politique énergétique et sur les moyens à mettre en oeuvre pour réaliser cette politique;
- de suivre l'exécution de celle-ci et d'en évaluer les résultats, tant globalement qu'au niveau de chaque secteur énergétique concerné.

Le Comité se compose, à parité égale, de représentants du gouvernement et des organisations socio-économiques ainsi que d'un représentant des consommateurs.

### ***Comité permanent de l'électricité***

Ce Comité institué par l'arrêté royal du 26 octobre 1967, modifié par l'arrêté royal du 27 novembre 1975 doit conformément aux dispositions de la loi du 10 mars 1925 sur les distributions d'énergie électrique, être entendu obligatoirement avant toute décision importante du gouvernement, susceptible d'intervenir dans le cadre de cette loi.

Il émet également un avis au sujet de dérogations relatives à la réglementation générale pour la protection du travail ainsi que celles concernant le règlement général sur les installations électriques.

Il peut en outre donner un avis sur les questions relatives aux permissions de voirie et aux déclarations d'utilité publique.

### **Réflexion relative au contrôle des intercommunales mixtes**

Les articles 14 et 27 des nouveaux statuts, qui sont actuellement en cours d'adoption au sein des diverses intercommunales mixtes de distribution de gaz et d'électricité, décrivent les modalités d'exercice du droit de rejet par l'associé minoritaire d'une décision du conseil d'administration ou de l'assemblée générale de l'intercommunale.

Ces dispositions statutaires relatives à la prise de décision visent à sauvegarder les intérêts de l'associé minoritaire, comme le prévoit d'ailleurs la loi du 22 décembre 1986 relative aux intercommunales. Leurs intérêts sont garantis lors de la prise de décision par l'instauration d'un droit de protection statutaire limité : il s'agit d'un droit de veto applicable uniquement à certaines matières, telles que celles "qui sont susceptibles d'avoir des conséquences sur les résultats de l'intercommunale et la répartition de ceux-ci".

Il est important de noter que ces dispositions statutaires sont identiques à celles qui étaient déjà en vigueur précédemment. Aucune modification n'a été apportée aux conditions qui régissaient l'exercice par l'associé minoritaire du droit de rejeter une décision. Les nouvelles dispositions statutaires n'accroissent pas les pouvoirs du partenaire minoritaire mais au contraire, y apportent une limite supplémentaire puisqu'il est stipulé dorénavant que "l'exercice de ce droit de rejet (...) ne peut faire obstacle à l'accomplissement de l'objet social de l'intercommunale".

### **Organisation du secteur de l'électricité**

Le contexte de contrôle du secteur décrit ci-dessus, avec ses implications en matière de planification coordonnée des grands investissements ainsi que l'unicité de la tarification de l'électricité sur l'ensemble du territoire, a favorisé l'extension d'une politique de rationalisation et de coordination déjà justifiée par des impératifs d'économie et d'efficacité internes au secteur.

L'organisation et la structure actuelle du secteur résultent de cette politique de rationalisation qui a amené d'une part à la réduction du nombre de compagnies d'électricité et des entités de distribution et d'autre part à la création d'organes communs assurant une meilleure intégration du fonctionnement du secteur. L'ensemble de ces organes est succinctement schématisé dans le tableau in fine.

Le Comité de Gestion des Entreprises d'Electricité (C.G.E.E.) qui émane des sociétés privée et publique d'électricité (ELECTRABEL et SPE) est le premier de ces organes communs. Il s'est vu déléguer de larges compétences en matière de politique d'investissement, de plan comptable et de politique tarifaire et assure la représentation des sociétés membres au Comité de Contrôle.

Le financement de la construction et la gestion des moyens de production et de grand transport d'électricité d'Electrabel et SPE sont assurés au travers de la société pour la Coordination de la Production et du Transport de l'énergie Electrique (C.P.T.E.). Celle-ci confie à ELECTRABEL et SPE la mission de gérance qui consiste, dans le cadre de son objet, à construire, gérer et exploiter pour son compte l'ensemble des installations de production et de transport d'électricité dont elle dispose. La C.P.T.E. assure la coordination de la production de leurs centrales et la conduite du réseau d'interconnexion en veillant à tout moment à l'emploi des centrales les plus économiques. La C.P.T.E. dispose d'un dispatching central situé à Linkebeek (près de Bruxelles) qui coordonne la production de l'ensemble du parc des unités et supervise les transports sur les lignes d'interconnexion à 380 kV, 220 kV et 150 kV avec télécommande des premières liaison directe avec les dispatchings qui supervisent les postes de conduite de zone (réseaux locaux 220 kV, 150 kV et 70 kV). Les échanges internationaux sont également gérés par le C.P.T.E.

Parallèlement à cette gestion centralisée des moyens de production, un organisme centralisant les achats de combustibles pour les centrales nucléaires permet un approvisionnement dans de meilleures conditions, il s'agit de Synatom; cette société s'occupe de l'ensemble du cycle du combustible nucléaire et reste propriétaire de ceux-ci jusqu'à leur stockage définitif par l'ONDRAF (Office National des Déchets Radioactifs) après usage.

Laborelec gère les laboratoires centraux communs créés pour assurer la recherche et les études demandées par le secteur sur des problèmes spécifiques à l'électricité et aux moyens mis en oeuvre pour sa production et son usage.

On notera également l'existence de sociétés filiales à des participations conjointes des sociétés belges et de la France (EDF) disposant de quotes-parts de la production de centrales nucléaires à Tihange 1 (Semo) sur le territoire belge et à Chooz (Sena) sur le territoire français.

On mentionnera encore différentes associations professionnelles assurant diverses charges de relations extérieures et d'intérêt commun. La Fédération Professionnelles des Producteurs et Distributeurs d'électricité de Belgique (F.P.E.) est chargée des relations avec les autorités publiques en matière par exemple de règlement général sur les installations électriques, de permissions de voirie, de permis de bâtir et toutes questions d'ordre juridique, fiscal et légal. Elle assure les relations avec différentes associations belges (ex. : les autoproducteurs industriels) et internationales, comme avec différents organismes internationaux (tels le Comité de l'Energie électrique de la C.E.E. ou la Conférence Mondiale de l'Energie). La F.P.E. est également chargée de statistiques relatives à l'électricité et publie annuellement un annuaire statistique. Le CEB (Comité Electrotechnique Belge) est un organisme paritaire regroupant distributeurs d'électricité et fabricants de matériel électrique en liaison sur le plan national et international avec les organismes de normalisation (labels de qualité et normes techniques).

## **Structure du secteur de l'électricité**

### ***Production et interconnexion-transport***

#### *Secteur privé*

Ce secteur est le plus important en Belgique. Il produit environ neuf dixièmes de l'énergie. Il est actuellement composé d'une société ELECTRABEL issue de la fusion en 1990 des trois sociétés Intercom, Ebes et Unerg. Ces trois sociétés agissaient déjà de façon coordonnée, grâce aux organes décrits dans les chapitres suivants.

#### *Secteur public*

Ce secteur représente une part de la puissance installée actuellement d'environ cinq pour cent du total. L'article 173 de la loi du 8 août 1980 prévoit que le secteur public de la production d'électricité ressortira à la Société Coopérative de Production d'Electricité (SPE).

#### *Secteurs privé et public*

Le même article 173 de la loi du 8 août 1980 imposait l'adhésion de la SPE au Comité de Gestion des Entreprises d'Electricité telle que prévue par la convention sur l'électricité et le gaz du 12 mai 1964 de manière à coordonner les investissements de production et de grand transport d'électricité comme si ces moyens relevaient d'une seule entité.

L'arrêté royal du 5 février 1981 prévoit en exécution de l'article 173 précité que le programme national d'équipement des moyens de production et de grand transport d'énergie électrique en cours et à venir réservera à la SPE une part des capacités de production nouvelles de manière à ce que la SPE atteigne à l'avenir 15 pour cent de la puissance totale installée de l'ensemble des producteurs-distributeurs du pays. En vue d'atteindre ce pourcentage, la SPE dispose en vertu de cet arrêté royal, d'un crédit de puissance de 25 pour cent lors de toute décision d'investissement du Comité de Gestion. De même, cet arrêté royal organisait la cession à la SPE des parts indivisées dans quatre unités nucléaires du secteur privé.

En application de l'article 173 de la loi du 8 août 1980 et de cet arrêté royal, Electrabel et SPE ont été amenés à investir en commun et à créer des indivisions et des associations de participation pour la plupart des centrales récemment construites en Belgique.

En vue de simplifier l'ensemble de ces conventions, les secteurs privé et public ont signé, avec l'approbation du Gouvernement, la création d'une association en participation.

#### *Autoproducteurs industriels*

Certaines sociétés industrielles assurent leur propre production destinée à couvrir leurs besoins propres et ont la possibilité de vendre leurs surplus de production à des tiers et notamment aux producteurs, selon des tarifs recommandés par le Comité de Contrôle. Leur part relative dans la production totale est d'environ quatre pour cent. Dans la suite du texte, ils ne seront pas considérés comme faisant partie des sociétés du secteur de l'électricité tel que défini pour cette brochure. Ils ne font pas l'objet d'un contrôle du Comité de Contrôle.

### *Distribution d'électricité*

En Belgique, les communes disposent du monopole légal de la distribution de l'électricité sur leur territoire aux clients prélevant au maximum 1 000 kW, via des réseaux de tension inférieure à 30 kV.

Les communes peuvent organiser cette distribution comme elles l'entendent. Elles peuvent organiser et gérer elles-mêmes leur distribution, seules (régies communales) ou en association avec d'autres communes (intercommunales pures) ou s'associer avec des sociétés privées pour organiser la gestion et les investissements en distribution (intercommunales mixtes).

Le secteur mixte représente environ huit dixièmes de la distribution, le solde étant assuré par le secteur public pur; le système dit des concessions où la distribution est totalement confiée à une société privée n'existe pratiquement plus depuis plusieurs années. La société privée associée aux communes en distribution d'électricité est celle que l'on retrouve en production (ELECTRABEL).



# CANADA\*

## Introduction

The Canadian electricity sector has traditionally consisted of vertically integrated, regulated or government-owned monopoly utilities. However, in Canada, as in other countries, there is growing interest in using market forces to promote the efficient and low cost supply of power. This note provides an overview of the current Canadian electricity system and the main initiatives taken to date toward opening the system to greater competition. In addition, it outlines the involvement of the Competition Bureau in promoting pro-competitive reforms in the electricity sector.

## Overview of the Canadian Electricity Sector

Responsibility for the electricity industry in Canada is principally held at the provincial government level. As a result, the industry has developed as a number of separate, although interconnected, electricity systems. No single industry structure applies across the provinces. For example, the Alberta industry contains a mix of private and publicly-owned utilities controlling generation, transmission and distribution in their service areas. The electricity sectors of Quebec and British Columbia (B.C.), in contrast, are each dominated by a single fully integrated and publicly-owned utility. In Ontario, generation and transmission are dominated by a single provincial crown corporation with distribution being provided, for the most part, by municipal utilities.

The mix of generation facilities also varies considerably from one province to another. A number of provinces, including Quebec, Manitoba and British Columbia rely principally on hydraulic generation. New Brunswick and Alberta get most of their power from fossil fuel sources. Ontario's main source of electricity, about 60 per cent of all generation, is nuclear facilities. The performance of individual utilities is another area in which they may differ considerably. As an indication, a 1994 survey of average electricity rates at the same level of consumption in seven major population centers in Canada found differences in prices, in some cases, of more than 60 per cent.<sup>1</sup>

There are also certain characteristics that are common among the provincial electricity systems. Overall, little scope has been allowed for competition. Generating utilities have dominated supply in their service areas with little threat from independent power producers. In addition, while there are interconnections between the provinces, trade between them has been limited.

As noted above, the benefits of maintaining vertically integrated monopoly electricity utilities are being increasingly questioned in Canada. International developments have played an important role in this regard. The adoption of competitive electricity systems in the U.K., Norway and other countries has stirred interest in pro-competitive reforms in Canada, not only by proving the feasibility of open access electricity systems, but also by demonstrating the potential benefits of electricity industry competition. The efforts being made to open the U.S. electricity system to greater competition are also being watched

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\* This note was prepared by Mark Ronayne of the Competition Bureau of Canada. It incorporates comments provided by Rob Anderson.

closely. There is broad concern that competitive U.S. electricity markets will provide electricity-using industries in that country with a new competitive advantage unless the Canadian electricity system is also opened to competition.

Various other forces are also contributing to the interest in electricity sector reform. Provinces, such as Alberta, Quebec and B.C., that have relatively low electricity costs may have much to gain from reciprocal market opening arrangements allowing them to export to other jurisdictions. Independent power producers across Canada are advocating more open market structures that will give them more opportunity to be the electricity providers of the future. Also, some have argued that opening the electricity sector could generate substantial environmental benefits by encouraging more efficient fuel use, speeding up the replacement of older, more polluting generation and spurring the development of cleaner generation technologies.

### **Recent Efforts to Establish Competition in the Canadian Electricity Sector**

The growing interest in greater use of competitive market forces to promote the efficiency and adaptability of the Canadian electricity sector has not yet led to major reforms across the country. However, significant progress is being made within a number of individual provinces. This section describes developments in the three Canadian provinces that have given the most consideration to pro-competitive electricity sector reforms, namely Alberta, Ontario and British Columbia. It also outlines initiatives to consider opening the Canadian electricity system at the national level.

#### ***Alberta***

The Alberta electricity system is unique in Canada in having three major vertically integrated utilities, including two which are privately-owned.<sup>2</sup> Each utility has traditionally controlled both the generation, and transmission of electricity in their franchise areas. To prevent this from resulting in different prices being paid for electricity in different regions of the province, the wholesale costs of electricity in the province, from 1982 to 1995, were pooled according to the provisions of the Electric Energy Marketing Act (EEMA).

A review of the EEMA cost pooling mechanism, started in the early 1990s, led to a wide-ranging debate about the competitive future of the Alberta inter-connected system. A proposal for restructuring the system, developed by a Steering Group consisting of various industry stakeholders, was released in October, 1994.<sup>3</sup> The key elements of this proposal formed the 1995 *Electric Utilities Act (EUA)* which established a framework for gradually establishing a full open access electricity system in Alberta.

The pro-competitive reforms embodied in the *EUA* have placed Alberta among the leading jurisdictions in North America in implementing a competitive electricity system.<sup>4</sup> Under the *Act*, all buying and selling of electricity within the province must occur through a competitive power pool. The pool consists of an hourly spot market. All trading occurs at a single price, determined hourly, equal to the weighted average cost of the most expensive units dispatched or demand curtailed. All distribution utilities and other buyers are required to obtain their power needs through the pool. Participation in the pool is open to all potential electricity suppliers meeting certain minimum financial, technical and other requirements.

A Power Pool Administrator has been established to run the pool. Its main responsibilities include managing the bid-offer process, determining the merit order and the scheduling of dispatch for generation, the scheduling of generation for system services and carrying out financial settlements among

purchasers and suppliers. The actual dispatch of power is controlled by the system operator which has further responsibilities to ensure the reliable operation of the system. The operations of the power pool are overseen by the Power Pool Council made up of representatives from consumer groups, independent power producers and other organizations having a stake in the pool.

The Alberta electricity system, while among the most advanced in North America in actually implementing a competitive electricity system, still has a number of issues to resolve in completing the transition to fully open competition. Although all electricity is exchanged through spot market, the actual price received for most generation continues to be regulated. This seemingly paradoxical result is achieved through "legislated hedges" covering most of the generating capacity in the province. The hedges were put in place, on one hand, to protect generators from possibly having stranded costs as a result of the transition to competition, and, on the other hand, to help protect electricity consumers from the possibility of having to pay a higher price for electricity generated by existing, low-embedded cost facilities.

The legislated hedges work as follows. The distributors of electricity in the province are required to make capacity payments to the generators equal to the generators' fixed costs for all regulated generation. The generators also receive the market clearing price for power they provide to the spot market. However, if the market clearing price is greater than their average operating costs, as estimated by the regulator, they must return the surplus revenue to the Power Pool Administrator for distribution back to the distributors.

This regulatory scheme, over time, will gradually decrease in importance as the existing generating capacity in Alberta is retired. Discussions are also under way within Alberta to determine the conditions under which generating facilities can be taken out of regulation. A key related consideration that is yet to be considered, however, is whether the current structure of the electricity generation market in Alberta would support effective competition after deregulation. Currently, about 50 per cent of all capacity in Alberta, including imported electricity, is controlled by a single utility. The three largest utilities combined account for just over 85 per cent of all capacity in the province.

Another ongoing issue in regard to the restructuring of the Alberta electricity system is ensuring all competitors of equal access to the system. Measures that are being adopted to deal with this issue include: *(i)* the establishment of the Power Pool Administrator as an independent corporation to rank bids to the power pool and schedule dispatch; *(ii)* the establishment of a single transmission administrator and the Electric Transmission Council, consisting of representatives from the various interested parties, to run and set prices for the provincial transmission system (these prices are subject to regulation by the Alberta Energy and Utilities Board); and *(iii)* functional separation of the integrated utilities' generation, transmission and distribution facilities. It remains to be seen whether these steps, as compared to more radical measures such as requiring the full separation of transmission, distribution and generation, will be adequate for establishing a level playing field.

A further important matter to be resolved is whether and when retail competition will be permitted in Alberta. Under the present system, only distribution utilities and exporters are entitled to obtain electricity from the spot market. Industrial and household consumers can only obtain electricity through their local distribution utility.

## *Ontario*

The process of reforming the Ontario electricity system started in 1992 with the appointment of Maurice Strong to the CEO position of the main provincial utility, Ontario Hydro. During Mr. Strong's tenure, which ended in October 1995, major changes were made within the provincial utility not only to prevent further rate increases but also to help prepare the utility for the possibility of a competitive future. Some of the more significant developments included: the separation of generation into three operating units according to fuel type; a major reduction in Ontario Hydro's workforce, the offering of new rate options to maintain or increase load on the Ontario electricity system; the institution of various market experiments; and the establishment of separate operating units for transmission and the marketing of technologies. In addition, Mr. Strong openly advocated a full review of the regulatory, institutional and ownership structure for the Ontario electricity industry to open it to competition. In this, he was supported by major power consumers, the municipal electric utilities and a number of other major interest groups.<sup>5</sup>

A Committee was established by the Ontario government, in November, 1995, to fully examine the Ontario electricity system. The Advisory Committee on Competition in Ontario's Electricity System, made up of prominent members of the business, legal and academic communities, was given a broad mandate to investigate and assess options for phasing in competition in the Ontario electricity system and to make recommendations regarding the supporting structural, legislative and regulatory changes that would be required.

In May 1996, the Advisory Committee issued a report calling for sweeping pro-competitive changes to the Ontario electricity system.<sup>6</sup> The Report calls for the rapid establishment of wholesale competition in Ontario with retail competition to follow "as soon as practicably possible." Under the Committee's proposals, all generators would be given equal access to the electricity network including those located in other provinces as well as the U.S.

To pave the way for competition, a full scale restructuring of the Ontario electricity system is called for based on the following elements. The transmission system would be fully separated from generation assets. The generating assets of the provincial electric utility would be broken up and access to the Ontario electricity system from other jurisdictions enhanced with the goal of establishing an effectively competitive generation market.<sup>7</sup> The role of private capital in the electricity system would be increased and greater use made of incentive regulation over transmission and distribution. To ensure the reliability of the electricity system under competition, an independent system operator would be established with responsibility for the dispatch of generation, to oversee the delivery and coordination of electricity supplies and ensure security of supply.

The marketplace for electricity would be characterized by a central power pool and spot market. In addition, the Advisory Committee recommended that a futures market be established. Bilateral financial contracts would be permitted but bilateral physical contracts (i.e., ones in which the actual supply of electricity to the system is guaranteed) would not be allowed. A newly established electricity exchange would be responsible for overseeing the financial operation of the marketplace. Along with other responsibilities, the exchange would settle the financial transactions between electricity generators and buyers, operate the futures market and oversee the registration of companies for participation in the electricity market.

The Advisory Committee's recommendations are currently under consideration by the Ontario government. While no specific restructuring proposals have been forthcoming from the provincial government, there appears to be strong support within the province for major pro-competitive reforms.

## ***British Columbia***

The British Columbia electricity industry is dominated by B.C. Hydro, a vertically integrated, government-owned and regulated utility. B.C. Hydro owns over 80 per cent of the generating capacity in the province. It also controls most of the transmission and distribution assets in the province including the interconnections with the bordering jurisdictions of Alberta and Washington. The provincial electricity system also includes a number of smaller utilities. The largest of these is a privately-owned, vertically integrated utility, West Kootenay Power. This company supplies about seven per cent of the B.C. electricity market and has a significant amount of transmission facilities as well as some generating capacity. Most of the electricity provided in B.C., about 85 per cent, is generated by hydraulic facilities.

The province of B.C., while still far from having a competitive electricity system, has taken a number of steps in this direction. In 1994, the provincial government directed the industry regulator, the British Columbia Utilities Commission, (the "BCUC") to undertake a public review on restructuring the province's electricity system with particular attention to be paid to the implications of retail wheeling.

The BCUC Review Report, completed in September 1995, strongly supports increased competition in the B.C. electricity system particularly at the wholesale level.<sup>8</sup> To support effective wholesale competition, the BCUC Review recommends that generating facilities in the province be separated from the dispatch, transmission, distribution and customer service functions. In addition, the Commission recommended that further study be conducted on ways, possibly including divestiture, to prevent B.C. Hydro from having market power within a deregulated generation market. The report of the BCUC is under consideration by the government of B.C.

Unrelated to the BCUC review, progress toward a more open electricity sector in B.C. has also been made through the province's entry into U.S. regional transmission groups. B.C. Hydro is a member of both the Western, and Northwest Regional Transmission Associations established under U.S. Federal Energy Regulatory Commission (FERC) guidelines. A prerequisite for membership in these organizations is the maintenance of open access transmission tariffs. These tariffs must be set according to criteria established by the FERC.

B.C. Hydro submitted proposed wholesale transmission tariffs to the BCUC in the Fall of 1995. The BCUC review of the tariffs, completed in June 1996, calls for certain modifications, most importantly, to provide more efficient location-related pricing signals. A revised pricing scheme containing such signals is to be brought to the BCUC for consideration in January 1997.

Prior to the BCUC Electricity Market Structure Review, steps were also taken to provide some amount of competition in the B.C. electricity system through a competitive bidding process for the addition of 300 MW of new generation capacity. There were over 40 responses in the initial bidding phase, which was completed in August 1995. Negotiations are continuing on the terms for bringing the new capacity on stream.

## ***Attempts to Open the Electricity Industry at the National Level***

The possible development of a national approach toward more open and competition trade in electricity between provinces has received considerable attention. Interest in such an approach was generated by the Review of Inter-Utility Trade in Electricity completed by the Canadian National Energy Board in 1992.<sup>9</sup> The study found that "the potential benefits from increased inter-utility cooperation are significant, and warrant continued effort on the part of the electrical utilities, and by the provincial and

federal governments, to achieve them." It further suggested a number of options for enhancing trade in electricity among the provinces.

Inter-provincial trade in electricity was subsequently one of the key areas for discussion in negotiations leading up to the adoption of the Canadian *Internal Trade Agreement* in July, 1995. The *Agreement* was to have included a separate chapter dealing with interprovincial trade in energy, including electricity. Negotiations on the chapter have so far been unsuccessful. However, in meetings taking place since the *Agreement* came into place, the provinces have expressed a continuing interest in an energy chapter encompassing electricity. Discussions between the provinces and the federal government on this matter are continuing.

### **The Competition Bureau's Involvement in Electricity Restructuring**

Over the past three years, the Competition Bureau has been active in promoting pro-competitive structural and regulatory reforms in the Canadian electricity sector. In 1993, the Bureau provided a submission to the National Energy Board's Review of Inter-Utility Electricity Trade in Electricity.<sup>10</sup> In 1994, the Bureau provided expert evidence and final argument, in a hearing of the Ontario Energy Board, on the competition implications of internal restructuring taking place within Ontario Hydro, the dominant utility in the province.<sup>11</sup> In 1995, the Bureau provided written submissions to, and responded to interrogatories from other interested parties in the British Columbia Utilities Commission Electricity Market Structure Review.<sup>12</sup> Most recently, the Bureau provided written submissions to, and appeared before the Advisory Committee on Competition in Ontario's Electricity System.<sup>13</sup>

Through these activities, the Competition Bureau has advocated major market-opening reforms as the most effective means, in the long-run, to ensure the efficient and low-priced supply of electricity in Canada. The Bureau has also stressed the importance of taking competition law into account in restructuring the Canadian electricity sector. Effective competition law disciplines both make more widespread deregulation feasible and enhance the economic benefits from deregulation.

In its various submissions, the Bureau has also supported specific regulatory and market structure elements to promote the competitive and efficient, as well as reliable supply of electricity. These elements relate to such matters as: providing participants in competitive segments of the electricity sector with non-discriminatory access to transmission and distribution; ensuring that the transition to competition is consistent with the reliable and efficient operation of the electricity system; the requirements for effective competition among generators; the use and removal of interim regulation during the transition to effectively competitive markets; the need for, and approach toward regulation of transmission and distribution; competition at the retail level of the electricity industry; dealing with potential stranded cost concerns; and expanding the role of private capital.

### **Summary**

Concerning the establishment of competitive Canadian electricity markets, there has been more discussion to date of the possibilities than actual progress. This situation is changing. Alberta is already well down the road toward an open access electricity system. Other provinces are openly considering major pro-competitive reforms to their electricity systems. Increasingly, questions regarding the opening of the Canadian electricity system are revolving around when it will happen rather than if it will occur.

The Competition Bureau has played an active role in recent initiatives relating to the opening of the Canadian electricity system to competition. This role will continue as deregulation of the Canadian electricity sector proceeds.

## Notes

- 1 See Jean-Thomas Bernard et Michel Roland, "Vers une libéralisation du marché québécois de l'électricité," *Policy Options*, vol. 17, no. 3, April, 1996, pp. 7-11, at p. 9.
- 2 A fourth smaller integrated utility exists in the province as well as a number of distribution utilities. Most other provinces have electricity systems dominated, at least at the transmission and generation levels, by a single government or privately-owned utility.
- 3 See *Enhancing the Alberta Advantage: A Comprehensive Approach to the Electric Industry* (Alberta Department of Energy: October, 1994).
- 4 For an overview of the restructured Alberta electricity system, see *Moving to Competition: A Guide to Alberta's New Electricity Structure* (Alberta Energy: 1995).
- 5 For discussion of the changes initiated during Mr. Strong's tenure, see the Director of Investigation and Research, *Competition Act, The Final Argument of the Director of Investigation and Research, Competition Act, in the matter of the Ontario Energy Board Act, R.S.O. 1990, c. O. 13; and in the matter of a reference to the Ontario Energy Board by the Minister of Environment and Energy in respect of the proposed bulk power rates or charges of Ontario Hydro for 1995 (H.R. 22)* (Hull, Québec: July, 1994).
- 6 See *A Framework for Competition: The Report of the Advisory Committee on Competition in Ontario's Electricity System to the Ontario Minister of Environment and Energy* (Toronto: Publications Ontario, 1996).
- 7 The nature of Ontario Hydro's generating assets, however, creates some unique problems regarding the establishment of effective competition. About 60 per cent of all power supplied in the province is generated by nuclear facilities. Despite this large share, the Advisory Committee concluded that these should remain within a single corporation to deal with certain safety and operational efficiency concerns. Instead of separation to promote competition and efficiency within these facilities, the Committee recommends that they be set up as competing operating units under the same owner.
- 8 See British Columbia Utilities Commission, *The British Columbia Electricity Market Structure Review: Report and Recommendations to the Lieutenant Governor in Council* (Vancouver: September, 1995).
- 9 *Review of Inter-Utility Trade in Electricity* (Calgary, Alberta: National Energy Board, January, 1994). *Id.*, p. 4.
- 10 Director of Investigation and Research, *Competition Act, Submission to the National Energy Board Review of Inter-Utility Cooperation and Transmission Access and Wheeling* (Hull, Québec: February 12, 1996).

- 11 See the Director of Investigation and Research, *Competition Act, The Final Argument of the Director of Investigation and Research, supra*, note 5, and Edward Kahn, *Analysis of Restructuring to Date at Ontario Hydro*, Report of the expert witness called by the Director of Investigation and Research, *Competition Act*, for Ontario Energy Board Hearing H.R. 22 (Hull, Québec: May, 1994 ).
- 12 See the Director of Investigation and Research, *Competition Act, Submission of the Director of Investigation and Research Competition Act to the British Columbia Utilities Commission Electricity Market Structure Review, Responses to the Interrogatories of the BC Energy Coalition by the Director of Investigation and Research, Competition Act*, and *Final Argument of the Director of Investigation and Research, Competition Act* (Hull, Québec: April 26, 1995, June 9, 1995, and June 14, 1995, respectively).
- 13 See Director of Investigation and Research, *Competition Act, Restructuring the Ontario Electricity System to Promote Competition and Efficiency*, Submission to the Advisory Committee on Competition in Ontario's Electricity System, and *Final Written Submission of the Director of Investigation and Research, Competition Act to the Advisory Committee on Competition in Ontario's Electricity System* (Hull, Québec: January 26, 1996, and March 15, 1996, respectively).



## CZECH REPUBLIC

In the Czech Republic, activities in power engineering are governed by Act 222/1994 Coll., which took effect on 1 January 1995. The Act sets conditions not only for companies operating in the industry, but also for their supervision by the government, and for the State Energy Inspection. Applying to the generation of electricity, heat and gas, the Act gives a general definition of conditions that must be met by companies that wish to operate in any of the three areas. The basic prerequisite set there is that of obtaining a state licence, which is granted by the regulating authority identified in the Act, that is to say by the Ministry of Industry and Trade of the Czech Republic. The general part of the Act also states that licence holders are obliged to provide public service, which is defined as an obligation of the licence holder to provide electricity, gas or heat also outside the scope set by the licence. The licence holder is called upon to provide that service in the public interest in the case of an emergency on the basis of a decision by the Ministry of Industry and Trade. Energy prices are regulated, and they are set by the Ministry of Finance of the Czech Republic.

In subsequent sections, the Act specifies the relationship between suppliers of individual types of energy and their customers and defines individual parts of power equipment in question. It also states that the buyer must contribute towards some of the seller's justified expenses incurred in connection with specific energy deliveries.

Conditions for the supply of energy and state licensing procedures are described in greater detail in Decrees 169/1995 Coll. and 129/1995 Coll. to Act 222/1994 Coll.

In the case of electric power, a single producer, namely České energetické závody (CEZ), has a strongly dominant position in all of the Czech Republic. Not only does it produce about 80 per cent of all electricity needed, but it also owns and operates the entire 400 and 220 kV grids. The majority shareholder of CEZ is the state with 67 per cent of shares.

In individual regions, there are a total of eight power distribution companies (one in each region), which are in a monopoly position on regional markets. Forty-six to forty-eight per cent of their shares are owned by the state. These distribution companies buy most of their electricity from the dominant electricity producer.

There are also independent producers and importers of electricity operating on the market. Most of them produce electricity to cover their own needs and their real share in the power supplied to the grid is small.

Act 222/1994 Coll. calls upon suppliers operating high and very high tension distribution systems and state licence holders operating power plants with units exceeding 50 MW output to establish a Central Energy Dispatching control board. The Dispatching is given responsibility in maintaining a balance between power generating plants and power consumption in the Czech Republic. That is to say, the Dispatching should buy electricity from producers, sell it to suppliers and set its prices, and decide conditions for import and export of electricity and for the utilisation of individual units. It should also organise selection procedures for the construction of new plants. In June this year, the CEZ and other electricity producers founded a Central Energy Dispatching which differed from the original proposal of the Ministry of Industry and Trade of the Czech Republic. The Ministry's proposal envisaged an equal

distribution of votes between producers (CEZ and independent producers) on the one hand and power distribution companies on the other. At present, the Ministry of Industry and Trade is trying to change the Statutes of the Dispatching in favour of its original proposal and so to establish a more equitable platform for decisions in fundamental matters relating to power generation and distribution.

Protection of Economic Competition Act 63/1991 Coll., together with its amendments in Acts 459/1992 Coll. and 286/1996 Coll., apply to all industries without any exception, and it is also fully applicable to companies operating in power engineering. In most of the cases heard to date, the Ministry for Economic Competition has dealt with the behaviour of some regional electricity distribution companies towards their customers. In 1993, the Ministry concluded that the behaviour of distribution companies constituted an abuse of their monopoly position in eight cases. The Ministry issued an order against such behaviour, and fined the companies in question.

In 1994, for example, the Ministry for Economic Competition heard two cases of electricity distribution companies charged with an abuse of monopoly position on the market because they had refused to supply power to two companies which were not willing to pay debts of their predecessors. The power companies (having to deal with a large number of cases of late payments or non-payments of electricity bills) interrupted the supply of electricity to companies which did not pay their bills. Power supply was not restored, however, even when the debtor had vacated the premises and their owner let them to another company. Although the present owners are in no legal relationship with the debtor, the power company insisted that they agreed to pay the debt of the previous company and it refused to sign an agreement to supply them with electric power unless they paid the outstanding amount for their predecessors. The Ministry ruled that such a behaviour of distribution companies constituted an abuse of their monopoly position on the market. The Ministry issued an order against such behaviour and fined both distribution companies.

One of the major topical problems related to the electric power in the Czech Republic is the question of imports. The strongly dominant company in power generation and owner of the grid (i.e. the CEZ) prioritises its own imports and hampers efforts of other companies interested in importing electricity.

In an effort to improve the quality of competition in power engineering, the Ministry for Economic Competition has proposed a separation of the grid from the CEZ, which would keep only power generating units. These might be eventually split into several competing companies some time in the future and would be connected to the grid on the basis of financial merits assessed by the Central Dispatching. The separation of the grid would in effect lead ultimately to the development of trade in electricity on an international scale and would restrict the large domestic producer's possibilities for abusing its position. The question of the grid separation has not been resolved yet, and is still under discussion.

# FINLAND

## **Reform of the Finnish electricity market**

The regulatory reform of the Finnish electricity industry was mainly motivated by changes in the energy and competition policies, but also by international developments, particularly in Norway and Sweden. To further integrate the Nordic electricity market, relatively uniform market conditions were considered important.

The scope of the electricity market and ways to deregulate it were surveyed and proposals made by two consecutive working groups between the years of 1990 and 1993. The latter group drafted a bill for an Electricity Market Act.

The purpose of the regulatory reform was to ensure an efficient and competitive electricity system by removing obstacles to competition in the generation, transmission and sale of electricity.

The liberalisation of the Finnish electricity market began in 1995. The Electricity Market Act, a new law opening up the electricity market, came into force 1 June, 1995. The Act applies to the generation, high-voltage transmission, low-voltage distribution and sale of electricity.

## **Main features of the regulatory reform**

The new Electricity Market Act did not impose any organisational restructuring or changes in the ownership structure of the Finnish electricity system.

A crucial point of the reform was to introduce competition to those parts of the electricity sector which are potentially competitive. The Act opened up competition in the generation and supply of electricity, both on the wholesale (sales to distribution companies and large industrial customers) and retail (sales by distribution companies to small and medium-sized companies and households) markets for power, by making electricity transmission networks available to all potential users. All network operators were obliged to open their networks to interested parties in return for an appropriate payment. A new nodal pricing tariff system was introduced to promote competition in the supply of electricity.

The liberalisation of electricity transmission is proceeding stepwise. In the first phase, starting 1 November, 1995, electricity customers with an electricity demand of 500 kW and above were allowed to receive supplies from other than their local supplier. In practice, approximately 2 000 large and medium-sized electricity customers were freed to seek competitive supplies. The transmission service obligation will apply to all electricity customers in 1997.

## **Structure and ownership of the Finnish electricity industry**

The structure of the Finnish electricity industry is a mixed one. One of its special features is the existence of two separately owned high-voltage transmission grids, which are still interlinked. Generation is decentralised but the two biggest generators are vertically integrated to transmission. There are vertical

linkages between generation and distribution although the degree of vertical integration between them is no more than one-third of the total generation.

### ***Generation***

In Finland, there are a number of generating companies which can be divided into three main categories: the state-owned production, electric supply utilities and electricity-intensive industry (mainly paper and pulp, chemical and metallurgical industries).

The biggest generator is state-owned Imatran Voima Oy (hereinafter IVO), which generates about 45 per cent of the total output. As a result of returns to scale in the generation of power, the industries have established jointly-owned power companies. The majority of the industry-owned power generation belongs to the PVO Group. The share of total generation accounted for by the industry amounts to 35 per cent. The rest, approximately 20 per cent of the total generation, is accounted for by electricity supply utilities, the majority of which are owned by the municipalities.

IVO and the PVO Group are the major players in the wholesale market for electricity. IVO has a market share of approximately two-thirds, and it sells electricity to regional and local distribution companies, also to big industrial customers. The bulk of the electricity generated by the PVO Group is used internally, while the rest is sold to outside users, such as electricity distribution companies. Accordingly, the majority of the existing industrial cogeneration and the own production are not part of a competitive market.

There is no price regulation on the wholesale or retail prices of electricity. General competition law can be applied to pricing practices (particularly a prohibited abuse of a dominant position) which restrain competition in the electricity market.

### ***Transmission***

The high-voltage transmission grids are owned by two companies, IVO and the PVO Group, and their networks are interconnected by a 400 kV system. The biggest generator IVO owns approximately 80% of the national grid. Anticipating the forthcoming reform of the electricity market, IVO split off its transmission activities into a subsidiary - IVS - in 1992. The foreign connections are still owned by IVO itself.

The other major generator, the PVO Group, also has a separate grid company, TVS. It was formed in 1990 out of four regional networks primarily owned by the industry. TVS's share of the national grid amounts to 20 per cent.

In September 1995, the grid companies entered into an agreement on transmission tariffs. Since this signified an instance of price collaboration forbidden in the competition legislation, the parties applied for an exemption, which the Office of Free Competition (hereinafter OFC) granted for the nodal spot pricing system, where customers agree on all the network services with the network owner whose network they are connected to. The purpose of nodal pricing is to create a market place of the electricity network. The price of the network services is not dependent on the distance between the market parties.

A framework agreement for the establishing of a new national grid company which would unite the existing two high-voltage transmission networks was signed in December 1995 by IVO, the PVO Group and the Ministry of Trade and Industry. It is the intention of the company to buy these transmission grids and the foreign connections. To expand the ownership structure of the company to be founded, e.g. pension companies have been designed as its owners.

## *Distribution*

Distribution networks are natural monopolies and the network owners require a licence, which defines their area of responsibility. Within this area, the net operator is obliged to connect into the network all interested and eligible users.

A crucial reform was the opening up of the network services. The distribution companies are obliged to serve all buyers of network services on equal and equitable terms. In the first stage of reform, this applies to electricity customers whose need exceeds 500 kW. In the beginning of 1997, the service obligation will be extended to all electricity customers. At the moment, however, the costs of metering present an obstacle for small customers if they wish to obtain their supplies of electricity from other than their local company.

In Finland, the number of distribution companies slightly exceeds one hundred. The companies are involved both in the network operations and sales of electricity. As a consequence of the Electricity Market Act, which requires separation by accounts of network operations and sales, a number of distribution companies have split their activities into separate sales and grid companies.

Traditionally, distribution companies were owned by the municipalities. During the last few years, however, changes in ownership have taken place. Some municipalities have acted on the opportunity to liquidate some of their assets and, accordingly, have sold their distribution utilities either to a generator or another distribution company. The development of the electricity markets to a common Nordic direction was attested by the Swedish state-owned power plant Vattenfall buying two Finnish electric utilities. The number of distribution companies can be expected to decrease in the future, due to the economies of scale in the production and acquisition of electricity.

## *Supply*

No licence is required for the sales of electricity. The supply of electricity can be divided into two parts: the wholesale and retail supply. The biggest industrial customers and distribution companies act as buyers in the wholesale market for electricity. Their electricity acquisitions are based on long-term agreements with the wholesalers of electricity, and their own production and shares in power plants.

The retail market for electricity consists of electricity customers buying from the distribution companies. The regulatory reform divided the retail market into two parts, the competitive and the captive one. At present, in order to be able to obtain supplies from other than the local distribution company, the demand must exceed 500 kW. There are approximately 2 000 electricity customers in Finland now eligible to obtain supplies from non-local suppliers. This restriction applies till the end of 1996, after which all electricity customers are, in principle, open to competition.

To protect the interests of small consumers, retailers are obliged to supply electricity to captive customers. The tariffs to these customers must be equal and equitable.

For the time being, the metering costs seem to limit the size and number of the electricity customers who are able to freely purchase electricity. A working group is currently looking for ways to broaden the competitive market.

## **Institutional framework of regulation**

In the context of the Electricity Market Act, the Electricity Market Authority was founded. It is an expert body accountable to the Ministry of Trade and Industry, whose main task is to monitor the pricing of electricity transmission and to advance the operations of the electricity market. The Electricity Market Authority also grants licences for the electricity network companies and the building licences for power lines of 110 KV and more.

The Electricity Market Authority fulfils its supervisory duties jointly with the Ministry of Trade and Industry and the general competition authority, the OFC. Both the Electricity Market Act and the Act on Competition Restrictions apply to the electricity market. The Act on Competition Restrictions is a general Act, applicable to all arrangements restricting economic competition, notwithstanding the fields specifically excluded from its domain. The Electricity Market Act does not contain provisions limiting the application of the Act on Competition Restrictions.

Since the beginning, the OFC and the Electricity Market Authority have been engaged in close collaboration and aimed at a relevant division of work. This includes the exchange of information on cases under investigation and the hearing of the views of the other official body in the solving of these cases. A "one-stop shop" principle is applied, i.e. a problem is solved by one authority only.

## **Special issues: Vertical integration and setting up the pool**

### *Vertical structure of the industry*

In Finland, the generation and transmission of electricity in high-voltage grids are vertically integrated. The two national grid owners are also the biggest generators of electricity. The generation and grid activities are, however, separated into different companies. There are far-reaching plans to disintegrate the generation and transmission, by setting up an independent grid company, which would include both networks.

The generators are also integrated with respect to the distribution and retailing of electricity. This is not very extensive, however. IVO owns two distribution companies which have a market share of approximately two per cent in the distribution and retail sales of electricity. The Swedish generator Vattenfall owns two distribution companies, which give it a market share of five per cent.

The generation and distribution are also vertically integrated. Approximately 20 per cent of the generating capacity is owned by the distribution companies. This capacity mainly involves the cogeneration of power and district heat. Some distribution companies also own shares in hydro, nuclear and conventional plants.

Distribution and supply to end customers are usually taken care of by the same distribution companies. The companies are now required, as a bookkeeping measure, to separate the transmission and distribution from other business activities, such as production and sales. Some distribution companies have taken this a step further and reorganised their activities into separate companies.

### ***Working group on vertical integration***

The Ministry of Trade and Industry set up a working group to examine ways to decrease or wholly prevent the negative impacts of vertical integration. The OFC is a member of this group. The final report is set to be finished by February 1997.

The background for setting up the working group is concern for an effective competition in the electricity market. Generators have recently acquired electricity distribution companies and such a development is likely to continue in the future. A vertical integration of production and distribution may hamper the effectiveness of the electricity markets both in the wholesale and the retail sale channels. A vertically integrated company may have more limited possibilities to obtain electricity from alternative wholesalers compared with non-integrated distribution companies. In the present situation where all customers of a distribution company are not able to select their electricity suppliers, the generator also receives, when buying a distribution company, a certain share of the retail markets.

The working group will e.g. examine whether distribution company stores should be subject to licence or whether the opportunities of generators to own distribution companies should be limited by the law. Other suggested methods include the separation of the distribution network and electricity sales into separate companies to replace the current obligation of separate accounts, and an obligation by a vertically integrated distribution company to tender its electricity acquisitions.

### ***Anticompetitive effects versus benefits of vertical integration between generation and distribution***

The economics of the field on which competition legislation is based displays a two-fold stand on vertical integration. Integration may be motivated by reasons of efficiency and ones promoting competition, but the combining of two vertical levels may also cause anti-competitive effects. These are primarily dependent on the markets, their special features and the market structure. Particularly when a level of the processing chain, which is the object of vertical integration, comes combined with a centralised market structure, where market power or horizontal collaboration may create problems, anti-competitive effects may be related to vertical integration.

With the new Electricity Market Act, there have been attempts to increase or open up competition in the operations where competition is possible and desired. The market structure of the production and wholesales has been extremely centralised. Prior to opening up the networks, power plants have had a monopoly on retail sales in the deliveries taking place within their distribution areas.

The vertical integration of the electricity wholesalers into retails sales and distribution decreases the number of buyers active in the markets, if the power plants are obliged to buy electricity from within the company. If it the question is one of large-scale vertical integration and a major part of the companies is integrated into the wholesalers, the pressure of competition both among the wholesalers and retailers will decrease. In a market situation where a significant part of wholesale electricity buyers have integrated into the wholesalers, the potential expansion of the electricity market into one covering all Nordic countries does not hold such a positive effect for competition, compared with a situation where the number of wholesale buyers would remain constant. The outcome for electricity users is that a vast integration of power companies decreases competition among retailers, which may affect the transfer to customers of the cost-benefits achieved with the aid of competition in the production of electricity.

### *Setting up the pool*

So far, Finland has lacked an electricity pool, and for a long time, disagreement prevailed in Finland over whether it should join a joint Nordic electricity pool or found a national one. The company supporting the latter alternative managed to draw in enough participants and the parties involved represent the majority of electricity producers, distributors and users. The pool is set to commence its operations in August 1996.

# GERMANY

## Industry structure<sup>1</sup>

The German energy supply companies (ESCs) are in either private, public or semi-private ownership at all levels of supply. Four-fifths of the German electricity output are generated by them<sup>2</sup>. The following comments therefore deal with this sector only.

The public electricity industry is characterised by a three-tier structure, being divided into a national level, i.e. the interconnected network, a regional level and a local level. There is no neutral distribution network that is accessible to all ESCs: the electricity distribution networks are all owned by the ESCs.

Out of the approximative 930 companies, only nine operate at national level, i.e. within the interconnected network<sup>3</sup>. Only one of those interconnected network companies is fully privately owned. In all of the eight other ones the public sector holds differing amounts of shares. The companies within the interconnected network generate, transmit and distribute electricity, i.e. they handle the extension and the use of power stations and high-voltage networks at national level and they link the individual electricity supply networks. Besides supplying end users<sup>4</sup> direct, the ESCs within the interconnected network sell a great part of the electricity generated by them to local and regional distribution companies.

The ESCs within the interconnected network are highly vertically integrated via the stages of generation, transmission and distribution. They hold shares in local and regional ESCs individually or together with other ESCs within the interconnected network. At the same time, there are capital links between the ESCs<sup>5</sup>. A large number of indirect links are created by joint shareholdings, e.g. in power stations. Moreover, there are direct interlocks. Some members of the managing board of an interconnected network company sit on the supervisory boards of other companies<sup>6</sup>.

The about 70 companies at regional level, in which interconnected network companies often hold stakes, on the one hand supply power direct to the approximately 850 local distributing companies and on the other hand to consumers. They perform the role of intermediaries in that they distribute electricity generated by themselves and they also distribute electricity purchased from other sources.

The distributing companies at local level are as a rule municipal undertakings which supply a municipal area and very frequently are owned by the communities concerned. Companies operating at the interconnected network and the regional levels increasingly hold shares in the former. Municipal undertakings mainly distribute electricity purchased from upstream generators, but to an increasing extent also power generated by themselves in block heating stations.

Some ESCs operate only at one of those levels, but more often they are vertically integrated, i.e. they are present at all stages of supply and engaged in generating power or in importing it. The latter is true in particular of the large ESCs within the interconnected network.

## **Energy supply in the new Federal Laender**

As far as the territory of the new Federal Laender is concerned, the former centralised energy production and distribution system was sold and privatised after reunification by Treuhandanstalt, the company responsible for privatising the east German companies. As regards public electricity supply alone, investments amounting to about DM 60,000 million were to be expected<sup>7</sup>.

The basis for privatisation was the so-called Stromvertrag (Electricity Agreement) concluded with the last GDR government in the summer of 1990.

Electricity is generated mainly using domestic lignite as primary energy source, viz. in both VEAG power stations and power stations owned by other companies (e.g. the newly constructed lignite power station at Schkopau), VEAG being obliged to buy that power. Electricity distribution at the interconnected network level for the whole area is handled by VEAG.

At the regional level, district energy kombinats were sold to German and other European ESCs. There are at present 12 regional supply companies, which have committed themselves to buy about 70 per cent of their power requirements from VEAG over the next 20 years in order to ensure lignite-based electricity generation. West German ESCs hold stakes in regional supply companies which range from 49.9 per cent to 61 per cent. The remaining shares are to be sold to communities by Treuhandanstalt's successor organisation. Where communities wished to set up municipal undertakings, the necessary facilities were transferred to them. Also in east Germany, as a rule regional ESCs or their west German shareholders hold stakes in municipal undertakings.

## **Competition law regulations**

### ***Reasons for special treatment under competition law***

In Germany, the provisions of the Energy Industry Act (Energiewirtschaftsgesetz) and the Act against Restraints of Competition (ARC) form the competition law framework governing the field of energy supply via networks.

The main purpose of the Energy Industry Act is to ensure cheap and safe energy supply. The Act subjects public electricity (and gas) supply to governmental supervision. That supervisory control is the responsibility of the economics ministries of the individual Laender.

Supervisory control includes supervision of the prices paid by the category of private households and small users of electricity. Prices paid by users are set on the basis of the "Bundestarifordnung Elektrizität" (Federal Tariff Code for Electricity) and the "Allgemeine Bedingungen für die Elektrizitätsversorgung von Tarifkunden"<sup>8</sup> (general terms for electricity supply to private households and small users). Only the prices for the category of so-called special users, which, e.g., comprise large industrial users and distributors, are fully liberalised. They may conclude individual agreements or standardised special agreements with the ESC concerned. As regards power supply to private households, industrial or commercial enterprises and agricultural enterprises, the statutory principle of equal pricing applies, which prescribes that such users residing in the supply area of an ESC must be supplied at equal terms (tariff rates).

The electricity industry is largely exempted from the application of the ARC, in particular from the ban on cartels (see below)<sup>9</sup>.

The justification for this special position has always been the specific conditions prevailing in the sector of energy supply via networks. The rationale underlying this reasoning is that multiple electricity (and gas) mains should not be laid under conditions of competition, given the necessary large capital expenditure. In the end this would only lead to supply becoming more expensive. Only a single mains to the consumer would be economically acceptable according to this view.

This line of reasoning is supported by the argument that in view of the limited storability of electricity only secured continuous purchases of power enable the ESCs to operate economically in the interest of public supply, which is to ensure that consumers are supplied as reliably and as cheaply as possible.

### *Essential regulations*

#### *Sectors exempted from the ARC*

The German energy supply system is characterised by closed supply areas. Competition between ESCs is almost totally excluded by that system, however, because it allows the conclusion of so-called demarcation agreements (territorial protection agreements) and concession agreements (which grant an ESC the exclusive right of supply in the grantor's area). Economic integration of those areas is quite limited and only takes place in the form of a short-term exchange of power between the interconnected supply companies<sup>10</sup>. The duration of the above agreements is statutorily limited to 20 years, but they may be renewed (see below). Energy supply contracts are usually concluded for the same period of time.

This type of market organisation as a rule violates the provisions of the ARC, in particular the ban on cartels. However, as far as energy supply is concerned<sup>11</sup> Section 103 of the ARC exempts certain agreements between public energy supply companies from the ban on cartels (Section 1 of the ARC), the ban on resale price maintenance (Section 15 of the ARC) and the ban on vertical exclusivity agreements (Section 18 of the ARC).

The main exempted types of agreement are the following<sup>12</sup>:

- Demarcation agreements in which ESCs agree among themselves or vis-a-vis territorial authorities to refrain from supplying energy to certain areas; such territorial agreements may aim to allocate supply areas either among neighbouring supply companies (horizontal demarcation) or among suppliers and distributors (vertical demarcation). The exemption may also apply to agreements in which a community agrees to refrain from supplying energy for its own needs if and as long as it has asked another ESC to supply its area.
- Concession agreements in which territorial authorities agree to grant a particular ESC the exclusive right of installation and operation of mains upon or underneath public roads in their territory; those agreements are based on the communities' monopoly over rights of way. In return for being granted the exclusive rights of way, the ESC concerned pays a share of its gross receipts to the community in the form of a royalty fee. The exclusivity clause applies only to the supply to end users.

#### *Limitations on the exemption*

However, to be effective, the agreements have to be notified to the competent cartel authority<sup>13</sup>. They must not exclude the supply of another form of energy. The term of demarcation, concession and interconnected supply agreements is limited to 20 years<sup>14</sup>. Extensions beyond that period have to be

notified to the competent cartel authority. In the case of demarcation and interconnected supply agreements, but not in the case of concession agreements, the cartel authority may enter into an examination of an agreement, if there is sufficient reason to assume that as a result of the agreement other enterprises will be unfairly hindered in the sale or purchase of energy or that the agreement will lead to perceptibly less favourable supply conditions than are offered by similar ESCs<sup>15</sup>.

This examination may result in the agreement being declared to be of no effect either wholly or in part if supply at perceptibly more favourable conditions is prevented as a result of the agreement. However, the agreement may still be effective, if there is a factually justified reason for the less favourable conditions, ineffectiveness of the agreement perceptibly deteriorates market conditions or if the reliability of supply is endangered. In practice the prevention of perceptibly more favourable conditions could only be proved by drawing comparisons with other supply areas, which is costly and resource-intensive.

The purpose of putting a time-limit of 20 years on concession and demarcation agreements was to prevent monopoly positions from entrenching themselves for even longer periods. There was meant to be an opportunity for new competition for supply areas at certain intervals. Such competition cannot take place, though, if after the expiration of a concession agreement demarcation agreements between upstream suppliers remain in place. Therefore, the ARC<sup>16</sup> declares demarcation agreements to be of no effect if at the end of the term of a concession agreement they are an obstacle to users actually switching to a different supplier. Apart from being able to threaten to enter into an agreement with their territorial supplier's rival, communities have an opportunity every 20 years<sup>17</sup> to choose to generate energy for their own needs.

#### *Specific abuse control*

Even before the end of the 20-year period (see above) the cartel authorities may object to abusive demarcation and concession agreements<sup>18</sup>. Where an abuse has become possible as a result of the exemption of the above-mentioned agreements, the cartel authority may order the parties concerned to discontinue the abuse or to modify agreements and decisions. The cartel authority may also declare agreements and decisions to be of no effect<sup>19</sup>.

Abuse is defined having regard to the purpose and intent of the exemption, i.e. reliable and cheap supply of energy. An abuse is considered to be present in particular if an ESC

- charges or demands less favourable prices or business terms than similar ESCs, unless the former proves that the difference is due to different circumstances not attributable to it; pricing in the German energy supply sector is not based on market conduct, but on the Federal Tariff Code for Electricity and the General Terms for Electricity and the General Terms for Electricity Supply to Private Households and Small Users. The prices paid by special users, e.g. large industrial users and industrial or commercial enterprises and distributors, are the only ones to be entirely liberalised and therefore subject to abuse control by the cartel authorities under the ARC. The structure of prices paid by private households and small users is subject to price control by the Land economics ministries;
- unfairly hinders another ESC or any other enterprise in the use of energy generated at its own facilities; an abuse would be present, e.g., if an ESC refused to purchase on fair terms surplus energy generated by another enterprise or if an ESC charged excessive prices for additional electricity supplied to enterprises generating electricity for their own needs<sup>20</sup>;
- unfairly hinders another ESC by refusing transmission (feeding energy into, and the connected drawing of energy from, its supply networks); in a pilot proceeding of the

Bundeskartellamt<sup>21</sup> the Federal Supreme Court (BGH) recently issued a decision on the issue of transmission. The Federal Supreme Court found that in principle transmission that generates competition could be enforced on the basis of the ARC. In certain circumstances an ESC could thus be obliged via abuse control to give a rival access to its networks. Evidentiary requirements are very high, though. For example, transmission may be refused if the network owner matches the price charged by the company seeking access.

Since the fifth revision of the ARC (1990) the Bundeskartellamt has had the power to directly apply European competition rules<sup>22</sup>. The consequences for the sector supplying electricity via networks have been serious, for, unlike German competition law, European law does not exempt energy supply via networks. As a result, this sector is fully subject to European competition rules. For example, both concession and demarcation agreements are caught in principle by the European ban on cartels. By means of two pilot proceedings the Bundeskartellamt has tried to settle the question whether German territorial protection agreements and exclusive rights to supply a certain area are compatible with European law. The Bundeskartellamt therefore prohibited the demarcation agreement between Ruhrgas and Thyssengas<sup>23</sup> as well as the concession agreement between RWE and the town of Nordhorn<sup>24</sup>. Those proceedings, which are still pending, are intended to clarify the scope of European law.

### *Merger control*

Notwithstanding the above-mentioned exemptions, the ARC provisions on merger control<sup>25</sup> are fully applicable.

Their application may be of interest, for example, in the context of ensuring competition for supply areas. For there have been many instances where upstream suppliers of municipal distributors, i.e. national and regional suppliers, have tried to cement their own positions as suppliers by acquiring shares in those municipal distributors<sup>26</sup>.

In proceedings carried on at the end of 1994, for example, the Bundeskartellamt<sup>27</sup> issued a prohibition on the ground that the current two energy suppliers, by acquiring a share in the municipal distributor of Garbsen, would protect their positions against potential competition on a permanent basis, as well as strengthening their dominant positions in the supply of energy. In the Bundeskartellamt's view, competitive alternatives, e.g. in the form of concessions being granted to third parties or users switching to other suppliers, were excluded on a permanent basis as a result of shareholdings being acquired for an indefinite period of time<sup>28</sup>.

### **Deregulation intentions**

The statutory framework for the energy sector has long been at the centre of political discussions. The above proceedings have shown that it is extremely difficult to introduce more competition into the field of energy supply via networks with the instruments available under the current cartel law. Therefore calls for attaining this goal by legislative changes of the regulatory framework carry all the more weight. The current intentions to amend the law therefore focus on the still very monopolistic structure of the energy sector and the almost watertight, nation-wide network of demarcation agreements.

The national reform projects have not yet been finalised. Besides an amendment of the Energy Industry Act<sup>29</sup>, a revision of the ARC is envisaged. The key element of the reform of the regulatory framework for electricity is the planned abolition of the whole exempted sector of "energy supply via networks"<sup>30</sup>.

The main objective of the envisaged amendment in Germany is the abolition of the closed supply areas. For this purpose the Federal Ministry of Economics, the Bundeskartellamt and the Monopolies Commission are demanding the removal of the cartel law exemption for demarcation and concession agreements. It would then no longer be possible to legally safeguard closed supply areas.

At the same time the revision would liberalise the laying of mains and thus create opportunities for competition. It will not always be possible for competitors to lay their own mains, in particular where this would not be economical, where company-owned mains could not be laid quickly enough or where the necessary approval (under public law) cannot be obtained. A relaxation of the transmission requirement could help to remove such actual obstacles. It is, therefore, being discussed whether additional statutory provisions for the opening of the existing transmission networks are required or whether the current ARC provisions are sufficient.

The argument over the future shaping of the regulatory framework governing the German energy industry is also influenced by developments at European level with regard to the adoption of a European electricity directive.

The debate on the revision of the German laws has not yet been concluded.

## Notes

- 1 The following comments refer exclusively to the electricity industry. To a great extent the statements also apply to the gas industry, though.
- 2 See X. Hauptgutachten der Monopolkommission 1992/93, Bundestagsdrucksache 12/8323, paras 708 ff.
- 3 PreussenElektra AG (Veba), RWE Energie AG, Bayernwerk AG, Vereinigte Energiewerke AG (VEAG), Vereinigte Elektrizitätswerke Westfalen AG (VEW), Badenwerk AG, Energieversorgung Schwaben (EVS), Hamburgische Elektrizitätswerke AG, Berliner Gas- und Licht AG (BEWAG).
- 4 Bayernwerk AG is not engaged in direct electricity supply, PreussenElektra to a limited extent only.
- 5 E.g. 26.25 per cent each of VEAG is owned by PreussenElektra and RWE Energie AG, 22.5 per cent by Bayernwerk AG and 6.25 per cent each by EVS, VEW, Bewag and HEW. PreussenElektra and Bayernwerk AG hold 10 per cent each of Bewag shares direct.
- 6 Such interlocks exist between Bewag and PreussenElektra, PreussenElektra and Bayernwerk, VEAG and Bayernwerk, VEAG and RWE Energie, VEAG and PreussenElektra, VEAG and VEW.
- 7 See X. Hauptgutachten der Monopolkommission, p. 326, para 714.
- 8 Governmental price approval is to ensure that consumers are supplied as reliably and cheaply as possible. Abuse supervision by the Bundeskartellamt in the sense of specific control of price levels is not applicable as far as prices subject to governmental approval are concerned, i.e. the category of private households and small electricity users.
- 9 Section 103 of the ARC.
- 10 See X. Hauptgutachten der Monopolkommission, p. 329, para 730.
- 11 The exempted "energy supply sector" includes the supply of electricity, gas and water. "Public supply companies" are companies that supply others with electricity or run such companies (i.e. supply of energy for a company's own needs is excluded).
- 12 The following exempted types of agreement are less relevant in practice than demarcation and concession agreements:
  - Agreements on resale price maintenance by which an ESC agrees to supply its customers at prices and conditions not less favourable than those which the supplying ESC grants its comparable customers. This provision serves to prevent the use of intermediaries resulting in higher prices being charged.
  - Interconnected supply agreements concluded for the common purpose of providing certain supply services via fixed networks exclusively to one or several ESCs. They serve to install and maintain the interconnected energy network.
- 13 The Land competition authority, if the agreement to be notified concerns one Federal Land only, and the Bundeskartellamt, if the agreement covers more than one Federal Land.
- 14 Section 103a of the ARC.

- 15 Section 103a of the ARC.
- 16 Section 103a (1) of the ARC.
- 17 Also see X. Hauptgutachten der Monopolkommission, p. 327, para 719.
- 18 ... and interconnected supply agreements.
- 19 Section 103 (5) of the ARC.
- 20 See Stromeinspeisungsgesetz (Act on Feeding Electricity from Renewable Energy Sources into the Public Network) of 7 December 1990.
- 21 The paper-mill Weissenborn had entered into an energy supply agreement with WIEH (Wintershall Energie Handelsges.) and terminated the agreement with its former supplier Erdgas Südsachsen (ESG). To be able to supply the paper-mill WIEH sought transmission rights from ESG and VNG (Verbundnetz Gas), the latter's upstream supplier, which were refused by both companies, though. ESG agreed to match WIEH's terms and supplied the paper-mill on those terms.
- 22 Section 47 of the ARC.
- 23 In July 1993 the two major gas pipeline companies had notified to the Bundeskartellamt a new far-reaching demarcation agreement designed to renew the territorial agreements entered into previously. In the Bundeskartellamt's view, the agreement was compatible neither with European law nor with German law. The Bundeskartellamt therefore issued a prohibition. Proceedings are pending with the Berlin Court of Appeals.
- 24 The Bundeskartellamt invoked European law (Article 85 (1) of the EC Treaty) for its prohibition of the concession agreement, which was designed to ensure exclusive energy supply until 2013 of the municipal area by RWE Energie. The town of Nordhorn is located on the Dutch border. In the Bundeskartellamt's view, trade between EU member states is restricted in that, in the absence of the contractual restriction, individual buyers of electricity could buy their energy requirements from Dutch ESCs.
- 25 Section 23 ff of the ARC.
- 26 See Tätigkeitsbericht des Bundeskartellamtes 1993/94, p. 146.
- 27 "Stadtwerke Garbsen". The prohibition concerned acquisitions of shares of 26 per cent and 20 per cent respectively in the municipal distributor of Garbsen by Hastra (previously a supplier of electricity) and Stadtwerke Hannover (previously a supplier of gas). A 54 per cent stake was to be acquired by the city of Garbsen.
- 28 In the "Stadtwerke Dortmund" case, which attracted a lot of attention and criticism, the Bundeskartellamt agreed to a time-limit being placed on the upstream supplier's (VEW) shareholding in the municipal distributor (Dortmunder Stadtwerke AG, DSW) which coincides with the 20-year term of the concession and energy supply agreements. In response to the Bundeskartellamt's objections, the company-law arrangement was changed to the effect that VEW no longer has a say in decisions, relevant in terms of competition law, on the extension of DSW's supply activities and type of energy acquisition.
- 29 It is, e.g., being considered whether the specific energy industry investment supervision should be abolished (see XI. Hauptgutachten der Monopolkommission, p. 36, para 70).
- 30 Apart from the deletion of the currently legalised types of agreement, this would also mean that special abuse control would be abolished. Energy supply via networks would then only be

subject to general abuse control of market-dominating and comparatively powerful enterprises under the ARC (Sections 22, 26 of the ARC).



# HUNGARY

## Introduction

Hungary's electricity sector has undergone a very significant reform in the course of the past five years. The most important steps of the reform are as follows: (1) The unique Hungarian Electricity Works (in short: MVM Trust) that prior to 1989 had been completely vertically integrated, was dissolved. Public limited companies were established as independent market players according to the fields of activity (generation, delivery and supply of current, installation of network, research-development). (2) By the end of 1995 the legal rules fitting into the framework of a planned economy system were, essentially, transformed according to the criteria of a market economy. (3) In the second half of 1995 substantial privatisation started and, as of autumn 1996, was still in progress.

It can be considered as an enormous achievement that the huge changes mentioned above took place parallel with a nearly completely undisturbed energy supply. Since reforms have not been completely finished yet, and in those fields where they were finished too little time has passed to enable the writer of the present paper to report on experiences, therefore a description outlining the changes dominates this report and only a few initial experiences can be mentioned.

## The most important features of the regulation

### *Is the industry vertically integrated?*

According to its definition, vertical integration means the ownership or the control of different stages of the production (supply) process by a sole firm. In the electricity sector the phases of the production-supply process are the following: generation (power stations), delivery (wholesale) and supply (retail) of current. According to these criteria, the reply to the question is that in Hungary the electric industry is no longer vertically integrated. Partial integration nevertheless still exist. In the Hungarian electric industry there is an entity called - in this report - main public limited company: the Hungarian Electricity Works plc (hereinafter in short MVM plc). 100 per cent of the MVM plc shares are possessed by the Hungarian state. (The objective is to sell 49 per cent of the shares still in 1996.) MVM plc is the nearly 100 per cent owner of the shares of the Paks Nuclear Energy Station plc (the biggest Hungarian electric energy generator) and of the National Electricity Transmission Line plc (wholesale network). In addition, MVM plc possesses also minority stakes of the power stations specified below but the sale of these shares is in progress and is expected to be performed in 1996. Up to now, this task was partly accomplished. A few coal-fired power stations, namely Tisza, Bakony, Vértes, Mátra and Pécs Power Station plcs operate vertically integrated together with the nearby coal-mines ensuring their fuel.

In the course of 1995 the power-supplying plcs (there are six of them in Hungary) were privatised to foreign (German and French) companies and they are not vertically integrated either with wholesale, or with the generators.

***Is there a single national monopoly or are there regional monopolies?***

After the 1995 extensive privatisation in Hungary the only national monopoly in the electricity sector ceased to exist as a whole. Of course, regional monopolies exist (such are e.g. all the power supplying public limited companies). Act No. XLVIII of 1994 on Generating, Transporting and Supplying Electric Energy (hereinafter: Act on Electric Energy) defines the natural monopolistic situation which is defined as activity aiming at transporting and supplying electric energy. Transporting and supplying activity can be performed only with state authorisation of operation. At the same time this authorisation grants exclusive right to transport and to supply electric energy for public purposes in a determined area. Equally with authorisation the Act makes it possible to supply energy directly to certain consumers. It is important to note that the exclusive right is also connected with obligation according to the provision of the Act quoted: In the given area the transporter is required to transport and the supplier is required to supply.

***If there are regional monopolies then how is exchange among them regulated?***

In Hungary only one transporting company operates (it can be called wholesaler as well). The six regional suppliers can be called regional monopolies. This Act provides that electricity stations for public purposes (power stations, the transporter and suppliers are to be understood by this term) shall be operated in a co-operative system of electric energy. The conditions of the co-operation among them, as well as exchange, shall be stipulated in a contract.

***Is distribution separated from generation and transmission and is it a national or local monopoly?***

The reply to the first half of the question is 'yes'. Independent market players are acting in generation, delivery and supply. Due to privatisation their owners are very different. In Hungary there is only one transmitting company (wholesaler), thus it is a national monopoly. The country is divided into five regions where suppliers operate and the capital is a separate region. Accordingly, in Hungary there are six regional distributing monopolies.

***Are there independent generators and do they face entrepreneurial risk (do they sell wholesale electricity in a free market or do they sell to a dominant firm at regulated prices?)***

In Hungary there are independent generators but they are still not significant. On the one hand, industrial enterprises operate so-called own power stations, on the other hand there are municipal heating works under local governmental ownership. They may sell their surplus power to transporters and supplier working for public purposes. At present, the privatisation of big power stations is in progress. Two of them were already sold but they did not become completely independent because MVM plc (which is the wholesaler) retained a certain ownership stake. Efforts are being made so that completely independent power stations may also exist in Hungary. Particular features of the branch imply that market entrants speculate for the long run. That is why in the course of privatisation buyers strive, simultaneously with concluding the sale contract, to have also a long-term contract binding their capacity for a duration of 10-15 years with the supplier. The first long-term contract like this has already been concluded. Generators have to endeavour to produce cheap power because the Act on Electric Energy obliges the transporter to procure electric power at the lowest possible price.

In Hungary the maximum price of electric energy is officially fixed in each phase. Contracts are usually concluded at the fixed price. Contracts at a lower price can be concluded only by private power stations working as heater works that want to sell their excess power.

In Hungary, it is still usual for generators to sell the power to the transporter or to suppliers.

***Ownership and management (commercial, corporate, private)***

Each undertaking operating in the Hungarian electricity sector is a public limited company. Power stations that have not yet been privatised belong to the state. Privatised power stations are owned partly by the state, partly by local governments and by their employees. Later, the state wants to keep a so-called golden share for a few basic power stations to ensure certain extra rights.

In the field of delivery, one public limited company with 100 per cent state ownership operates in Hungary. The Government decided that the majority stake of the state should also remain in the long run in this field. Minority shares are going to be sold at a later time.

In the field of supply, ownership relations are diversified to the greatest extent. All the six suppliers were privatised. 40-49 per cent of the shares of each undertaking were bought by foreign (German and French) firms in such a way that they acquired the right of control at the same time (as though they would have majority ownership). Another part of the shares is owned by local governments. Of the third part of the shares, some were offered for public purchase and some of them still remain in state ownership.

***Regulator: independent, ministry, or self-regulated industry?***

Since August 1994, an independent regulating authority named Hungarian Energy Office has been operating in Hungary. The Office has strong powers. It makes independent decisions in respect of electricity market entry, control of the activity on the market and market exit. Its decisions can be challenged in the court. Consumer protection also belongs to its responsibilities. It has preparatory power concerning energy prices and terms and conditions of applying prices. The Office has to submit proposals to the Minister of Industry and Trade in such a manner that the principle of the lowest cost should always be followed in the course of setting prices. The Office closely co-operates with the Ministry of Industry and Trade as well as with the Ministry of Finance.

***Important incentives for private entrants***

To date, significant experiences have not been gathered in this field. However, it can be stated that the most important factors have already been manifested. It can also be observed that market players wanting to enter the electricity market are basically interested in having all necessary legal rules as well as legal security.

It is very important that legal rules should be clear and unambiguous for each market operator. In the electricity sector this is one of the basic preconditions of market entry. In Hungary this task has already been accomplished. Improvements can be performed obviously only in the possession of experiences gained in the course of operation.

The other basic precondition is the price level of primary and secondary fuels and price setting determining the movement of the price level. On the basis of a governmental decision, price setting and forming price levels were performed during 1995, 1996 and even 1997. The major part of this work fell on the Hungarian Energy Office. Price setting was worked out. On this basis in May-June 1996 thirteen committees analysing prices and costs examined the whole electricity sector. On the basis of the examinations the Hungarian Energy Office prepared a proposal to the Government for the price levels to be applied from 1st January 1997 and for tariffs. Relying on the experiences of the examinations, the decree on price setting has been modified in respect of the methods for how different cost elements would

be calculated in the price. According to the set objective, undertakings in the electricity sector have to realise a profit equal to 8% of capital, from the applied prices. The formula determined by the decree makes a nearly automatic price adjustment possible until 31st December 2000.

***Applicability of the competition law (with respect to mergers, conduct, access to "essential facilities")***

The Hungarian competition law is applicable in the electricity sector. A particular feature of the sector is that undertakings in natural monopolistic position also form part of the system. The Office of Economic Competition (OEC) makes efforts so that regulation should transmit pressure towards efficiency on these undertakings, a pressure which can be enforced by the market in other cases.

According to the OEC an opening in the electricity sector towards a market can also be carried out in such a manner that as many independent undertakings as possible have ownership. That is why in the course of privatisation the OEC succeeded in realising the idea that one undertaking shall not be in a position to acquire controlling ownership in more than two public limited companies either in the field of supply, or in the field of production (in the latter field privatisation is still in progress, thus no report can be made yet on the final result).

In respect of mergers the Hungarian Competition Act is applicable and must be applied in the electricity sector. The Office of Economic Competition carried out four proceedings authorising mergers e.g. acquiring controlling influence over power stations and a mine. In addition, in the course of privatisation the OEC was applied to and requested to state in each case that the planned purchase was not contrary to the Competition Act.

Concerning the conduct of the undertakings engaged in the electricity sector, only suppliers were involved in proceedings up to now. In each case the applicants complained of abuse of dominance. The OEC estimated that its proceedings contributed to transforming the way of thinking of the managers of the suppliers and thus the conduct of these executives was also changed.

Access to facilities is regulated by the Act on Electric Energy. This Act allows but does not compel the owner of the given facility to permit other undertakings to have access to its facilities. The OEC still has no experience in this field.

**Vertical disintegration of generation, transmission, distribution and supply**

As already mentioned earlier, a vertically dis-integrated system was realised in Hungary. Thus there are independent undertakings in power generation, in energy transportation and also in energy supply. However, the Act on Electric Energy provides for co-operation between undertakings based on concluding contracts. This is probably a more difficult way compared with control within one organisation but the OEC deems that vertical dis-integration with contractual relations tends towards creating market formation rather than the integrated system.

***Should transmission remain public?***

Hungary decided that in the field of transmission (wholesale) a sole limited company would operate and state majority share-holding would remain in the long run.

***Setting up the pool (wholesale spot market of electric power) and its derivative markets***

This issue has not been put on the agenda in Hungary yet.

### **Transmission pricing vs. nodal pricing**

The decree on pricing contains the possibility to develop it in the direction of the questions raised. Since the decree was first put into practice in July-October 1996, obviously more experience needs to be gained in order to take further steps.

### **Issues in cross-subsidisation (universal service obligation, geographic uniformity of tariffs, non-uniform tariffs, e.g. time of day, interruptibility, steadiness of demand, etc.)**

In Hungary the Act on Electric Energy provides for an obligation to supply in the case of fulfilling the requirements established in legal rules. The Act also ensures exclusive right to supply on a determined geographical area.

The transporter sells electric power in the framework of a nationally uniform wholesale tariff system. Similarly, the suppliers realise power in the framework of nationally uniform consumer tariff system. As for the power stations, the rates of sale are set individually.

Tariff systems are complex. The writer of the present paper does not address the details because the Hungarian Energy Office is presently working on the modernisation of these systems. To illustrate this situation: there is a differentiation between productive and non-productive consumers. There are further distinctions within this. There is a night tariff and a day tariff, within the latter there is a separate rate for peak hours and outside them. According to the plans, the new tariffs will be introduced from the 1st January 1997. This date slipped to 1st January 1998.

Tariffs are maximum fees set by the authority. A deviation from them downwards might be possible but there is no example of this. Undertakings in the electricity sector state that (in July 1996) the present fees do not cover even their expenditures. Thus they cannot behave at all in a market-conforming way.

### **Stranded costs**

This question can probably be answered after 1996. The Hungarian Act on Electric Energy devotes a separate chapter to price setting and cost accounts. This chapter defines the zone very broadly on the basis of which costs may (respectively, must) be taken into account when setting prices. As indicated above the detailed cost review of the Hungarian electric system was accomplished in May-June 1996 under the direction of the Hungarian Energy Office. At present (in July 1996) the OEC has no information about what kinds of costs will become pricing factors. An interview with the head of the Hungarian Energy Office disclosed merely that a price suggestion with more variations would be submitted to the Government. Thus a reply to the question can be given only after the decision of the Government. Since July 1996 pricing factors have been determined.

### **How best to regulate a competitive electricity system (ministry or independent regulator)?**

When this issue was put on the agenda, the Office of Economic Competition argued for entrusting the regulation of electricity system to an independent regulatory authority. In the spring of 1994 the Hungarian Parliament decided accordingly and in August 1994 the regulating authority, Hungarian Energy Office, started to work. Out of the many tasks of the Office two responsibilities are to be outlined.

- It prepares the energy prices (in this framework it has very large supervisory powers).

- Since the Office is also charged with performing consumer protection tasks it is required to co-operate with the organisations representing consumer interests, among others with respect to setting prices. The OEC deems that if consumer interest representations become stronger in Hungary, they will be able to do a lot with their existing powers in order to realise the possibilities of the regulation in a more effective way.

On the basis of the experiences of the time elapsed, the OEC estimates that the Parliament adopted an appropriate decision. One has to admit that, in this period in which in Hungary the economy and law have to undergo a fundamental transformation, when we have to seek a new path, lacking practically any experience of shaping the institutional system of a market economy, and this has not been completely finished, the work done by the Hungarian Energy Office up to now deserves praise. At the same time it is already clear that the public profile of the Office should be increased and their members also need more publicity.

# ITALIE

## Introduction

En Italie, la plus grande partie des sources d'énergie est importée: en 1994 environ 80 pour cent de la demande domestique d'énergie était satisfaite par des sources étrangères (dont plus que 40 pour cent par le pétrole), alors que la moyenne Européenne est d'environ 45 pour cent. Les importations d'électricité, surtout en provenance de la Suisse et de la France où l'énergie fournie par les centrales nucléaires excède les besoins domestiques, couvraient environ 15 pour cent de la consommation totale qui était en 1994 d'environ 253 611 GWh, 2.8 pour cent de plus qu'en 1993, grâce à leur prix très avantageux par rapport à celui de la production interne<sup>1</sup>.

La première partie des appréciations qui suivent est consacrée à la définition du cadre réglementaire de la fourniture d'électricité qui, sans changements remarquables depuis la loi de nationalisation de 1962, influence la structure des marchés et les comportements des opérateurs aux différents stades de la fourniture d'électricité (génération, transmission, distribution et vente). La deuxième partie donne quelques informations sur les perspectives de changement et sur les interventions de l'Autorità Garante della Concorrenza e del Mercato.

## Le cadre réglementaire de la fourniture d'électricité

### *La nationalisation et le Plan Énergétique National*

A la veille de la nationalisation de 1962, le marché de l'énergie électrique était caractérisé par la présence de quatre catégories d'opérateurs: les groupes industriels et financiers à caractère national ou régional (tels que Edison, SIP, Adriatica, Centrale, SME, Società Elettrica Sicilia et Società Elettrica Sardegna), les entreprises industrielles qui produisaient pour leurs propres besoins ("auto-producteurs"), les "petites" entreprises (avec une production inférieure à 15 millions de Kwh par année) et les entreprises électriques des collectivités locales ("entreprises municipalisées").

Les auto-producteurs produisaient 22 pour cent du totale de l'électricité nationale. Ce quota a progressivement diminué, jusqu'à 12.2 pour cent de la production totale en 1990. Par contre, dans les dernières années cette tendance a changé, en partie grâce à des incitations économiques introduites par le Gouvernement, et en 1995 le quota des auto-producteurs a atteint le 16.6 pour cent.

Les entreprises municipalisées, créées au début du XX<sup>ème</sup> siècle à la suite d'une évolution du cadre législatif qui a permis aux Communes la prise en charge directe de services d'intérêt public (tel que la distribution d'énergie), sont des organisations des municipalités avec autonomie administrative et comptable, mais dépourvues de personnalité juridique. Cette forme de gestion a rapidement connu une profonde crise due principalement à l'inefficacité du contrôle public et à l'imposition d'objectifs non économiques aux entreprises. A l'époque de la loi de nationalisation, 46 entreprises appartenant aux collectivités locales représentaient six pour cent de la production totale, tandis qu'en 1995 ce quota de production s'était réduit à 3.8 pour cent.

Dans ce contexte, la "loi de nationalisation" du 1962 a attribué à Enel (organisme de droit public) le monopole légal de la gestion des activités de production, importation, exportation, transport, distribution et vente d'électricité. Les entreprises qui, à l'époque de la nationalisation, exerçaient ces activités, ont été transférées à Enel. Au fil des années, cette disposition a permis à Enel d'intégrer à peu près 1 200 entreprises électriques, le transfert faisant exception des activités des auto-producteurs (utilisant en propre au moins 70 pour cent de l'énergie produite)<sup>2</sup>, des "petites" entreprises et des entreprises municipalisées actives au moment de la nationalisation qui ont continué à exercer leurs activités de production et de distribution à condition qu'elles aient obtenu une concession préalable de la part d'Enel.

Le régime suivant l'approbation de la loi de nationalisation était, donc, caractérisé par l'existence d'un monopole légal à caractère public, verticalement intégré et soumis au contrôle gouvernemental par le biais des directives d'un conseil ministériel (Comitato Interministeriale Programmazione Economica - CIPE) et moyennant la surveillance du Ministère de l'Industrie<sup>3</sup>. Le régime tarifaire se caractérisait par la fixation par un conseil ministériel (Comitato Interministeriale Prezzi - CIP) des conditions et des prix de vente et de transport pour les distributeurs, par l'introduction de tarifs uniformes au niveau national par catégorie d'utilisateurs et par l'existence d'un système de péréquation entre entreprises de distribution<sup>4</sup>.

Une libéralisation partielle du marché de la production a été réalisée par des mesures prévues du Plan Énergétique National (PEN), approuvé en 1988, qui ont toutefois gardé le monopole légal de Enel sur les activités de transmission, de distribution et de vente d'électricité<sup>5</sup>. En 1991, une loi a introduit un régime simplifié en faveur des entreprises industrielles qui produisent à partir de sources conventionnelles (même par de nouvelles installations) de l'électricité destinée à leur propre consommation, à la consommation d'entreprises faisant partie du même groupe et à la vente à Enel<sup>6</sup>. La même loi a établi l'obligation pour Enel d'acheter toute électricité excédentaire produite par les auto-producteurs, aux prix déterminés par le CIP.

La loi de 1991 a aussi totalement libéralisé la production d'énergie électrique à partir de sources dites "renouvelables ou assimilées". Ces sources alternatives incluent des sources renouvelables telles que le soleil, le vent, la force hydraulique, les sources géothermiques, les marées et la transformation des déchets, et d'autres formes de génération, comme par exemple la cogénération (notamment la production combinée de l'énergie électrique ou mécanique et de la chaleur), et toute énergie récupérable dans des processus de production. La production d'énergie à partir de ces sources alternatives n'est donc plus réservée par la loi à Enel.

Afin d'encourager la production à partir des sources "renouvelables ou assimilées", la loi de 1991 a prévu l'attribution de subventions publiques visant à rendre profitable la construction par des producteurs indépendants de nouvelles centrales utilisant ces formes de génération. Les tarifs de vente à Enel de l'énergie électrique produite par les opérateurs indépendants, établis par le CIP selon le critère du coût évité par Enel, comprennent une prime pour les nouvelles centrales utilisant les sources alternatives qui varie selon le type de centrale concernée<sup>7</sup>. En conséquence, la contribution des auto-producteurs à la production d'électricité, surtout celle des nouveaux opérateurs produisant électricité par de processus de cogénération, a augmenté considérablement étant donné les prix de cession à l'Enel particulièrement avantageux<sup>8</sup>.

Dans ce contexte, le chauffage thermique centralisé pour communautés ("teleriscaldamento") a aussi reçu des incitations financières importantes à partir de 1991 quand le Gouvernement a établi des contributions publiques jusqu'à 50 pour cent des investissements pour l'aménagement des infrastructures nécessaires pour ce système.

En tenant compte de différentes formes d'incitation économique accordées à la production d'électricité à partir de sources alternatives, les différentiels entre les tarifs d'achat de l'électricité par l'Enel (fixés par voie administrative) et les coûts effectifs de production à partir de sources renouvelables ou assimilées créent d'importants écarts de rentabilité entre les formes alternatives de génération. Il faut aussi remarquer que parmi les sources "renouvelables ou assimilées" la loi a inclus la cogénération (souvent associée au "teleriscaldamento"<sup>9</sup>, qui bénéficie d'ultérieures subventions) qui pourrait présenter une rentabilité économique pour les opérateurs, même dans l'absence d'essors publiques. En général, les incitations économiques n'ont suivi que faiblement des critères basés sur les coûts propres à chaque forme de génération et ont donc introduit de distorsions importantes dans l'utilisation des différentes sources alternatives, créant au même temps une discrimination entre les producteurs indépendants et Enel qui ne peut pas en bénéficier.

### *Changements récents*

Le régime juridique du secteur électrique a partiellement évolué en 1992 à la suite de la transformation de Enel en société anonyme, dont la totalité des actions a été attribuée au ministère du Trésor. Quoique la loi de 1992 n'ait réalisé qu'un changement de statut juridique, en transformant le sujet de droit public en sujet de droit privé sous contrôle étatique, il est prévu que le changement de statut devra être suivi par la formulation d'un plan gouvernemental de réorganisation des participations publiques dans le secteur de l'électricité qui comprend la privatisation des entreprises concernées. En vue de cette privatisation et de l'établissement d'une autorité de réglementation du secteur, il a été établi de transférer au ministère de l'Industrie les compétences en matière de concession aux entreprises municipalisées (préalablement attribuées à Enel)<sup>10</sup> ainsi que, à la suite de la suppression du CIP en 1993, celles en matière de fixation des tarifs.

La convention de concession entre le ministère de l'Industrie et Enel Spa, approuvée par décret ministériel au mois de décembre 1995, règle l'exercice des activités en régime de concession et n'introduit pas de modifications structurelles du marché; cependant, comme l'Autorité a dénoncé en 1995, son approbation dans l'imminence d'une réforme générale du secteur risque de constituer un obstacle pour une future réorganisation du système électrique national. En ce qui concerne les nouvelles mesures introduites, la convention prévoit une séparation comptable entre les activités de production, de transmission et de distribution de l'électricité, tout en attribuant à Enel la tâche de programmer l'offre d'électricité au niveau national. La convention prévoit, aussi, à moyen terme une plus nette articulation de Enel, à travers la création d'une société de transmission (avec la participation des sociétés des collectivités locales en proportion des activités de production exercées au niveau national) et le transfert de toutes les activités de production du monopole public à une société anonyme dont Enel resterait le principal actionnaire<sup>11</sup>.

En 1995, une Autorité indépendante de réglementation en matière d'énergie a été créée. Ses compétences les plus importantes concernent la fixation des conditions techniques et économiques d'accès et d'interconnexion aux réseaux; la définition des niveaux généraux de qualité des services et l'éventuelle imposition de dommages-intérêts; le contrôle de l'adoption et du respect des "cartes du service public" (qui fixent les standards de prestation des services) de la part des entreprises. L'Autorité a, aussi, le pouvoir de présenter au Gouvernement et au Parlement des propositions concernant les formes de gestion des services publics; le renouvellement ou la modification des concessions ou des autorisations. La loi prévoit, également, une discipline spécifique du secteur de l'énergie, concernant les tarifs et la séparation comptable des activités de production, de transport et de distribution. En ce qui concerne les tarifs, les compétences de l'Autorité doivent être exercées dans le cadre du maintien de tarifs uniformes au niveau national par catégorie d'utilisateurs et du système de péréquation entre entreprises de distribution.

### *Marchés et tarifs*

Le cadre normatif qui vient d'être décrit a largement influencé la structure des marchés dans l'industrie de l'électricité, caractérisée par un monopole public verticalement intégré qui n'a nullement été modifié par les changements marginaux introduits au cours des années quatre-vingt-dix. Une structure monopolistique caractérise les stades de la transmission, de la distribution et de la vente: le système de transmission au niveau national est contrôlé par Enel, propriétaire des lignes électriques de longue distance, et la distribution locale est assurée par Enel et/ou par les entreprises municipalisées concessionnaires de Enel.

Le segment de la génération reste largement dominé par Enel. L'introduction d'un régime d'autorisation pour la production à partir de sources conventionnelles et la libéralisation de la production à partir de sources alternatives ont conduit au cours des dernières années, surtout à la suite des incitations importantes dues à la possibilité de vendre l'énergie excédentaire à l'Enel, à une sensible augmentation de la part des producteurs indépendants dans la production nationale d'électricité au dépit de Enel, alors que la part des entreprises municipalisées est restée stable (Tableau 1). Toutefois, une véritable libéralisation de ce segment ne peut être obtenue qu'en donnant la possibilité aux producteurs de vendre l'électricité à un nombre suffisant de consommateurs finaux ou distributeurs indépendants de Enel à des prix reflétant les coûts de production. La libéralisation de la production est destinée à produire des résultats modestes en présence d'un opérateur verticalement intégré (Enel) qui contrôle 90 pour cent du segment de la distribution.

**Tableau 1. Les quotas des producteurs d'électricité**

<i>Opérateurs</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>
Enel	83,6 %	82,1 %	81,2 %	79,6 %	78,7 %	79 %
"entreprises municipalisées"	3,7 %	4,1 %	4 %	4 %	4 %	3,8 %
auto-producteurs	12,2 %	13,3 %	14,2 %	15,7 %	16,6 %	16,6 %
divers	0,5 %	0,5 %	0,6 %	0,7 %	0,7 %	0,6 %
(total électricité production - GWh)	<b>216.891</b>	<b>222.04</b>	<b>226.24</b>	<b>222.78</b>	<b>231.80</b>	<b>241.48</b>
		<b>1</b>	<b>3</b>	<b>8</b>	<b>4</b>	<b>0</b>

Source: Enel, *Produzione e Consumo di Elettricità in Italia*, 1992, 1994, 1995, 1996.

Les distorsions tarifaires sont également importantes au niveau de la vente d'électricité aux consommateurs finaux par l'Enel. Comme on l'a dit, actuellement les tarifs fixés par le ministère de l'Industrie sont uniformes par catégorie d'utilisateur sur tout le territoire national. Pour les ménages ils varient selon la classe d'appartenance du foyer, qui est déterminée sur la base de sa consommation maximale (environ 95 pour cent des usagers se positionnent dans la bande sociale). Différemment de ce qui arrive dans la majorité des autres pays européens, en Italie ces tarifs sont progressifs, leur prix unitaire augmentant avec la quantité consommée et représentent donc une importante source de subventions croisées. Par contre les tarifs appliqués aux entreprises industrielles et commerciales sont régressifs (Tableau 2).

Une telle structure tarifaire entraîne d'importantes subventions croisées en faveur des familles et des grandes entreprises, au dépit des petites et moyennes entreprises.

**Tableau 2. Coût de l'électricité par kWh**

<i>Coût par kWh (lires)</i>	<i>Italie</i>	<i>France</i>	<i>Royaume Uni</i>	<i>Allemagne</i>
Ménages - bande sociale	141	213	223	242
Ménages - ordinaire	344	174	159	180
Entreprises - ordinaire	202	141	182	208
Entreprises - grands usagers	87	65	103	93

Source: F.Pierantoni, 1993, *La Qualità delle Reti di Energia*, en *Tessuto Economico, Competitività e Sistemi a Rete*, Documenti CNEL, n.36, Rome.

### **Les perspectives de réorganisation du secteur et les interventions de l'Autorità Garante della Concorrenza e del Mercato**

Au cours des dernières années, les gouvernements qui se sont succédés ont envisagé plusieurs plans de réforme générale de la réglementation et de la structure du marché de l'électricité dans la perspective de la privatisation. Toutefois, il n'existe pas encore une orientation précise concernant le degré de concurrence qui devrait caractériser les différents stades de la fourniture de l'électricité<sup>12</sup>.

L'Autorità Garante della Concorrenza e del Mercato a manifesté à plusieurs reprises sa position au sujet des plans de privatisation et de restructuration du secteur. Elle a, notamment, souligné la nécessité d'éviter qu'une privatisation effectuée en l'absence d'une réforme du secteur en sens concurrentiel soit à l'origine d'une substitution d'un monopole privé à un monopole public. Au contraire, la politique de privatisation devrait viser à favoriser l'accès d'une pluralité d'opérateurs dans les marchés de la production et de la distribution. En même temps, à l'exception du stade de la transmission, qui conserve les caractéristiques d'un monopole naturel, le maintien de droits exclusifs dans les autres stades de l'offre d'électricité n'est justifié que dans la mesure où il est nécessaire à la poursuite de buts d'intérêt général (tels que la sécurité d'approvisionnement ou la continuité du service).

En conclusion, les orientations de l'Autorité peuvent être ainsi résumées : les activités de production, de transmission et de distribution d'électricité exercées par Enel devraient faire l'objet d'une séparation verticale; les activités de production devraient être privatisées, à travers la création de quatre ou cinq entreprises indépendantes qui devraient acquérir les centrales de propriété de l'Enel, à l'exception des centrales hydroélectriques gérées par l'organisme qui contrôle le système de transmission en tant que source énergétique de réserve; le système de transmission devrait être maintenu unitaire et propriété publique, de façon à assurer l'efficacité, la sécurité et la continuité du service à travers la coordination des centrales de production ; le stade de la distribution devrait être privatisé à travers la création d'une pluralité de sociétés de distribution (à titre indicatif huit ou neuf), actives au niveau régional, de façon à favoriser une forme de "yardstick competition"; un marché de la production devrait être activé à travers l'augmentation des opérateurs (consommateurs "qualifiés" et distributeurs) qui peuvent acheter directement auprès des producteurs indépendants sur la base de tarifs libéralisés

## Notes

- 1 La capacité du système national de production d'électricité n'est pas entièrement utilisée. En 1994, le taux moyen d'utilisation d'une centrale thermoélectrique (caractérisée par une puissance supérieure à 500 MW) était environ de 81 pour cent, tandis que le taux d'utilisation moyen pour le secteur hydroélectrique était de 87 pour cent (Enel, *Produzione e Consumo di Elettricità in Italia*, 1995).
- 2 Par contre les installations de distribution des auto-producteurs ont été transférées à Enel par décret.
- 3 Le pouvoir de surveillance du ministère de l'Industrie s'exerçait à travers l'approbation du budget et l'approbation des autorisations et concessions aux autoproducteurs et aux entreprises des collectivités locales.
- 4 Une chambre de compensation (Cassa conguaglio per il settore elettrico), créée en 1974, permet de partager entre les entreprises de distribution les profits obtenus suite à l'achat auprès de différents producteurs. La "Cassa" gère aussi les fonds de compensation en faveur des producteurs, constitués par de majorations des tarifs aux usagers (par exemple, la "majoration thermique ordinaire", instituée à la suite de la crise du pétrole pour égaliser les revenus des entreprises produisant énergie à partir de sources thermiques et hydrauliques; la "majoration thermique supplémentaire", introduite à la suite suppression du programme nucléaire, cf. *infra*; la "majoration d'incitation" aux productions utilisant de sources renouvelables, cf. *infra*).
- 5 Le PEN, qui présente caractère d'acte administratif caractérisé par une complexe procédure de formation (proposition du Ministre de l'Industrie, consensus du Parlement et approbation du CIPE), visait à garantir des nouvelles exigences, telles que l'épargne énergétique, la protection de l'environnement, le développement des sources énergétiques nationales, la diversification des sources et des zones géopolitiques d'approvisionnement.
- 6 Les auto-producteurs font partie principalement de l'industrie chimique (leur contribution correspondant environ au 50 pour cent du total produit par les auto-producteurs) et de l'industrie du fer et de l'acier (environ 18 pour cent), bien que d'autres industries jouent un rôle important, comme l'industrie du charbon, du pétrole, des minéraux non métallifères et l'industrie du textile. La loi du 1991 a supprimé la norme qui établissait que 70 pour cent de l'énergie produite devait être consommée par l'entreprise industrielle auto-productrice.
- 7 Ces incitations ont une durée limitée aux premières huit années d'exercice de la centrale.
- 8 En 1992, la production en cogénération représentait le 60 pour cent du total fourni par les auto-producteurs et le 78 pour cent de leur production d'énergie thermoélectrique; par rapport au totale de l'énergie produite en cogénération leur contribution était de 96 pour cent. Au niveau national la cogénération correspondait au 8.8 pour cent de la production totale et le 11 pour cent de la production thermoélectrique.
- 9 Le "teleriscaldamento" est un système qui utilise à distance la chaleur produite par une centrale thermique ou de "cogénération" ou par une source géothermique.

- 10 Cependant, la loi ne modifie pas le régime des rapports entre l'Enel et les entreprises municipalisées réglés par des conventions prévues par la loi du 1991.
- 11 Les deux sociétés de production et transmission, contrôlées par Enel en vertu de son rôle largement majoritaire dans les marchés intéressés, interviendront en tant que sous-concessionnaires de Enel.
- 12 En 1992 le Gouvernement a approuvé le premier programme de démission des participations publiques (consistant à la cession aux privés d'une participation minoritaire dans Enel) sans préciser la structure de marché qui était visée; en 1993 le Gouvernement approuvait un programme de privatisation totale qui envisageait toutefois le maintien de Enel verticalement intégré; en 1994 le Gouvernement envisageait au contraire une vente séparée des activités de production, transport et distribution de Enel; enfin en 1995, le Gouvernement a présenté au Parlement un document concernant "Les lignes fondamentales pour la privatisation de Enel et la réforme du secteur électrique" qui contemple une libéralisation assez limitée des segments de la production et de la distribution; cependant, le ministre de l'Industrie a souligné le caractère purement "informatif" du dit document, qui n'a pas été transmis au Parlement pour la formulation d'un avis, condition préalable aux privatisations des concessionnaires de services publics.



# JAPAN

## General Situation of the Electricity Sector in Japan

In Japan, there are ten electrical power companies (called “general electricity undertakings” or GEUs in the Electricity Business Act) each engaging in the generation, transmission and distribution of electricity. While each company monopolizes electricity supply to a certain area, an obligation for universal supply is imposed on each. The sum total of maximum generation capacity of all GEUs as of March 1995 was 169 670 000 kW, and the total amount of electricity actually generated by the ten was 727 120 million kWh in Japanese F.Y. 1994 (April 1994-March 1995).

As for the “wholesale electricity undertakings” (or WEUs) which supply electricity to GEUs, there were 56 of them as of March 1995. They consist of Electric Power Development Co. Ltd., Japan Atomic Power Company, 34 WEUs owned by local governments, and 20 joint thermal power generation operators. The sum total of maximum generating capacity of all WEUs as of March 1995 was 28 010 000 kW, and the total electricity actually generated by the 56 GEUs was 122 157 million kWh in F.Y. 1994.

Additionally, there are companies which are generating electricity by themselves mainly for their own use. Some of them sell their surplus electricity to GEUs under a scheme called the “surplus electricity purchasing system”. As of March 1995, the total electricity generation capacity of all self generating plants in Japan amounted to 23 210 000 kW, and actual electricity power generated in F.Y. 1994 amounted to 115 071 million kWh.

## Regulations in the Electricity Sector

### *Recent Deregulation*

Due to the amendment of the Electricity Business Act promulgated on April 21, 1995 and enforced on December 1, 1995, the following deregulation measures have been effected:

#### *Liberalization of Electricity Generation*

Entry into the electricity generating business has been liberalized due to the increased access for enterprises who have, or intend to have, medium or small-sized generating facilities with high economic efficiency. For this purpose, a new tender system for the purchase of electricity by GEUs has been introduced. Moreover, a wholesale consignment system was introduced in order to prevent monopsony purchasing by the GEUs and to create the widest possible electricity wholesale market.

#### *Creation of Specialized Electricity Business*

Before the amendment, those who wanted to sell electricity to general consumers were obliged to obtain consent from the relevant GEU. However, due to technological advancement in electricity generation facilities, the possibility of entry into this sphere has been increased. Accordingly, a new

business category called “specialized electricity business” has been introduced, enabling direct sales of electricity to general consumers in limited areas by non-GEUs without the GEUs consent.

#### *Introduction of Optional Provisions*

Before the amendment, if a GEU wanted to offer a discount rate, it was required to obtain the pre-approval of the regulatory authority, the Ministry of International Trade and Industry (or MITI), for each discount rate provision. However, after the amendment, they are only required to give notification of such discount rate provisions, provided that they are conducive to the effective utilization of electricity facilities.

#### *Introduction of Yard-stick Assessment*

As a new element in assessing the tariffs of GEUs, MITI has introduced a yard-stick assessment method by which the figures indicating the efficiency increase of each GEU are compared with one another by means of a common yard-stick, although still employing the comprehensive cost principle. In addition, a new system called the “fuel and material cost adjustment system” has been introduced whereby changes in the costs of fuel and materials will be more swiftly reflected to the tariff. Furthermore, each GEU is now required to formulate and publish each year an operative efficiency improvement program, which includes concrete measures for the improved efficiency of management and the specific objectives of its business.

#### ***Current Regulatory Regime***

##### *Objectives*

The objectives of regulation as stated in Article 1 of the Electricity Business Act (hereafter the “Act”) are:

(i) the protection of electricity consumers and (ii) the sound development of electricity business, by ensuring proper and rational management of electricity business; and (iii) securing public safety and (iv) preventing pollution, by regulating the construction works, maintenance and operation of electricity facilities.

##### *General Electricity Business*

General electricity business is defined by the Act (Article 2) as the business of supplying electricity in response to the general demand. MITI's approval is needed to enter into this business. The necessary conditions for the granting of this approval are (i) adaptability of the business to the demand (ii) sufficiency of facility and capacity (iii) absence of possibility of excess capacity, etc. Additionally, in applying for the said permission, one must present the intended area of supply.

Concerning tariffs, MITI's approval is once again required. The requirements for approval are (i) that costs and profits are appropriate, and (ii) that there is no unjustifiable discriminatory treatment, etc. As previously stated above, in addition to the examination of each cost estimate, a yard-stick assessment will be done whereby the degree of efficiency improvement will be compared amongst the GEUs.

Apart from the regular tariff scale, it is allowable to formulate “optional provisions” which stipulate discount rates when deemed conducive for the efficient use of facilities. MITI must be notified of

such optional provisions, and they in turn can only order a change when either such a change cannot be considered as conducive for efficient use of facilities, or it could harm the interests of consumers, etc.

With regard to the tendering of wholesale electricity, the GEUs designated by MITI are obliged to allow wholesale consignment in order to prevent monopsony buying and to create the widest possible electricity wholesale market. In offering tenders, GEUs are obliged to announce both the upper limit of wholesale prices, the amount of electricity to be purchased, and the year of starting up operation.

In addition, there are regulations on such diverse items as “business on the side”, suspension or termination of businesses, universal supply obligation, and the requirement to submit a supply plan.

#### *Wholesale Electricity Business*

Wholesale electricity business is defined as businesses supplying electricity to GEUs with a minimum generation capacity of two million kW or more (Article 2 of the Act). In order to enter this business, MITI's permission is required (Article 3 of the Act). The only condition for the permission is the adaptability of business to the demand.

With regard to the tariff, MITI's approval is needed. The tariff will be assessed on an appropriate costs basis. In addition, the universal supply obligation is imposed (Article 18 of the Act). MITI's permission is needed to suspend or terminate businesses. The submission of a supply plan is required. There is no regulation pertaining to “business on the side”.

#### *Wholesale Supply Business*

Wholesale Supply Business is defined as the business of supplying electricity to GEUs with a generation capacity of less than two million kW (Article 2-1-3 of the Act). Entry into this business is, in principle, open to everyone. With regard to the tariff, it is necessary to give notification to MITI, provided that the tariff amount was determined through a tender commissioned by a GEU (Article 22-5 of the Act).

#### *Specialized Electricity Business*

Specialized Electricity Business is defined as business supplying electricity in response to the demand in a particular geographical area, ex. one building constitutes one unit (Article 2-1-5 of the Act). In order to enter this business, MITI's permission is required (Article 3 of the Act). The conditions for the granting of permission are:

(i) adaptability to the demand, and (ii) sufficiency in facility and capacity. However, unlike the permission requirements to enter into general electricity business, the prevention of excess capacity is not included as a condition. On the other hand, as conditions are specific to the specialized electricity business, it is required that (i) the interest of consumers in the area supplied by GEUs not be impaired, and that (ii) the inauguration of the business in the area be deemed appropriate from the view-point of public interest (Article 5 of the Act).

The conditions of supply, including tariffs, must be disclosed to MITI, who can order the change of conditions only when they do not fulfill the requirements of non-discrimination, etc. (Article 24-1 & 2 of the Act). Furthermore, there are regulations such as (i) the requirement of permission for suspending or terminating operation (Article 14 of the Act), and (ii) the universal supply obligation (Article 18 of the Act).

### *Wholesale Consignment System*

Together with the liberalization of electricity generation business, a "wholesale consignment system" has been introduced in order to create the widest possible wholesale markets ensuring that new entry not be restricted by the present demarcation of supply areas established by the GEUs. In the Act, the system is called a "transfer supply system" (Article 2-1-11 of the Act). The designated GEUs are required to formulate provisions for a transfer supply of electricity, including tariffs, and to inform MITI (Article 24-3-1 of the Act). They are also obliged to make such provisions public (Article 24-3-4 of the Act). MITI has the power to order changes in the provisions when certain conditions are met (Article 24-3-3); and when a GEU refuses to carry out transfer supply without proper reasons, MITI can issue an order to carry it out (Article 24-5 of the Act).

These stipulations are intended to make sure that the conditions of transfer supply are fair and transparent, so that the use of the system by those intending to enter wholesale supply business will be ultimately facilitated.

### *Self-Generation for Self-Consumption*

Amongst the operations of direct electricity supply provided to users, including those done on a business basis, the following operations are free from the above-mentioned restrictions on electricity business:

- (i) supply to one building,
- (ii) supply by the local governments to the units within the same government,
- (iii) supply by a company to its employee's apartments.

### *The System for the Purchase of Surplus Electricity*

In order to promote the effective utilization of surplus self-generated electricity, each GEU voluntarily prepares a set of "menus" for the purchase of surplus electricity.

### ***Article 21 of the Anti-Monopoly Act (AMA)***

There is an "exemption clause" in the AMA pertaining to electricity business. Article 21 (natural monopoly) reads:

The provisions of this Act shall not apply to such acts relating to the production, sale, or supply as are done in the proper course of business by a person engaging in railway, electricity, gas or any other business constituting monopoly by the inherent nature of the said business.

With regards to this provision, a report was issued in March 1993 by the study group on government regulations and competition policy (organized by the JFTC), stating as follows:

Article 21 is nothing but a declaratory or confirmative statement saying that since the monopolistic position of natural monopoly businesses is obtained and maintained through the governments restriction on entry, and not through the acts of the entrepreneurs, such monopolistic position and resulting monopoly in supply does not constitute a AMA violation. Accordingly, the Article cannot be regarded as an AMA exemption clause in its proper meaning.

The commentary on the Electricity Business Act, compiled by the Agency of Natural Resources and Energy (an external bureau of MITI), makes similar remarks on Article 21 of the AMA:

In Article 28 of the Electricity Business Act, it is stated that the electricity business entrepreneurs, in developing electricity resources, supplying electricity and utilizing electricity facility and doing other works for their business, must act harmoniously with each other, making proper use of wholesale suppliers capacity. However, the above commentary makes it clear that this provision does not, in any sense, exempt the application of AMA to such acts of electricity business entrepreneurs.

### ***Trends in the Market after Deregulation***

#### *Electricity Generation Sector*

After the liberalization of wholesale supply business, six GEUs out of ten have expressed their intention of holding tenders for the purchase of electricity, and have made public the conditions of these tenders.

The total amount to be purchased by the six GEUs is 2 655 000 kW, which is about 1 % of the present total capacity. The purchase is expected to take place between 1998 and 2000.

The tenders were closed at the end of August 1996, although decisions are still yet to be taken. In total, 100 "biddings" (or applications) were made.

The companies participating in the tender included those engaged in steel making, oil refinery, chemical production, mining, and paper and pulp manufacturing. Steel makers and oil refineries made up the largest groups. The total amount of electricity supply proposed in the bidding was 10 813 kW, which is about four times as large as the planned purchase amount.

#### *Specialized Electricity Business*

Up until now, no applications for specialized electricity business have been made.

#### *Deregulation on Tariffs*

After the deregulation on tariffs, all the GEUs created, and subsequently submitted to MITI, optional provisions regarding discounts based on seasons or time zones. Since January 1996, those provisions have been put into use.

More specifically, "mid-night discounts" and "summer holiday contracts" have been most often used.

In December 1995, the draft tariffs submitted by the GEUs were examined for the first time under the new assessment system, incorporating the yard-stick assessment. As a result, a 4.21 per cent reduction on average, compared with the level of 1994, has been realized.



# NEW ZEALAND

## Introduction

Over the last 10 years there have been significant reforms in all sectors of the New Zealand electricity industry. This paper outlines the main developments and discusses the main competition law decisions in the electricity industry.

The New Zealand electricity system has several unique features which have affected the design of reforms to the industry. The system is relatively small, is largely hydro based<sup>1</sup> and is isolated from other systems, making it more difficult to develop an effective market than in larger interconnected systems.

## Energy Policy Framework

The Government's energy policy framework (confirmed in June 1992) is:

. . . to ensure that energy services continue to be available at the lowest cost to the economy, consistent with sustainable development. This will be achieved by the efficient and effective provision of energy services through properly functioning commercial systems with competitive incentives. These systems will work within an effective and stable regulatory environment and take energy conservation into account."

## The present regulatory environment

The New Zealand electricity industry's regulatory regime includes neither price control nor an industry-specific regulator. Instead New Zealand has adopted a 'light-handed' regulatory regime to control the abuse of market power. The regime, which is described more fully in Annex I, comprises:

- (i) full application of competition law (the Commerce Act 1986) to deal with anticompetitive behaviour; supported by
- (ii) extensive information disclosure requirements under the Electricity (Information Disclosure) Regulations 1994; and
- (iii) the threat of further regulation as a last resort if market dominance is abused.

The information disclosure regulations focus on the natural monopoly sectors of the industry (i.e. transmission and distribution) where concerns relating to market dominance are greatest. There are disclosure requirements in sectors where competition is possible (i.e. retailing and generation) but they are much less stringent. More specifically, the regulations are designed to help:

- discourage monopoly pricing (i.e. excessive profits and/or costs);

- discourage uneconomic electricity generation;
- discourage excessive cross subsidies between consumer classes;
- promote competition in electricity retailing and generation by:
  - 'ring fencing' natural monopoly and potentially competitive sectors;
  - revealing access price discrimination and predatory pricing; and
  - revealing cross-subsidies between natural monopoly and competitive activities.

## **The reforms of the last decade**

### *Chronology of the reforms*

The key reforms since the mid-1980s have been:

- the transfer of the Government's generation and transmission business from the Ministry of Energy to a newly created State-owned enterprise, the Electricity Corporation of NZ Ltd (ECNZ) in 1987;
- a requirement for all electricity supply businesses to be set up as stand-alone companies in 1993;
- the removal of statutory monopolies in the distribution and retailing sectors in 1993-4;
- the introduction of information disclosure regulations in 1994;
- the separation of the Government-owned transmission business (Trans Power NZ Ltd) from ECNZ in 1994: and
- the creation of a new State-owned generation company, Contact Energy Ltd in 1996, including acquisition of a significant proportion of the generation assets of ECNZ<sup>2</sup>.

### *The starting point: The mid-1980s*

Prior to the reforms, electricity generation and transmission were among the responsibilities of the Electricity Division of the Ministry of Energy. That Ministry was also responsible for policy advice and regulatory functions. There was extensive political involvement in generation investment decisions; project management did not meet normal commercial standards; and wholesale pricing was, in part, determined by political factors.

Local distribution and supply were the responsibility of electricity supply authorities (ESAs). There were 61<sup>3</sup> in 1985 (down from 93 in 1945), roughly one ESA for every 50,000 people. These were electorally oriented, statutory monopolies. Industry performance was poor with the typical results being inefficiency, lack of customer choice and cross-subsidies from commercial and smaller industrial users to domestic consumers.

This set of circumstances coincided with increasing concern about New Zealand's overall economic performance. In the mid-1980s the Government embarked on a systematic economic reform process that included wideranging microeconomic reforms, more predictable macroeconomic policy formation, and strengthened public sector accountability mechanisms. Outcomes sought included

economic growth through efficient resource use, driven by clearer price signals, and, where possible, by competitive markets.

One of the initiatives was the commencement of a major interdepartmental review of the Crown's role in the electricity industry. The outcome of the review was decisions by the Government in 1986 to separate operational and other functions, improve commercial performance and introduce commercial disciplines for trading activities.

### ***Generation***

On 1 April 1987, ECNZ was set up as a State-owned Enterprise, incorporating the generation and transmission assets of the New Zealand Electricity Division of the Ministry of Energy. The Division's policy and regulatory activities were largely retained within the Ministry of Energy.

Until earlier this year ECNZ owned about 7 700 megawatts of electricity generation capacity, 96 per cent of the capacity available in New Zealand. In November 1995, a new State-owned enterprise, Contact Energy Ltd, was established for the express purpose of competing with ECNZ in electricity generation. Various rights, productive and other assets of ECNZ (amounting to around 28 per cent of New Zealand's generation capacity) were vested in Contact on 1 February 1996. This was an integral part of the wholesale market reforms (see below).

There is no intention to sell Contact or ECNZ. However, eight of ECNZ's smaller hydro stations (amounting to about four per cent of New Zealand's generating capacity) are available for sale to local electricity companies and Maori interests.

### ***Transmission***

The grid network interconnects all generation stations (other than those embedded in electricity companies' distribution networks) and the substations which supply electricity to major consumers and local electricity companies. Transmission assets in the North Island and the South Island are connected by a 1 240 megawatt capacity HVDC link.

In 1988 ECNZ's transmission business, which had been incorporated within ECNZ, became a subsidiary company, Trans Power (NZ) Ltd. In April 1994 Trans Power was separated from ECNZ into a new State-owned enterprise with the purpose of ensuring the independence of the transmission grid, thus facilitating access on fair and reasonable terms. In preparation for the separation of Trans Power from ECNZ, ECNZ's delivered energy price was unbundled. Regional transmission pricing began to be phased in, with the price more closely reflecting the cost of supplying grid users.

### ***Distribution and retailing***

Major changes to the distribution and retailing sectors have occurred in the past six years.

In May 1990 the Government announced that it would introduce legislation that would require ESAs to be corporatised, thereby separating them from other business and non-business activities of their largely local government owners. In August 1990 the Electric Power Boards Amendment Act was passed requiring the appointment of commercial members to power boards in order to help prepare them for corporatisation.

In 1992 Parliament passed five energy sector reform acts. One of these, the Energy Companies Act 1992, addressed ownership issues. It required corporatisation of the then 48 ESAs. As part of the corporatisation process, those ESAs that were boards were required to consult with their local communities on ownership options<sup>4</sup> and gain the agreement of the trustees on the ownership option selected.

A diversity of ownership forms has resulted. There are now 41 electricity companies (former ESAs). Trust ownership is the most favoured ownership option, particularly in rural areas. 22 have the majority of their shares owned by a trust. 12 are majority-owned by consumers, councils or private investors. Most of these companies have tradeable shares, with five listed on the New Zealand Stock Exchange. One company is owned by the Crown. The remaining companies are owned by a mix of councils, trusts and private investors. Further mergers, particularly between neighbouring companies, are likely to occur.

Another of the 1992 enactments was the Electricity Act. It removed existing statutory distribution and retail monopolies in two steps: April 1993 for consumers who used less than 0.5 GWh of electricity in the 1992 calendar year; and April 1994 for all other consumers, thereby removing barriers to retail competition. Competition has since arisen, mainly for industrial and commercial customers, including some retail chains. Competition for smaller and domestic customers has not occurred yet, due largely to metering costs.

Electricity companies, as part of the process of adapting to a more commercial and competitive environment, are moving to rebalance electricity prices to eliminate cross-subsidies between classes of consumers. The balance between fixed and variable charges is also being adjusted to more accurately reflect the fixed component of costs.

The price disadvantages that commercial and smaller industrial consumers have been subject to in the past are being reduced. However, domestic consumers are tending to experience higher charges both through the removal of cross-subsidies and the introduction of higher fixed charges.

### ***The wholesale market***

The development of a competitive wholesale market had been envisaged from the outset of the reforms. In 1992 a private sector study, the Wholesale Electricity Market Study, recommended a significant extension of the existing market arrangements within ECNZ to provide a predictable price path for wholesale electricity and to enable some trading at marginal prices. Competition for ECNZ was envisaged. An independent critique of the study was undertaken for the Government and some issues were identified for further consultation.

In June 1993 the Government announced the establishment of the Wholesale Electricity Market Development Group (WEMDG), comprising representatives from a range of interested parties within the industry and including consumers and new entrant generators. Its terms of reference included the development of specific, cost effective proposals for developing a wholesale electricity market that, consistent with sustainable development, would ensure wholesale electricity is delivered at the lowest cost to the economy.

WEMDG reported its findings in September 1994 and recommended the establishment of a competitive wholesale electricity market, the sale of most electricity under long-term tradeable contracts and the establishment of a voluntary pool and spot market operated by a neutral entity. It also proposed

steps to reduce ECNZ's dominance including progressively leasing about 40% of its generating plants, and constraints on new investment.

Government decisions concerning the wholesale electricity market were announced on 8 June 1995. WEMDG's proposal concerning leasing of generation plants did not proceed, but other key recommendations are being adopted. The key component of the reforms was the splitting of ECNZ into two competing State enterprises (see above).

The Government recognised that, initially, ECNZ will retain a dominant position in the wholesale electricity market, with a capacity market share of about 68 per cent. Accordingly, a set of special restraints apply to ECNZ until its market share falls below 45 per cent:

- a cap preventing it from building more than 50 per cent of new capacity. This will guarantee a share of the market to independent generators and promote competition;
- a requirement to 'ring-fence' any additional capacity which it builds within this cap. This will constrain cross-subsidisation of new ECNZ capacity from existing generation; and
- a requirement to offer electricity from most of its capacity on longer-term contracts. This will reduce its ability and incentives to manipulate spot market prices.

The Government expects that the establishment of a competitive wholesale electricity market will provide incentives to domestic and overseas investors to bring new generation capacity on stream when it is required, and will discourage overbuilding of new generation. In addition, competitive pricing will enable energy efficiency and conservation options to compete on fair terms with new generation capacity. Competition is expected to keep the pressure on generators to minimise costs and to operate efficiently, and, in conjunction with long-term contractual pricing, to constrain wholesale electricity prices.

New generation projects totalling at least 760 megawatts, are currently being put in place by new entrant generators under these new arrangements.

### ***The Electricity Market Company Ltd***

EMCO was established in 1993 by ECNZ and the Electricity Supply Association of New Zealand (ESANZ) for the purpose of developing and providing the various services required by the proposed wholesale electricity market. The shareholders' agreement calls on EMCO to carry out its functions 'in a neutral, efficient and non-discriminatory manner for the benefit of the electricity industry, for all consumers and for the broad, economic and social benefit of New Zealand'. In September 1995, the ownership of EMCO was rearranged. Trans Power, ESANZ and ECNZ are now equal shareholders in EMCO.

EMCO administers the rules which govern the New Zealand Electricity Market (NZEM). The rules cover all aspects of trading and include procedures for receipt of bids, offers and financial settlement. They also provide for the buying and selling of electricity at the wholesale level through a pool arrangement in which competing generators offer electricity into the market for dispatch and transmission by Trans Power.

The market rules are determined by market participants, within the constraints of the Commerce Act 1986. Market participants include generators, purchasers and traders. Admittance is by application to

the independent Market Surveillance Committee. Alterations or additions to the rules of NZEM can only be made with the agreement of the participants.

From February to September 1996 the NZEM is operating under interim rules, to smooth the transition to a fully competitive market. Rules for the fully competitive market, have been finalised and will come into effect on 1 October 1996. The rules provide for a day ahead (ex ante) financial commitment market, providing the opportunity for purchasers and generators to establish a price and quantity a day ahead.

In addition there will be a real time physical market with the following characteristics:

- scheduling and dispatch to be based on simple price/quantity bids and offers;
- generation to be scheduled for each half hourly trading period to meet expected demand at the lowest cost;
- frequency control reserve, transmission loss and transmission constraint effects to be priced;
- marginal location factors to be determined daily for each half hour; and
- price to be allowed to clear the market (no cap or floor on spot price).

### ***Grid Services***

In preparation for the commencement of the wholesale market on 1 October 1996, Trans Power is introducing unbundled contracts for ancillary services (voltage and frequency support), instantaneous reserve, metering and reconciliation services, and scheduling and dispatch services. It has reviewed its transmission pricing regime and is planning to set prices in a manner which does not impede competitive activity between generators and consumers, but creates a neutral environment for all market participants.

A key change is the introduction of full nodal pricing. Trans Power will set a price at each node of the grid to reflect the cost incurred (including the costs of generation, losses and constraints) from a marginal change in consumption at that node. Current nodal prices do not include the cost of constraints.

### **Application of competition law to the electricity industry**

The Commerce Act applies in full to the electricity industry. The key developments have been as follows:

- the Minister of Commerce has transmitted two statements of Government economic policy to the Commerce Commission on the electricity industry;
- the Commission has considered around 20 applications for the approval of mergers and acquisitions between power companies;
- the Commission has considered two applications for the authorisation of pricing mechanisms and other aspects included in the wholesale market rules; and
- the Commission has received a number of complaints relating to the terms and conditions offered for access to natural monopoly facilities.

### *Statements of Government economic policy*

The Act empowers the Minister of Commerce to transmit statements of Government economic policy to the Commission. These statements are not instructions. Rather, they are statements that the Commission must have regard to in the exercise of its statutory functions. The only two extant statements relate to the electricity industry: electricity transmission (issued December 1994, replacing an earlier statement issued in October 1993) and the wholesale electricity market (December 1995).

Both statements confirm the overall energy policy objective as stated above and both confirm the objective of using competitive processes to achieve efficient outcomes. The statement on transmission describes the more specific objectives for Trans Power (grid service efficiency, non-discriminatory access, transparency and normal profitability).

The statement on the wholesale market defines the objectives of the reforms as pressure on prices and costs, and efficient (i.e. marginal cost) pricing. The statement also outlines the reform options that were considered by the Government, summarises its decisions and explains why those decisions were made.

### *Mergers and acquisitions*

41. There have, in recent years, been a number of mergers between power companies, particularly between neighbouring companies. Annex II outlines the major decision. It also includes summaries of the two key decisions on the wholesale electricity market and discusses Commerce Commission enforcement in the electricity industry.

### **Conclusion**

42. New Zealand's experience with centrally planned approaches to electricity generation and other forms of product and service delivery prompted a search for more effective ways to promote economic and social development. During the period in which generation was controlled by governments, significant price jumps often occurred, and periods of supply shortage also developed. Successive governments for the last 10 years have reformed the industry with the aim of relying on competitive forces to the maximum extent possible. Government intervention is confined to:

- cross-sectoral laws such as the Commerce Act 1986; and
- light-handed industry-specific regulation where there is a market failure.

There have been a number of important decisions under the Commerce Act already. These decisions have indicated that there are no particular problems with applying competition laws to the electricity industry. There is also a prospect of enforcement activity by the Commerce Commission against a line company in relation to the pricing terms it has offered for access.

The commencement of new wholesale market and transmission pricing arrangements signals the end of the major part of the reform programme. Attention will now turn to consolidation of the reforms, to ensure that consumers receive maximum benefits.

The effect of the reforms to date can be assessed in the following terms. National average domestic electricity prices, in real terms, are virtually the same in 1995 as they were in 1985. Domestic

prices fell from 1986 to 1991, but they have since risen. National average commercial electricity prices have fallen by about 25 per cent in real terms between 1985 and 1995. These relative movements reflect the ongoing removal of the cross-subsidies that had built up during the pre-reform period.

Factors that currently impact on electricity prices include the removal of these cross-subsidies, moves towards commercial rates of return and changes in generation and transmission prices, partly offset by gains in productive efficiency. For example, ECNZ's average wholesale prices have fallen by around 14 per cent since it was corporatised in 1987, reflecting productive efficiency gains.

The Government has recently reviewed the effectiveness of section 36 of the Commerce Act in relation to network access. It has decided to continue with the existing regulatory regime, but has asked officials to continue to examine potential means for improving the regime.

## ANNEX I : LIGHT-HANDED REGULATION IN NEW ZEALAND

The New Zealand electricity industry's regulatory regime does not have any industry-specific regulatory body or price control. Instead New Zealand has adopted a light-handed regulatory approach which comprises three components:

- (i) application of competition law to deal with anticompetitive behaviour; in particular, section 36 of the Commerce Act 1986 which prohibits dominant firms from using their market power for exclusionary purposes; supported by
- (ii) extensive information disclosure requirements under the Electricity (Information Disclosure) Regulations 1994, to make transparent the actions of firms with market dominance; and
- (iii) the threat of further regulation as a last resort (e.g. the introduction of price control) if market power is abused.

Light-handed regulation aims to stem abuses of market power. It focuses particularly on the natural monopoly sectors of the electricity industry (i.e. transmission and distribution) where concerns relating to market dominance are greatest. Disclosure requirements on sectors where competition is possible (i.e. retailing and generation) are much less stringent.

Collectively, information disclosure is designed to help:

- discourage monopoly pricing (i.e. excessive profits and/or costs);
- promote competition in electricity retailing and generation. Information disclosure does this by:
  - promoting open access to natural monopoly lines;
  - revealing discriminatory access pricing and predatory pricing; and
  - revealing cross-subsidies between natural monopoly and competitive activities
- discourage uneconomic electricity generation; and
- discourage excessive cross-subsidies between consumer classes.

The Regulations require electricity companies to reveal a very wide range of financial and non-financial information to their customers and other interested parties.

Information that has to be disclosed includes separate audited financial statements distinguishing line businesses from other business areas where competition may emerge, i.e. generation and retailing. For line businesses, contract information (notably prices and terms and conditions of supply), cost allocation policies and methodologies, costs and revenues by tariff category, and financial and other performance measures are required. These latter two items are particularly useful for monitoring any cross-subsidies between consumer classes, and profits. As a temporary measure, pending introduction of full retail competition, contracts with consumers for electricity supply also need to be disclosed. This measure is designed to promote competition in electricity retailing.

This information assists consumers and other interested parties to monitor and compare electricity companies. Disclosure also facilitates larger consumers and competitors to negotiate terms and conditions for electricity supply and line access. Recourse to the Commerce Act is also facilitated if there is any evidence of anticompetitive behaviour.

The Government is currently reviewing the information disclosure regulations, to tighten the distinction between line businesses and other businesses for disclosure of separate audited financial statements. Consideration is being given to requiring disclosure of costs and revenues by tariff categories (domestic and non-domestic) for energy businesses.

The Government has recently reviewed the effectiveness of section 36 of the Commerce Act in relation to network access. It has decided to continue with the existing regulatory regime, but has asked officials to continue to examine potential means for improving the regime.

## ANNEX II: COMPETITION LAW ACTIVITY

### Mergers and Acquisitions

The Commerce Commission has received around 20 applications for clearance of electricity company mergers. The most important of these was a proposal involving the two largest electricity supply companies in New Zealand: for Mercury Energy Ltd to acquire Power New Zealand Ltd. Mercury and PNZ were the two electricity companies with embedded distribution assets in and around New Zealand's largest city, Auckland. The issues in this case were illustrative of the issues in other cases and the main findings in the staff report were that the merger would:

- result in a loss of potential cross-border competition between Mercury and PNZ and would reduce the potential for consumer and yardstick comparisons. However, these effects were very minor;
- not affect competition for retail and other small consumers because such competition was not viable;
- lead to some aggregation in the national retailing market. However, the existence of other major retailers, the potential for ECNZ to enter the market, and low barriers to entry meant that the ability of other power companies to compete with the merged company would not diminish;
- not be likely to reduce the constraints on ECNZ in generation and wholesale markets;
- not reduce the constraints on supply to new subdivisions because there is no reason why ownership of new networks should be limited to the local operator.

Based on the staff report the Commission concluded that the acquisition would not create or strengthen a dominant position in a market and cleared the proposal. PNZ appealed the decision to the High Court. In upholding the Commission's decision the key issues considered by the Court were:

- The appropriate geographical market definition for electricity distribution. PNZ submitted that a new larger regional market would come into existence by reason of the very fact of the takeover by one natural monopolist of an adjoining natural monopoly. The Court stated that the relevant market was defined by market realities, not simply by firm activity. The expanded market area was the relevant market and within that context, the source of the enlarged firm's market power would be unchanged (i.e. the natural monopoly possessed by the ownership of local distribution lines and their dependence upon the nearest transformer) but the geographic scope of its exercise would expand.
- Whether 'new networks' is a separate market. The Court accepted that they were separate because they must embody sunk costs that are embedded in the local or regional distribution areas. It also accepted that the operation of new networks constrained existing line services. However, the operation of new networks in the Auckland region is not confined to Mercury and PNZ. Hence, the acquisition would have little effect.

- The potential for cross-border competition. The Court concluded that, if anything, the Commission took too seriously the potential for cross-border competition. The common border between the areas in which the two companies had embedded distribution assets was predominantly water (a harbour, a river and a stream). The common land border was less than three kilometres long.
- The loss of consumer and yardstick comparisons. The Court was not convinced by PNZ's submission that the loss of such comparisons between the two companies would cause a market power problem. It concluded that the loss of PNZ would have very little effect upon the availability of comparative material both within New Zealand and internationally.
- The impact on the national electricity market. The Mercury and PNZ pre-merger market shares were 19% and 13% with the CR4 being 52%. There had been growth in wheeling activity and the Court noted that access to distribution facilities had not been an impediment to the development of the wheeling function.

### **Interim Wholesale Pricing Mechanisms Decision**

Under the Commerce Act parties to proposed agreements that contravene or might contravene the Act may seek authorisation on the grounds that any anticompetitive detriment is likely to be outweighed by a benefit to the public. Although the public benefit test may incorporate any value of New Zealand society it is, essentially, an efficiencies defence. The effect of an authorisation is that the agreement may be entered into and/or given effect to without being at risk of contravening the Act.

ECNZ, Contact and EMCO sought authorisation for the proposed interim pricing mechanisms in the draft wholesale market rules that would operate during the transition (February to September 1996) to a fully competitive wholesale market. The parties considered that the pricing mechanisms were procompetitive because the aim was to move spot prices closer to market clearing prices. However, they sought authorisation because of concern that the pricing mechanisms might constitute price fixing, which is prohibited.

Under the rules operating prior to the application the wholesale prices were determined as follows:

- EMCO set a price for each half hour period of the forthcoming week using forecast demand and supply information<sup>5</sup>; and
- ECNZ offered tradeable financial hedge electricity prices for each half hour period for the following year. The hedge prices provided protection against unexpected changes in the week-ahead prices set by EMCO.

The key aspects of the rules for the interim period:

- prior to 6 April 1996 EMCO continued to set the wholesale prices as before, except that it received separate offers to generate electricity from Contact and ECNZ; and
- between 6 April to 30 September the following changes occurred:
  - day-ahead replaced week-ahead contracts;

- actual demand used instead of forecast demand;
- daily rather than weekly merit orders;
- price equalled the marginal cost of the last station used to meet actual demand.

Hedges continued to be available from ECNZ throughout the interim period.

The Commission concluded that, in the absence of the interim arrangements, some of the proposed changes would be implemented unilaterally by ECNZ but that there would be a delay in the final vesting of the power stations scheduled to be transferred from ECNZ to Contact. ECNZ would continue as a virtual monopolist until the delayed vesting date, at which time there would be a 'big bang' where the final rules would come into effect without any interim period where competition was trialled.

The Commission concluded that the pricing mechanisms amounted to price fixing. However, there were no significant competitive detriments attributable to them and there would be significant benefits arising from the increased ability of the parties to practise for the introduction of competition and to assist with the ultimate design of the final market. There could also be some efficiency gains from the limited competition in the interim period. Hence, an authorisation was granted.

Authorisation was also sought for the Interim Supply Agreement whereby Contact would agree to supply ECNZ with all of its output during the interim period. The ISA was required because ECNZ had contractual obligations to supply all electricity demanded by customers until 30 September 1996. The Commission concluded that it did not have the jurisdiction to grant an authorisation for the ISA because there was no lessening of competition. Hence, the ISA could proceed without the need for an authorisation.

### **Final Wholesale Pricing Mechanisms Decision**

During the interim, EMCO had obtained the support of electricity generators and purchasers for the introduction of a real time electricity trading market, and for a day ahead commitment market for the trading of electricity contracts for the following day. The key characteristics of these two market mechanisms are described in paragraphs 33 and 34 of the main body of this paper. Both markets are due to come into operation on 1 October 1996.

EMCO sought the Commission's authorisation for those of the rules which it considered might be at risk of contravening the Act. These comprised rules relating the pricing mechanisms, prudential provisions and metering standards.

In its decision dated 13 September 1996 the Commission concluded that none of the proposed rules lessened competition and that, accordingly authorisation was neither required by the Act nor within the jurisdiction of the Commission. Rather, it concluded that the purpose of the rules is to establish an efficient, competitive wholesale market.

### **Commerce Commission enforcement**

The Commission, as part of its enforcement role, maintains an active interest in the electricity industry. Immediately following industry deregulation, it undertook an extensive educative programme, which included a visit to all the electricity companies advising them of their obligations under the Act.

Particular emphasis was given to the issue of the terms and conditions for access to lines by other companies wishing to compete with the that company in the retail market.

That approach, along with a number of warnings to companies whose behaviour was seen as being at risk, has generally resulted in most companies imposing access conditions which do not inhibit retail competition. Nevertheless, the actions of some electricity companies continue to cause the Commission concern. It has recently announced that it may take persistently anticompetitive behaviour to court. It is currently investigating the access pricing conduct of one power company and has received complaints about a second which is sufficiently serious to warrant investigation.

## Notes

- 1 66-83 per cent of New Zealand's needs are met by hydroelectric generation, 7% by geothermal generation and the balance by thermal generation.
- 2 ECNZ, Contact and Trans Power operate under the framework provided by the State-Owned Enterprises Act 1986. S4 of this Act states that the principal objective of every State enterprise shall be to operate as a successful business. Nominated ministers hold shares, the enterprises produce annual statements of corporate intent and they operate with commercial structures and incentives. Profit targets and dividends are negotiated between shareholding ministers and the boards of directors.
- 3 Comprising 38 power boards operating under the Electric Power Board Act 1925, 21 municipal electricity departments of councils and two central government-owned authorities.
- 4 The Act provided that, while municipal electricity departments were to prepare establishment plans, ownership of their shares was to be vested in the associated territorial local authority.
- 5 ECNZ supplied information on forecast electricity demand, the available capacity for each power station and fuel costs/water values. This was used to determine the merit order of stations (which could vary significantly depending on hydrological and electricity demand conditions) and to predict the marginal station (i.e. the last station needed to be used to generate forecasted demand). The week-ahead price was based on the marginal cost of the likely marginal station.



# NORWAY

## Description of the Reform

### *The objectives of the reform*

On 1 January 1991 the new Norwegian "Energy Act" entered into force (Law of production, transformation, transmission, sale and distribution of energy). The introduction of the law implied that the electricity sector of Norway was dramatically reformed, by moving from heavy regulation to liberalisation.

According to section 1-2 of the Act, the objective was to ensure that generation, conversion, transmission, trading and distribution of energy are rationally carried out to the benefit of society, having regard to the public and private interests affected.

More specifically, the objectives of the regulatory reform were, among others, to:

- smooth out artificial price differences between different areas and different consumers
- to improve consumers' utilisation of electric power
- increase efficiency in both production and distribution of electric power
- secure efficient expansion of new production capacity, in the right scale and in the right order.

These objectives were to be attained by extensive use of the efficiency enhancing potential of market mechanisms.

### *The previous structure*

The Norwegian electricity system is almost exclusively based on hydro power generation. Total production in 1995 was 122,6 TWh.

Prior to the reform, there were approximately 70 primary producers and 230 distribution companies in Norway. The distribution companies were local monopolies, in the way that it was not possible for the consumers to purchase electricity from other than their local supplier.

With respect to ownership, around 75 per cent of the total production and distribution capacity was owned by public entities (state, county and municipal). Most of the distribution companies were municipal or inter-municipal companies.

Traditionally, there have been strong vertical ties between production and distribution companies in the Norwegian system, either through ownership or long-term contractual arrangements. Prior to the reform, approximately 75 per cent of total consumption of electricity of the private households and commercial sectors was supplied by vertically integrated companies.

Under the former regulatory system the domestic market for electric power could be classified into two categories: the forward market and the spot market for interruptible power. The most important of these was the forward market, with a large number of non-transferable bilateral contracts between

producers and bulk consumers (distribution companies and energy-intensive industries) for the supply of "firm power". Around 90 per cent of total Norwegian power production was sold under such contracts, some of which had fairly long contract periods.

The remaining 10 per cent of supplies was exchanged on a spot market for so-called "occasional power". The market was open only for generating companies and distribution companies with own production. Entry was restricted to producers with an annual production of 100 GWh and above. In principle, the spot market was a device for shuffling water in the waterpower system from producers with excess supply to producers with a need of additional quantities in relation to their contracts. The spot market was also an important instrument for optimising production in the system.

The market was administered and operated by the Norwegian Power Pool (NPP), a power exchange body and national clearing house established in 1971.<sup>1</sup>

Aside from being an early and innovative market arrangement, the occasional power market is also interesting from the viewpoint of representing an institutional and organisational framework for an extended market system. It provided the producers with some familiarity with market transactions.

Prior to the reform, there were substantial differences between the power prices in different regions. In 1989 the highest price was two and a half times as high as the lowest price for a given type of power at a given time<sup>2</sup>. Such differences could lead to undesirable decisions concerning investments in new production capacity: In high-price areas expensive projects could be effectuated while cheaper projects were rejected in low-price areas.

Investments decisions depended on the approval by the authorities, and NVE (The Norwegian Water Resources and Energy Administration) administered the investment schemes. Despite this regulatory system, there was a widespread notion that both the total volume of investment in production capacity and the ranking of the various projects were not efficient. There was a built-in tendency in the system of focusing on the need to secure the supply of electricity regionally, by means of investing in production facilities located nearby. Alternatively, regional supply could have been secured by purchasing electricity on a national market, and thereby inducing perhaps more cost efficient investments in projects located elsewhere.

In addition, in the system of regional monopolies captive consumers carried a part of the risk of investment in new production capacity. The investors thereby faced distorted incentives of investment.

Further, lack of competition made it difficult for the owners to actually evaluate the quality of the management of their companies. It was also believed that competition would lead to economically desirable mergers with respect to increased efficiency in both production and distribution of electric power.

### ***Basic elements of the reform***

To obtain competition in the market for power and to provide efficient production of natural monopoly services, several changes were made in the energy legislation and in the regulatory regime. Below, some of the essential elements will be briefly presented.

### *Abrogation of the local monopolies*

The most obvious element of the reform was the abrogation of the local monopolies of supply. Consumers may now purchase electricity from a wide range of suppliers located in all parts of Norway.

### *Regulation of the grid as an essential facility*

The former local monopolistic distributors were both traders of electric power and owners of the distribution grids. The distributors could consequently protect themselves against competition by refusing other suppliers to sell power through their grid, or by raising the prices for transmission to a "protective" level. It was, of course, also possible to extract monopoly rents from transmission services. To provide the necessary conditions for efficient resource utilisation, it was thus essential to regulate the management of the grid as an essential facility.

### *Common carriage*

The principle of common carriage is the core element of the regulation of all Norwegian transmission grids: national, regional and local. This is obtained through a mechanism in the act, granting so-called area concessions to grid owners. If technically obtainable, the concessionaires are obliged to allow the access of other parties to the grids.

### *Transaction fees*

Another important regulatory task has been to regulate transmission tariffs and transaction fees. Without regulation, the grid owners would have been inclined to set the fees at artificially high levels, to extract monopoly rents or to protect their "home markets".

The following are current (Autumn 1996) maximum transaction fees, regulated by NVE:

Fee pr supplier for selling within the area of a distributor;	4 000 NOK per calendar year <sup>3</sup> .
Fee pr consumer for switching supplier;	200 NOK each time.

In the course of time, electronic tools will probably reduce the transaction costs. The maximum fees may thus be reduced in the future.

### *Transmission tariffs*

Transmission tariffs are regulated on the basis of a system of point-tariffs. The point-tariffs cover all costs of power transmission from the electric power station to the final consumers.

There are two important principles underlying the point-tariff system:

- the consumers need to sign only one agreement (with the local grid owner) to get access to the entire co-ordinated grid system of the country and thereby also to the national market of electric power;
- the point-tariffs are independent of the source of supply. Hence, distribution agreements are independent of power purchase agreements.

The calculation of the point-tariffs is regulated through directives from NVE. At present the regulatory model allows tariffs that guarantee the grid owner coverage of costs over time, including cost allowances from grids on higher levels, and a reasonable return on capital.

The calculation of the tariffs is based on the budget figures of a set of cost elements. The actual figures often diverge from the budget. This will result in either surplus-return (higher return than allowed) or deficiency-return (lower return than allowed). Surplus-return is in its entirety returned to the customers through future tariffs. Deficiency-return is treated correspondingly.

The most apparent weakness of the present system is that the grid owners are guaranteed full coverage of costs at "efficient operations". This concept has proved to be difficult to operationalize in practice. Thereby, the system provides the grid owners with weak incentives for cost efficiency. In addition, the present system guarantees the grid owner a reasonable return on capital. NVE determines the rate of return. The return is calculated on the basis of invested capital. All new investment can be added to the sum of invested capital. Because of the relatively high granted minimum return on capital, this may establish an incentive for excessive investments.

Because of the obvious shortcomings of the existing model, NVE has now presented a proposal of a new model of regulation for the transmission activities. This model will be presented below.

#### Reorganisation of the distribution companies

To make it easier to regulate the distributors and to avoid cross-subsidisation between trade/production and transmission, vertically integrated companies were obliged to split their organisations in separate production/trade and transmission divisions. These divisions must have separate budgets and accounts.

#### Reorganisation of Statkraft

Prior to the reform, the state-owned company Statkraft held a central position as the largest producer, as well as the owner of large parts of the national high voltage transmission grid. As a part of the regulatory reform, the transmission grid was divested from Statkraft and organised as an independent entity called Statnett SF (The Norwegian Power Grid Company). Statkraft was thus turned into a pure generating company.

#### *New markets*

A set of markets have been established since 1991.<sup>4</sup> In the first years of the Norwegian reform, the organised power markets were administered by Statnett Marked, a subsidiary company of Statnett SF. From 1 January 1996, however, the Norwegian and Swedish markets are integrated. The common organised power markets for Norway and Sweden are being administered by Nord Pool, the earlier Statnett Marked, which is now owned 50/50 by Svenska Kraftnät (Sweden) and Statnett SF (Norway). The Nord Pool is located in Norway.

The organised markets are:

- the spot market
- the futures market
- the regulation market

The spot market for power is organised on a daily basis. The market is basically an extension and a refinement of the former market for occasional power. One important alteration, however, is that all interested parties have access to the market, not only the producers. The basic time unit for market clearing and settlement is the hour, implying 24 "price sections" per day/night.

The futures market for power is called "the weekly market", because of the week being the standard time unit for trading and settlement of contracts in the market. The weekly market is a market for future supply of power contracts. The market is organised as a futures market without any physical supplies. When contracts become due, they will be accounted against the daily market. The weekly market is thus a financial market and provides the participants with a hedging instrument.

The market for regulation power has been developed as a response to the need for adjusting the production of the system on a very short notice. Thus, this market is a necessary means to preserve balance between production and consumption on a more immediate basis. In Norway, the participating companies report to the Nord Pool the price and volume capacity combinations which they are willing to offer at each hour. On the basis of this information, the Nord Pool then chooses the cheapest alternative for necessary adjustments in the flow of power. The Norwegian and the Swedish markets for regulation power are not integrated yet, due to capacity limitations between the two countries. The principles for the administration of the markets are, though, similar. The Swedish regulation power market is administrated by Svenska Kraftnät.

At present, there are some 125 companies participating in the markets organised by the Nord Pool, including generators, distributors, industrial companies, power trading companies and brokers. Still the most common way of trading electric power is through bilateral contracts. However, the volume of the organised markets is expanding, relatively to the aggregated volume of bilateral contracts. In 1993, around 1/6 of the total production volume was traded in the organised markets. In 1995 this share had increased to 1/3.

#### *The regulatory institutions*

A new regulatory regime has been established since the regulatory reform, with considerably greater emphasis on economic regulation and competition policy issues.

The Norwegian Water Resources and Energy Administration (NVE) is the main regulatory body, as it was prior to the reform. In the new Energy Act, NVE was given the responsibility for supervision of the power market. NVE is a subordinate to the Ministry of Industry and Energy.

The Norwegian Competition Authority (NCA) is responsible for supervising competition in virtually all domestic markets, including the market for electricity. NCA is a subordinate to the Ministry of Government Administration.

The NVE and the NCA will thus partly have overlapping responsibilities. In its comments to the Energy Act, this was explicitly acknowledged by the Parliament. However, the Parliament did not attempt to draw a distinct line between the responsibilities of the two bodies. Instead, it called for the bodies to develop a set of guidelines on their mutual relationship.

As a response to this, the bodies just recently have concluded a draft agreement on the co-operative relationship. Generally speaking, the agreement constitutes a codification of present practice. The draft agreement is at the moment (mid-1996) awaiting the formal approval of the respective ministries.

The most important element of the agreement is the focus on the necessity of close and frequent contacts, and of the exchange of information. This has been formalised through regular meetings between high level officials, and procedures for mutual assistance and exchange of information in defined categories of cases.

## **Results of the Reform**

### *Effects on the supply side*

#### *Structural changes at the horizontal level*

Generally speaking, the reform has so far not led to significant structural changes in the sector. As mentioned in the first section, there were some 70 primary producers and 230 distribution companies in Norway prior to the reform. These numbers have not changed significantly, although the number of distributors has been reduced to around 200. There has been, however, a trend towards the development of loosely organised collaborations between independent companies. These collaborations have been organised mainly to improve the parties' marketing performance. The NCA has granted exemption from the prohibition provisions in the Competition Act to a number of these collaborations.

The general conception of the structure is that there is an unfulfilled potential for economies of scale, especially at the distribution level. The conservatism of the market is probably partly due to the high degree of public ownership in the sector.

So far, no publicly owned entities have been privatised. This implies that some 75 per cent of total production and distribution capacity is still under public ownership. It is being disputed whether this picture will change over the next few years.

Privatisation may provide the companies with superior knowledge and professionalism. In addition, some politicians are uncomfortable with the fact that ownership of production or trade entities heavily exposes the municipalities and counties to economic risk. Other politicians are, however, opposed to the idea of privatisation, on the grounds that it would be like selling out the "family treasure".

The most likely short term development is that a number of the publicly owned entities will be reorganised as ordinary joint stock companies, though still under public ownership. This will reduce the economic risk for municipalities and counties which are owners of production or trade entities. It will also make the management of the entities more independent of the owners, and thereby possibly in a better position to quickly adapt to a quite complex and turbulent environment. In addition, it will relieve the owners of the direct responsibility of making politically unpopular decisions on price increases etc.

#### *Structural changes at the vertical level*

As mentioned above, one of the core elements of the reform was that vertically integrated firms had to establish separate grid and production units internally. Some critics felt that the reform in this respect was inadequate, due to the potential for cross-subsidising between monopolistic and competitive activities, and the problem of regulating a limited part of the activities in an integrated unit.

The regulating authorities have tried to encourage vertically integrated companies to divest into separate legal entities. So far, we have seen very few examples of this. The issues raised by vertical integration will be discussed in more detail below.

### *Entry*

The principle of common carriage has granted new suppliers access to the transmission and distribution grids. In that way the barriers to entry have been reduced. The naturally high irreversible costs in building new production capacity have not changed, however. In addition, new entrants are still dependent on concessions from the authorities.

Prior to the reform there was excess production capacity in the Norwegian system, making investments potentially unprofitable or highly exposed to risk. The lack of new investment in recent years *could* indicate that the reform has been an efficient instrument in securing that only economically justifiable investments are carried through.

In the trading power market there have been quite a few entrants, both of power trading companies and brokers. These participants played an important role in the first years after the reform, by aggressively taking advantage of price differences between different producers. They also contributed to the educational process of the market, by demonstrating the potential for cost savings to purchasers. During the last months, some of the traders have gone bankrupt. The main reasons being that the prices on the spot market have risen dramatically and that most producers now have established professional sales organisations, making the economic potential for power traders smaller. Power brokers, however, seem to meet a need for objective advisors in the market. The number of brokers is thus still increasing.

One very visible change in the industry is the entry of new professions. Prior to the reform, the sector was dominated by engineers. Since the reform, we have seen the entry of a large number of marketing people, financial analysts, and economists.

### *Effects on the demand side*

The introduction of the regulatory reform in the electric power market in Norway coincided with a number of circumstances both on the demand and supply sides of the industry, which makes it difficult to distinguish the pure market reform effects from other effects. Some circumstances were: mild winters through a number of recent consecutive years, above average rainfall for large areas of the country during the same years, new production capacity being added to the system as a consequence of earlier investment decisions, periods of low demand from the power intensive industries because of low demand for their products in world markets over the business cycle, etc. These factors led in themselves to a downward pressure on electricity prices.

The last year there has been below average rainfall in large areas of the country and the winter 1995/1996 was the coldest winter for many years. In addition, the Norwegian economy has improved dramatically since 1991/1992. One indicator that underlines this is that the Norwegian Stock Exchange index reached an "all time high" in June this year. The direct effect of this has been rising prices in the course of the last months, and the prices are expected to reach peak levels the coming winter (1996/1997).

Although it is difficult to quantify, it is generally presumed that the reform has contributed to lower prices in relative terms. Competition has put a pressure on the suppliers that the consumers obviously have to gain from, through reduced monopoly rents or increased technical efficiency.

Another observation is that the reform seems to have led to more fluctuating prices. An important change in this respect has been the introduction of improved hedging instruments. In the first years of the reform, there was a lack of such instruments. Although a weekly market was established already in 1992, this market had some vital limitations. At the beginning, the market was open only one

day a week, physical deliveries of power were required, the contracts were not negotiable, and the maximum period was six months. Step by step the number of trading days and the maximum period of trade were enlarged. In October 1995 a new weekly market was opened. In this version, the companies may trade contracts for power prices up to three years ahead. The contracts are negotiable and cleared on a daily basis. Thus, the market has become a financial futures market.

So far “consumers” have been referred to as a homogeneous group. Naturally, the reform has had different effects on different groups of consumers. In the first years high transactions fees captivated the minor consumers. The largest consumers<sup>5</sup> were the first to obtain lower prices on electricity. From 1 January 1995 the maximum transaction fee a distributor may charge a customer for changing supplier, was reduced to 200 NOK. From that moment the market was in reality open to small consumers such as individual households. The result can be observed at present, in the form of decreased differences in prices of electricity between user groups in the various regions.

## **Challenges to the Regulatory Bodies**

### ***Improvements of the model for the regulation of transmission and distribution***

#### *Background*

As mentioned above, the present system of regulation of the grid system is not satisfactory. The existing model provides weak incentives for efficient operation or investment. Indeed, the model may induce excessive investment.

Various studies have indicated that there is a large potential for increased efficiency in transmission and distribution. The new model suggested by NVE is intended to materialise this potential.<sup>6</sup>

The aim of the regulation is to get an effective market of electric power and to get correct costs of transmission. By correct costs of transmission, it is understood effective operation/maintenance, cost-effective investment, and security of supply adjusted to the society's willingness to pay for this service.

NVE has defined a set of criteria for the regulation of transmission and distribution:

- Equal treatment of all grid owners on all levels
- Neutrality in relation to ownership and organisation
- Comprehensive and practicable regulation

#### *The suggested new model*

NVE will, for each grid owner, define a fixed individual cost limit. This limit will comprise costs of operation, maintenance, depreciation and transmission losses. Return on capital and cost related to grids at higher levels will not be included in the basis for the calculation of the cost limit. Costs from grids at higher levels will be charged to the customers.

Further, the cost limit for each grid will be based on historical cost figures, budget figures, the actual configuration of the grid, inflation, and NVE's requirement for increased efficiency. NVE may exercise some discretion in the final judgement. Exactly how these costs will be calculated, has at present not been defined.

Each regulation period is suggested to have a five years duration. However, NVE can adjust the cost limits on an annual basis. Adjustments can result from new information from the transmission companies regarding e.g. mergers and changes in the grid size. Further, the limits can be altered on NVE's own initiative, based on e.g. unexpected changes in the rate of inflation or the demand for growth in productivity.

NVE will stipulate an annual rate of return on invested capital. This return is called the NVE-interest<sup>7</sup>. A grid owner can not automatically add new investments to the rate base. The grid owner has to demonstrate the cost-effectiveness of the investment to NVE, before it can be added to the rate base.

The following will initially form the basis for the transmission tariffs (for the first year) in the new model:

Cost limit  
+ NVE-interest rate on capital

However, these elements do not constitute all elements that contribute to the final tariffs charged to the customers. In subsequent years, two additional elements will be taken into consideration which in reality influence the level of tariffs in the first year.

Firstly, the grid owners' actual costs may turn out to be different from the cost limit set up initially. If a grid owner obtains lower costs than the limit, 50 per cent of this "profit" must be returned to the customers in the form of lower tariffs in subsequent years. To introduce an incentive for cost efficiency, the grid owner will be allowed to retain the remaining 50 per cent. If the costs become higher than the limit, these excessive costs will be treated correspondingly.

Secondly, actual income may differ from allowed income<sup>8</sup>. One possible cause could be that the volume of electricity transmitted through the grid was underestimated initially. This creates a surplus income. All surplus income must be returned to the customers in the form of lower tariffs the following year. Deficiency returns will be treated correspondingly.

The allowed return will be the NVE-interest rate on capital, plus/minus 50 per cent of the changes in relation to the cost limit. To avoid extreme cases of return, NVE will define minimum and maximum levels of allowed return.

### ***Vertical integration***

In the discussion prior to the reform it was first recommended to *increase* vertical integration between production and distribution companies in the market, creating some 20 county wide vertically integrated companies. The argument for such a policy was that increased vertical integration would lead to a simpler organisational structure in the sector. It was also believed that vertical integration could result in some efficiency gains.

This view was, however, disputed among others by several expert academics. The academics saw several drawbacks with regard to increased vertical integration in the market. Their arguments were based on the fact that transportation of electricity through the grid is characterised as a natural monopoly with increasing returns to scale as opposed to production with increasing unit and marginal costs. It should be added, that there has been produced little empirical evidence in support of the assumed efficiency gains from vertical integration.

Two main arguments were put forward concerning the possible adverse effects of vertical integration:

*A "thin" spot market;* vertical integration could lead to low volumes on the spot market, which could result in inefficient price formation, fluctuating prices and reduced credibility of the market mechanism.

*Cross subsidisation;* the possibility of shuffling costs from production or trade related activities to transmission activities in vertically integrated companies could lead to problems concerning regulation, and it could also affect competition in the market.

In the end, the (former) Ministry of Oil and Energy, in its proposal to the Parliament, argued that increased vertical integration did not promote the development of a effective energy market. The Ministry specifically mentioned that the functioning of the market place could be threatened by vertical integration, because the vertically integrated firms would have small incentives to offer their power to other than their own distribution company.

The Parliament supported the suggestion of the Ministry in this respect, but did not take any actions to reduce the number of vertically integrated units in the electricity market. As mentioned previously, the Parliament chose to address the issue by ordering the separation of production and distribution activities within vertically integrated entities. A question that is being debated now, is whether this decision was sufficient to solve the problems related to vertical integration that were put forward at the outset of the reform.

#### *A "thin" spot market*

As mentioned earlier, approximately 75 per cent of the energy consumption was, prior to the reform, supplied by vertically integrated companies. This could indicate low volumes to be traded over the market place. One implication of a "thin" spot market is that price fluctuations could be quite common. Price fluctuations in a low volume market could be the result from (natural) variations in demand and supply. But a "thin" market would also become vulnerable to anti-competitive actions which could affect the prices.

However, in 1995 approximately 33 per cent of electricity production in Norway was traded over the markets organised by the Nord Pool. Thus, the organised markets seem to have gained ground so far. The obligation of splitting vertically integrated companies in separate production/trade and transmission divisions may have influenced the volumes traded over the organised markets in a positive way.

In addition, it must be remembered that the spot market is vital for the producers in order to balance own production and demand from contracted customers. A distorted spot market could thus be contrary to the interests of the producers.

#### *Cross subsidisation*

The existing model for regulation of transmission and distribution gives an incentive for vertically integrated companies to move costs from market based activities over to the transmission and distribution activities. This results from the fact that the companies are secured full coverage of costs related to transmission and distribution.

The proposed new model for regulation of transmission and distribution will reduce this incentive to move costs. However, the incentive will still exist.

The distributors report their costs concerning transmission and distribution activities to the NVE. Based on these reports the NVE calculates the maximum tariffs for the transmission and distribution activities for each distributor. It is almost impossible for NVE as a regulator to unveil a distributor which e.g. reports sales related costs as distribution costs. Thus, the problem of asymmetric information gives the NVE a regulation problem as long as vertically integrated companies have the incentives for cross subsidisation. This problem could be reduced if distribution and production/trade were separated into different entities, and not just as different divisions, or if the incentives for cost shuffling were further reduced.

The surplus from the transmission activities may be used to subsidise the supply activities. A recently published report concluded that low electricity prices still is the most central goal for the distribution companies, due to public ownership<sup>9</sup>. This version of cross subsidisation does not necessarily influence the level of rivalry between vertically integrated companies negatively. It may, however, lead to a competition distortion vis a vis non-integrated entities. The cross subsidising will thus lead to distorted prices of electricity, mainly because of the regulation problem, but also as a result of the competition problem.

On this background it does not seem appropriate to conclude that the existing level of vertical integration does not affect competition between suppliers of electricity in Norway. The problems concerning cross subsidising and obtaining information seem mainly to constitute a problem with regard to an efficient regulation of the transmission grid. From a regulatory perspective, vertical separation between production and transmission in two different entities would thus have been preferable to the separation into different divisions.

### ***Enforcement of competition act***

#### *Horizontal integration producers*

As mentioned above, there are about 70 independent producers of electricity in Norway. Subsequent to the reform, a lot of these felt a need to improve their sales organisations. At a particular time, it looked as if most of the major producers, excluding Statkraft, would form themselves into three different producer associations. The Competition Authority was concerned of the fact that the formation of such associations would reduce the number of independent players in the market, thereby raising the level of concentration significantly.

To develop a policy towards these structural changes, the Authority hired an independent research institute to make a report on the possible effects on competition of increased market concentration. In short, the conclusions in the report were that a significant increase in the level of concentration could potentially lead to reduced competition. The market is characterised by relatively homogeneous products, marginal costs are relatively low compared to fixed costs, the participants “meet” daily in the spot market, barriers to entry are considerable and there were capacity constraints and regulations on imports. These characteristics contributed to making the market vulnerable to oligopolistic interaction. In addition, there were no indications of significant efficiencies following from the collaborations between the producers other than those which could be realised through an efficiently functioning electricity market.

Eventually, only one of the associations became a reality. It was granted an exemption from the prohibition provisions of the Competition Act, due to its relatively minor importance and the subsequent integration of the Norwegian and Swedish markets.

### *Price leadership*

In October 1992, the prices on the spot market from one day to the next rose considerably. Several large purchasers were alarmed by this, claiming that there was no economic justification for this increase. The event took place in a situation of excess capacity and depressed spot prices. The NCA investigated the case, but no violations of any prohibition provisions were found. It was, however, documented that Statkraft, the state owned dominant producer, prior to the price increase had publicly stated that it would not sell electricity below a given price. Apparently, the competitors responded by raising their prices to that minimum level. The prices on the spot market remained at this level for several months.

Price flagging by a party with potential market power as a price leader was found to not be in accordance with the objectives of the Competition Act. The Authority reached an understanding with Statkraft that this specific practice would not be repeated.

### *Vertical restrictions exclusive dealer contracts*

In the first years of the reform, private households were in practice excluded from the market, due to the high level of transaction fees related to switching to another supplier. These consumers had to rely on their local distributors acting as efficient agents on their behalf. Some of the distributors were "locked in" by long term supply contracts with producers. These contracts had been negotiated prior to the reform, and were nonnegotiable over a period as long as 25 years.

The Competition Authority received a number of complaints about such contracts. The Authority found that the effect of some of the contracts was that relatively small consumers within the area of distributors with such contracts in reality would not profit from the reform. This standpoint was communicated to the parties involved, and in the end basically all the contracts were re-negotiated.

The transaction fees related to switching between different suppliers have later been regulated down to 200 NOK + VAT (as of the autumn 1996). Thus, even small consumers will not be dependent of their local distributor. In the present context, long period contracts would probably not be detrimental to competition.

### *Rational consumers?*

Prior to the reform, the consumers had no alternatives to the local supplier. This implied that the consumers had no experience as market participants. In addition, the electric power market is rather complex. The implication of this was that it was not obvious that the demand side of the market would function efficiently. The newly established brokers have, however, played an important role as advisors during the first years after the reform. The Competition Authority has addressed the consumer education matter in two different ways.

Firstly, the Authority has issued detailed instructions on how distributors shall specify their bills. The instructions are intended to enhance the possibilities of making comparisons between different suppliers.

Secondly, the Authority has published surveys of the prices offered by the various suppliers. These surveys illustrate the degree of price variations and provide the consumers with information on where to find the best offers. Recently some newspapers and magazines have published similar surveys.

## Other Issues

### *The process of regulatory reform*

Norway was one of the first nations in the world to deregulate the power sector. At present, there seems to be near consensus on the actual success of the reform. This may be surprising, given the dramatic implications of the reform. A number of explanatory factors can be mentioned.

Firstly, the industry was in need of reform. The situation prior to the reform was characterised by excess production capacity. There was a widespread opinion that some of the investments in new production capacity were not economically efficient.

Secondly, the reform had the most obvious consequences for the power generation, while the distribution part was still defined as a natural monopoly. And even if most producers were opposed to the reform, hydro power generation does not imply as large a staff of employees as does distribution. Because of this, the reform was not opposed by the most important labour unions.

Thirdly, a spot market had been in place for some twenty years. Although access to this market had been limited to producers, the players had some experience in coping with the forces of the market.

Fourthly, the political aspects were skilfully orchestrated by the relevant authorities, the main decision makers being the Ministry of Finance and the (former) Ministry of Oil and Energy. An important step in the process was that the ministries hired a Norwegian research institute (SNF). This institute was asked to develop the general institutional framework for a market based system. The reports from the institute provided the decision makers with well founded practical solutions, as well as academic legitimacy.

Finally, it is possible that some of the players were really not able to conceptualise the dramatic nature of the reform. As already mentioned, the reform was implemented in a period with depressed prices. A number of the producers had recently invested heavily in new production capacity. These producers were bound to experience financial difficulties in a liberalised market. In spite of this, the reform was not strongly opposed by the owners.

This not to say that the reform has been totally non-controversial. In contrast to similar reforms in other countries, the Norwegian reform was formally implemented overnight, that is without giving the participants time to adjust to a new environment. In practice, however, the reform was implemented over a period of three to four years. For example, the obligation of splitting vertically integrated companies into separate production/trade and transmission divisions was put into force from 1993. The households, furthermore, were largely excluded from the market until 1995 due to high transaction fees.

In the first couple of years, the reform was under a certain amount of political stress. At the moment of deregulation, demand for electricity was low due to a general recession in the Norwegian economy. Unusually wet and mild climate contributed to extremely low prices on the spot market. The result being that a number of the producers and distributors ran into financial difficulties. Indirectly, this posed a financial threat to a large number of municipalities and counties.

In November 1992 the Government proposed an amendment to the Energy Act, the core of the amendment being that small customers should have restricted access to transmission grids. The proposal was turned down by Parliament, basically because of the possible negative consequences to small and medium sized enterprises.

The present situation is practically the opposite of the situation in 1992. Electricity prices are approaching peak levels, due to a thriving national economy and extremely dry and cold weather.

### ***Privatisation***

In the process of regulatory reform, the question of privatisation is usually being addressed. In the case of the Norwegian electricity reform, however, this topic was hardly discussed at all. In Norway there is a long tradition for public ownership of natural resources like waterfalls. In addition, infrastructural activities like the supply of energy fall traditionally within the domain of public authorities. Because of this, a privatisation scheme for the electricity sector would probably not have been politically acceptable.

The preliminary results of the reform indicate that privatisation is not a necessary element of regulatory reform. The structure of the Norwegian market, with a large number of mainly publicly owned but independent producers and distributors, has seemingly created a climate for rivalry between the various participants.

Nevertheless, the incentives in publicly owned entities to reach efficiency goals might not be as obvious as in private owned companies. Partly due to this, the degree of public ownership may have slowed down the process of restructuring the supply side of the sector. For example, a market based system extends the operations a distributor has to perform; negotiating contracts, operating in various markets etc. With a structure of 200 distribution companies, it is quite obvious that some of these units are of a suboptimal size. So far, the distribution companies seem reluctant to adhere to this reality by merging with other distributors. Instead, the units tend to compensate by co-operating on a limited basis with other distributors, forming alliances, or by purchasing services on the market. Such solutions may be satisfactory second best solutions, given the structure of ownership. They do not, however, offer a solution concerning the need to optimise the size and utilisation of the transmission grids.

### ***Statkraft as a dominant enterprise***

When designing the reform, there was a discussion of whether to split the state owned enterprise Statkraft into several regional entities. In the end, it was decided that the production activities of Statkraft should remain within one single firm.

Statkraft has around 28 per cent share of the average annual production in Norway. The company controls around 38 per cent of the total capacity of water storage and 31 per cent of installed capacity. As much as half of the production capacity of the company is at present reserved for power intensive industries at terms stipulated by the Parliament.

The size of the activities of Statkraft provides the company with some degree of market power. The company seems to have the ability to influence the price level on the spot market, at least for a limited period.

As mentioned above, Statkraft at one occasion flagged their minimum price for selling power on the spot market and by this acted as a price leader. So far, this event stands out as an isolated incident.

Statkraft was, prior to the reform, responsible for the organisation of the trade of electricity between Denmark and Norway. The company retained this responsibility after a re-negotiation. At the same time the NVE was set to supervise Statkraft. Some critics have questioned the wisdom of allowing

the largest domestic player to organise exports/imports from one of the two main trade partners of Norway.

Other critics have focused on the relationship between Statkraft and its owner, the Ministry of Industry and Energy. The industry-specific regulator, NVE, is a subordinate to the same Ministry. This makes indirectly the Ministry both a regulator of and a participant in the market through its ownership. This may have negatively influenced its credibility as a neutral body.

## **Internationalisation**

From 1 January 1996 Sweden decided on a regulatory reform of the electricity sector similar to the Norwegian reform. At the same time the borders were opened for a joint Norwegian-Swedish electricity market. As mentioned above, Sweden and Norway now jointly organise the various electricity markets. In the future, the common Norwegian-Swedish market is expected to be extended to include Finland. Furthermore, both Sweden and Norway have cables for power exchange with Denmark. Norway is also planning cables for power exchange with the Netherlands and Germany.

The integration of different national electricity markets encompasses complex challenges to the regulatory bodies. The regulation of the transmission grid must secure market access for the participants, as well as a reasonable return on investment to the grid owners.

From a competition act enforcement point of view, the challenges may not be very different from those posed by other international markets. Strict national enforcement of competition acts may be inadequate, due to difficulties in information gathering or effective sanctioning. In the Scandinavian context, such challenges are partly met by the provisions of the EEA-agreement. The agreement provides the EU Commission and the EFTA Surveillance Authority with enforcement powers. These powers do not, however, cover all relevant aspects of the supervision of the integrated market.

Consideration should also be given to the fact that at least five different regulatory bodies are involved in the regulation of the common Norwegian-Swedish market. In addition to the electricity regulation bodies and the competition agencies, the financial regulatory bodies of the two countries will also have a role to play in the electricity markets, because trade in financial futures also needs to be supervised.

Thus, the various authorities of Norway and Sweden have found it necessary to establish a bilateral relationship of co-operation, as a response to the introduction of the Norwegian-Swedish electricity market. The Swedish regulatory body (NUTEK), NVE as well as both the competition agencies of both countries will participate in this co-operative relationship. It will also be considered to have the financial regulatory bodies participate. The group of authorities will address matters like rules for the organised markets, regulation of transmission tariffs, exchange of information, co-ordination of competition act enforcement etc.

## Notes

- 1 NPP also operated the main grid in Norway and administered the Central Grid Settlement.
- 2 Ot. prp. nr. 43 (198990), about law of production, transformation, transmission, sale and distribution of energy.
- 3 Exclusive VAT.
- 4 Institutionally, spot and futures markets were established as early as in the first part of the seventies. The functioning of the markets, however, has been radically altered in the process of reform, making it relevant to speak of “new markets”.
- 5 The largest consumers being mainly private enterprises, parts of the public administration and some organised groups of households.
- 6 The proposed new model is presently being made subject to a formal hearing. The new model is expected to come into force by the end of 1996.
- 7 The size of invested capital has already been defined for all Norwegian grids.
- 8 Allowed income = Allowed return + actual costs
- 9 ECON 36/96: "Goals and decision structure in the Norwegian distribution companies."

# POLAND

## Introduction

Following the nationalisation of the electric power industry after the Second World War, its administration was quickly centralised. Priority given to the industry by the national government over the subsequent 30 years allowed economies of scale to be well-utilised, i.e. the building of a modern industry with large generating entities and the development of a transmission grid. Artificially low prices of electric energy, introduced in the 1960s and 1970s, quickly resulted in excessive use of energy in the economy and a related deficit in capacity (mainly in the areas of generation and transmission). In spite of central subsidies to investments, the power deficit continued and the related anxiety determined the management style until the end of the 1980s. (This concern remains an important factor.) This model of management became particularly painful in the early 1970s with the return to the arbitrary decisions on cut-off of energy supply to customers selected on the basis of their priority in the economy. In spite of many attempts, economic and financial imbalance in the industry and the related threat of power deficit prevented wider management decentralisation until the early 1990s. The sudden shift to market prices and actual cost basis and geopolitical changes resulted in a drastic decline in the level of energy consumption, leading to a growth in reserve capacity to a level equal to the highest reserve capacities of the industrialised West European states. This change provided a starting point to a reform of the electric power sector with the purpose of maintaining an economic and financial balance through a competitive and decentralised market.

## System and Organisation of the Power Industry

The Polish power system, including generation, transmission, and distribution subsystems, is the largest in Central Europe with more than 33 000 MW of power installed in power plants and thermal-electric power stations belonging to the generation subsystem. Out of this figure, 28 000 MW is concentrated in ca. 20 large power plants and thermal-electric power stations.

The transmission subsystem consists of interconnected high voltage 400 kV and 220 kV networks (ca. 4 000 km and ca. 8 000 km, respectively) supplying the distribution network via more than 80 large transformer stations.

The distribution subsystem consists of 110 kV (ca. 30 000 km) networks; medium voltage (MV) networks, mainly 15 kV and 20 kV (ca. 260 000 km); and low voltage (LV), exclusively 0.4 kV, networks (ca. 360 000 km). 110 kV distribution networks supply more than a thousand stations linking them to MV networks (including those supplying directly large industrial customers and a part of railway traction). MV networks supply more than 160 000 stations linking them to LV networks (including networks directly supplying large industrial customers, railway traction, and large municipal consumers and public utilities).

The power industry in Poland serves 14.5 million contracts for electric energy supply, including 370 contracts with large industrial customers supplied directly from the 110 kV network (more than 30 per cent of the total electric energy consumption) and 20 000 contracts with medium-size industrial customers, Polish railways, and large municipal customers supplied directly from the MV network (share slightly

below 30 per cent of the total electric energy consumption). The remaining contracts were made with small customers, mostly households, supplied from the LV network.

The power industry is divided into three subsectors: generation, transmission, and distribution corresponding to the three infrastructure subsystems of the whole power system. In addition, a fourth subsector will start to develop: electric energy supplies to end users. Initially, the supply subsector will consist of distribution companies and a limited number of power generation companies. Generators' share will gradually increase and the subsector will be populated by various commercial agents.

The transmission subsector is represented by Polish Power Grid Co., Inc. (PPG). PPG is the owner of the transmission network assets and holds a majority share in Pumped-Storage Power Stations Co., Inc. responsible for a major part of reserve capacity (ca. 1 600 MW) of the Polish power system. PPG represents ca. 10 per cent share of the total assets of the Polish power industry.

The distribution (and supply) subsector consists of 33 distribution entities, all of which are joint stock companies. Distribution companies account for ca. 40 per cent of the total assets of the Polish power industry.

The generation subsector of the power industry consists of large energy generators ("backbone" or "systemic" power plants) and thermal-electric power stations (local entities). Among large system power plants 12 are state-owned and four are joint stock companies. All thermal-electric power stations (19) are joint stock companies. Generation companies represent ca. 50 per cent of the total assets of the Polish power industry. Lignite-based power plants (ca. 42 per cent of power output) are related to lignite mines in terms of technology. These four lignite mines are independent state-owned enterprises.

### **Structure of the Sector in the Future**

In October 1995, the government presented a Draft Law on Energy to the Parliament. The bill concerns the energy industry in general rather than the electricity sector alone. The Law on Energy proposes solutions, the implementation of which is a prerequisite for further reforms in the power industry. One particularly important provision is the separation of three essential functions of the power industry, i.e. energy policy, regulation, and ownership. According to the bill, the Minister of Industry and Trade will be responsible for energy policy. The Energy Regulatory Agency (reporting to the Prime Minister) will be responsible for regulation in the power (and gas) industry. Ownership of power industry companies is not governed by the Law. As a result of abandoning the public utility formula, the Law on Energy proposed by the government creates conditions for the expansion of electric energy companies into non-traditional business areas. Licensing is to provide a safeguard against subsidising such additional business by the core operations. Full deregulation of the power (and gas) market will be ensured by third parties' right to access the grid, the gradual implementation of which is allowed by the proposed bill. The Energy Regulatory Agency (ERA) will protect the customers' right to cheap electric energy (and gas).

No actions are intended to stimulate changes in the organisational structure of the distribution subsector. The only constraints concern mergers of too many companies.

Distribution companies will be allowed to establish syndicates for the development of local electric energy markets, particularly for financing joint generation projects on such markets and for financing a policy of rationalisation of energy consumption by industrial customers as a part of support for the regional restructuring of the economy by means of electric energy supply contracts.

After implementing the licensing programme, network services provided by distribution companies (which will be supervised by ERA, maintaining the principle of cost transparency separately for 110 kV, MV, and LV networks) will be formally separated from electric energy trade, which is planned to become fully open to competition at a later time.

All backbone power plants with state-owned enterprise status will soon be transformed into single share-holder joint stock companies of the State Treasury. Mergers of large power plants will be prevented as a measure to maintain a necessary level of decentralisation and competition. To protect the development of competition, a list of nine specific power plants that will not be allowed to merge has been developed. Small power plants and thermal-electric power stations will be free to merge.

Small power plants and thermal-electric power stations are free to choose whether or not to merge with any unlisted power plant and whether or not to conclude long term or special contracts with PPG (on the backbone market) or with a relevant distribution company (on the local market). Lignite mines will be also transformed into single share-holder joint stock companies of the State Treasury. Commercial relations between mines and power plants will be regulated by long-term fuel supply contracts meeting legal standards required from the point of view of privatisation of the power plants. In parallel, the government will develop conditions allowing the creation of capital links between power plants and mines.

The efficient operation of PPG is crucial for effective development of the electric energy market, the maintenance of the necessary level of energy security of the state and the ability to respond to macroeconomic and external factors. This is the reason why PPG will remain a wholesale trade agent on the backbone market for four or five more years. It is assumed that distribution companies prepared to operate on the new terms, i.e. ready to accept their share of long-term contracts, will be allowed to trade without PPG's intervention. It is also assumed that the total withdrawal of PPG as the agent in the domestic trade will take place within four to five years, i.e. after the transfer of its all obligations and liabilities under long-term contracts (upon approval by investors and lenders) to distributors and, possibly, some large customers. PPG will remain active in foreign trade (except cross-border traffic) until enactment of international regulations.

## **Economics and Finance**

Since early 1995, the power industry has a new wholesale market. The key components of the market include: 1) tariff applied to trade between PPG and distribution companies uniform for all companies, reflecting the structure of electric energy production costs through diversification of rates charged for electric energy depending on time of day (night and morning peaks versus the remaining part of the day), weekdays versus holidays, and summer versus winter seasons; 2) transmission fee including a charge for using the transmission system (system control, connection to the transmission system, transmission infrastructure) and fees for transmission losses; 3) contracts between PPG and generators: long term (to create a basis for financing large investments) and medium term (to stabilise the fuel market for the purposes of electric energy generation); in addition, a pool market is prepared to speed up the creation of competition; 4) the rule of alternative costs in purchases of electric energy produced in combination with heat from thermal-electric power stations. At this stage, implementation of geographically diversified tariffs for end users based on individual cost calculation by individual distribution companies is the most urgent task.

## Pricing Policy

A package of executive acts to the Law on Energy, the drafts of which have been mostly prepared, will allow for the rapid implementation of new solutions and removal of the existing barriers to reforms of the power industry. The principles of power industry regulation (supervision) and licensing implemented by ERA will ensure an adequate level of state intervention, energy security, development of competition, and balancing of interests of power utility owners and end users.

Prices charged by power generators will become increasingly dependent on the competitive market to emerge during the forthcoming five to six years. They will also take account of the slower pace of increase of prices for end users necessitated by macroeconomic factors. All generators will compete on the wholesale contracts market for current and future supplies. In addition, all power plants with steam generators and, in the future, also large peak sources (pumped-storage power stations, gas power plants, etc.) will participate in the pool market in parallel to the contract market. Competition on these markets will be the principal price regulator. ERA's role in this area will be to supervise compliance with license terms and regulation of the competitive market. Price developments on the pool market will be a basis for the existence of a "backup" contract market. At the same time, a strong basis will be provided by prices established using cost accounting methods (marginal costs in optimised domestic and regional development programs). Until electric energy prices are based on economic costs, the major part of energy will be purchased under medium term contracts for prices based on standard costs.

Electric energy sold by generators producing it in combination with other products (combined with heat for thermal-electric power stations and with water for pumping-storage power stations) has to be price-competitive compared to energy generated by steam power plants and peak power stations. Therefore, purchasing prices of electric energy from combined sources will be determined by avoided costs (established on the basis of long-term marginal costs). As a temporary measure, a formula for alternative costs will be applied in medium-term contracts (average prices for steam sources in medium-term contracts).

Pursuant to the draft Law on Energy, the government reserves the right to instruct individual distributors to purchase obligatorily small quantities of electric energy produced from renewable sources at prices profitable to the respective investors. Distributors will take into account such purchase when establishing their tariffs.

Charges for electric energy transmission through 220 kV and 400 kV network, system control, and wholesale trade will be based on long-term marginal costs or standard costs and will be price-indexed.

Charges for electric energy transmission (transit) through 110 kV and lower voltage networks will be determined as for 220 kV and 400 kV networks and regulated in a similar way. Charging individual customers or customer groups for the costs of transit will eliminate their mutual subsidising.

Charges for backbone services should be determined by a competitive market. During the transition period, prices may be based on standard costs.

During the transition period, distribution companies, large customers, and trade agents will buy electric energy from the transmission network (220 kV and 400 kV) according to the wholesale tariff. A wholesale price will be a resultant of the purchasing price on the contract market and on the pool market. Purchases from local sources may be subject to the wholesale tariff in the transition period. Purchases of electric energy by distribution companies from their own sources will be limited and supervised by ERA.

As the price for the end customer comes closer to an economic level (stabilisation expected in four to five years), purchases under the wholesale tariff will be eliminated. Distributors, large end users, and trade agents will be able to purchase electric energy on the contract and pool markets.

Prices for end users with peak power consumption over 5 MW may be negotiated on a case-by-case basis with any supplier, transmission fee considered. The government reserves the right to reduce the consumption threshold as the power market becomes more stabilised; no such reduction will take place before the year 2000.

Other end users will purchase electric energy from distributors active on their respective areas according to tariffs developed by such distributors and approved by ERA. Tariffs should reflect the structure of costs related to energy supply to individual user groups.

Investment expenditures related to the connection of a new user or supplier to a transmission or distribution network should be covered by such customer/supplier. By means of individual agreement, the network owner may charge the cost of capital investments to customer/supplier over a longer period of time.

## **Rules of the Wholesale Market**

The wholesale market, having the largest effect on prices, will be subjected to the market economy first. Market regulation rules should stimulate competition and warrant reasonable profits to efficient generators. In addition, the market has to ensure supplies of energy to all distributors, large customers (with peak power consumption over five MW), and trade agents on equal footing. Equal access rights to the sales network have to be provided to generators too.

Because of technological and organisational factors, the wholesale market can be divided into the backbone market and local (regional) markets. The voltage of electric current bought/sold is the border line. 220 kV+ purchased/sold energy is governed by the rules of the backbone market. Local generators will also have the right to sell/buy lower voltage energy on the backbone market.

The wholesale market will be the main pricing area and it will consist of two parallel sections: the contract market and the pool market.

The pool market, as the main price regulator on the generation side, will be obligatory to generators and customers selling or buying electric energy via the transmission grid (220 kV+). A large share of this market in the total traffic (60 per cent at this point) will ensure sufficient competition. Prices on the pool market will be established on the basis of generators' sale offers, selected in lowest price packages with no network or system limitations (target formula of backbone marginal price and temporary formula of the sum of offered prices). Additional payments for power declared in the offer, the amount of which will depend on the relation between the sum of power offered (declared) and consumed by the users, will constitute an equivalent also for those generators who do not participate in production. This will ensure a necessary level of current reserves to maintain supply and demand balance (technological minimum of six to eight per cent at present; after establishing stronger links with neighbouring countries, the reserve level may be reduced).

The backbone contract market will have the following objectives: stabilisation of the financial situation of companies participating in that market, diversification of risk in energy trade, covering demand, allowing for building tariffs for longer periods of time (minimum six months). The following

contract types are proposed: long term, medium term, and short term. Medium and short term contracts may be traded on commodity exchanges at a later stage.

Long term contracts will be designed to reduce the risk to investors (and lenders) who build or modernise generating units and risk of customers (including distributors) related to demand coverage and level of prices over a longer time horizon. As such, they cannot be traded at exchanges but they can be transferred to distributors by way of negotiations with PPG.

Medium term contracts are the key stabiliser of the financial situation of companies participating in wholesale trade. Initially, prices in these contracts will be based on standard costs; at a later time, they will rely on pool market information. The government reserves the right to instruct the purchase/sale of a major part of energy by means of this type of contract during the transition period. The provision is essential for the smooth resolution of issues related to liquidation of some hard coal mines and certain generators.

Short term contracts (from six months to two years) will be required by distributors as a measure to reduce risk in building tariffs for obligatorily supplied customers.

Income/expenses related to the sale/purchase of energy on the backbone market will be a resultant of both markets: pool and contracts. It is expected that the actual income/expenses to be regulated by the pool market will be equal to ca. 20 per cent in the initial period. Correlation of payments on both markets will be ensured by a system of differential contracts.

Purchase/sale of electric energy on local (regional) markets will be governed by the contract market rules. Where appropriate conditions exist (e.g. Silesia) local pools may be established. Individual distributors will be obliged to transmit electric energy through their own networks to another distributor or large customer against a fair charge.

## **Regulation**

The methods of supervising (regulating) the power industry will evolve with the electric energy market. At this stage, supervision will be ensured by the Minister of Industry and Trade (wholesale prices) and the Minister of Finance (prices for end users). In the future, all the major functions will be assumed by ERA.

ERA's primary responsibilities will include: protection of interests of end users, ensuring profitability of power companies and certainty of supplies in the long term, and stimulating growth of competition.

## SLOVAK REPUBLIC

The current status of the organisational arrangements of the Slovak industry of electric power is as follows:

- Slovenské elektrárne Bratislava, joint-stock company, which ensures generation and transmission of electric power and sales of electric power to distributors. Until November 1, 1994, when the enterprise underwent the transformation from Slovenský energetický podnik, state-owned company to the joint-stock company, this enterprise had had the character of a state-run firm consisting of nine branch plants. Currently Slovenské elektrárne, a.s., generates electric power which accounts for around 84 per cent from the total production of electricity in the Slovak Republic.
- regional power distribution companies: Západoslovenské energetické závody Bratislava, state enterprise, Stredoslovenské energetické závody Zilina, state enterprise and Východoslovenské energetické závody Košice, state enterprise. These distribution companies ensure the purchase of power from Slovenské elektrárne, a.s., distribution and sales of electric power to the end users.

The Act No 79/1957 Coll. of Laws on Generation, Distribution and Consumption of electricity (Electrification Law), which is still in force, establishes the key legislation governing the operation of single pieces of the chain ranging from the manufacturer to the end user.

The current status of knowledge asserts that transmission and distribution of electricity and gas fulfil the criteria for the definition of natural monopoly. The main obstacle of their transformation is the fact that until now there is no unambiguous system for regulation of the single subjects in Slovakia. In Slovakia, the state interferes in this sphere applying energetic policy and certain, even though non-transparent fashion of regulation.

The technical part of regulation is administered by the competent ministries, while the price regulation is carried out by the Slovak Ministry of Finance. In the view of the Antimonopoly Office of the Slovak Republic this way of regulation, however, does not take into consideration to the full extend specificities of natural monopolies, and does not enable to carry out the regulation to the full extend after the fashion of the countries with functioning market system, either. Uncertainty and non-transparency which are connected with this kind of regulation become barriers to successful privatisation and deter potential foreigners from investments.

The now system of regulation does not push towards cutback of the number of natural monopolies, either, it does not encourage the incentives of regulated subjects in striving for higher effectiveness and good quality production and it does not provide entrepreneurs with certainty via working out steady rules of regulation.

Nowadays the process of the preparation of appropriate legislation has been running on several levels. The Ministry of Economy of the SR has been drafting a law on economy of power. The Ministry declares that state regulation in this sector is going to be consummated through awarding state licences and approvals of modernizations and revamping of facilities and new investments in the field of generation,

transmission, distribution, mains and transit of power and gas from the perspectives of purpose, effectiveness, utilisation of natural resources, influence on operational reliability, good quality and steadiness of supplies of these kinds of power and systems and from the perspective of impacts on the environmental surroundings.

According to the new "Law on prices" which took into force in January 1996, Ministry of Finance will be in charge of setting prices, rates and terms of tariffs for single sorts of power, evaluation and providing credit guarantees for investments and reconstructions. Hence, in this sense regulation embodies:

- determination and alterations of prices, rates and conditions of rates
- determination of binding conditions of production, supplies and purchase
- determination of economically justifiable costs and reasonable profits, including assessment of the scope of investments to be projected into prices and rates.

When compared to the present state, the adoption of these proposals does not mean any more substantial change and, in principal, it preserves the previous powers of single sectors.

On the other hand, the Antimonopoly Office of the SR prepared a legal amendment of regulation of the natural monopolies which by its approach and focus represents an absolutely new element in our legislation which is in force now.

When creating this legal regulation, our Authority took account for the fact that inducement of regulation of the natural monopolies should parallelly contribute to establishment of a clear and transparent economic structure, which would enable better orientation as well as substantially higher degree of certainty on the direction of investments in the decision-making process for the potential entrepreneurs.

The current regulation of natural monopolies cannot be viewed as the simulation of the competitive environment (which is the main goal in industrialised nations and what should have been the main goal also with us). Regulation under the proposal of the Antimonopoly Office of the SR is to be related to generation, transmission and distribution of electricity, heat, gas, water as well as telecommunications. It should create single and transparent arrangements of economic, law and organisational assumptions for regulation in the mentioned sectors. Regulation shall cover prices, rates, costs, trade conditions and entry to the market.

The submitted law does not only aim at arrangements of obligations of the regulated subjects (to consummate supplies and comply with the conditions set forth in an approved license, to supply in the harmony with approved changes in prices, rates, costs and trade terms, to enable access of further entrepreneurs to the network, etc.), but their rights as well (the right to get approved reasonable prices, rates, costs and conditions of trade, the right to utilise other person's property for public purposes, and the like).

The submitted draft of the law is worked out in two alternatives in relation to the approach to establishment and position of regulation authorities.

It is necessary to stress that the regulation of natural monopolies is closely related to the process of restructuring and privatisation of single industries with the nature of natural monopolies. The notion of

the Antimonopoly Office is that this process should ensure increasing outputs, yields as well as new capital inflows.

The Antimonopoly Office of the SR was, and still is of the opinion based on the needs of effective demonopolization and deconcentration of the whole industry of power and gas industry in order to create a competitive environment in this field as well.

The current monopoly of the system power plants, which also includes the transmission grid, does not ensure the third party access to this network. Parallely it enables to exclude both international and domestic competition. Through the separation of the transmission grid, or eventually by further changes in organisational structure, several independent decision-making and economic centres will be created and the risk of failure will appreciably become diversified. Moreover, this would create assumptions to respond to the development of consumption of the electric power and mutual competition in satisfying demand more flexibly. This would have impact on the more effective utilisation of fuels, technology, capital and further spheres.

The substance of Slovak antimonopoly policy preferably lies in competition protection. That means that, in general, one can also add to its principal goals creating conditions for the long-run development of economic competition as well as promotion of economic effectiveness.

The current state of affairs is that in some spheres the Antimonopoly Office substitutes operation of a regulatory organ since not always the competencies among the Ministries are unambiguously given. An increasing number of petitions has been appearing heading towards the Antimonopoly Office of the SR that, within the limits of the Competition Protection Act, fulfilled the regulatory functions in many cases. We are of the opinion that unless ultimately decided how to regulate in the future, at present it is impossible to specify more in detail the sphere of co-operation among the Antimonopoly Office of the SR and the regulatory Authorities.

The main assumption for reaching this co-operation in the industry of power is the rationalisation of prices for transmission and retail rates as regards their level as well as structure. In the appreciably decentralised and less regulated market- orientated economy Slovakia is heading for, it is required to launch the right price signals towards mediators as well as direct sellers and purchasers of electric power so that they could individually take economic, investment and consumer decisions.

The co-operation is concerned in reaching joint goals which embody:

- economic effectiveness: to satisfy demands of all consumers for electric power, at minimum costs possible, in increasing effective utilisation of scarce resources and placing at disadvantage non-economic and waste-creating consumption
- mobilisation of resources, i.e. to maximize foreign exchange incomes and budgetary revenues; to enable electric power producers and suppliers to cover the operational costs as well as self-financing of the future resource; to maximize the inflow of both foreign as well as domestic capital into the sector;
- to enable to the greatest possible extend that population of all ranks will be able to afford the essential services of power.

Hence, nowadays one of the most important issues is whether the prices of power actually reflects the effectiveness of production of power plants and whether they actually involve all costs inevitable connected with the generation of power. Therefore, the prices covering costs should be set by a

regulatory authority to allow power companies to generate enough means for modernisation and revamping of their facilities. Thanks to their dominant position power companies are not exposed to competition that would force them to as effective as possible way of spending their own means. Similarly, owing to the fact that there is an absence of similar enterprises, it cannot be compared whether the size of costs would correspond to their effective utilisation.

On a competitive market, both supply and demand are flexible, the rate of action and response is high. Those whose competitive situation would concern, would not only get the chance to gain a major profit under certain circumstances, but they would be also subject to sanctions in case of non-compliance with requirements of the market. To exclude such a punishment, competitive activities, in particular investments, cutback of costs, penetrating, or development of new markets, voluntary withdrawals and decreasing prices would continue to be required.

The must of maintaining the competitive situation requires economic competition not to be carried out only on separate levels of the market. It must take place on each step of the chain ranging from the manufacturer of power, via wholesalers and retailers of power to consumers and end users of power.

Compiling of an appropriate regulatory plan is of paramount importance for creating steady environment for investments and privatisation. The role of the regulatory authority shall be providing the balance of commercial and financial interests of the consumer community on one hand, and interests of consumers in effective, reliable and economically rational services in the industries which are of natural monopoly nature.

# SPAIN

## Introduction

A new law regulating the Spanish Electricity Sector was passed in December 1994. The Ley de Ordenación del Sistema Eléctrico Nacional (LOSEN) aims to gradually introduce competition into the electricity sector while maintaining the financial health of the system. This brief note reviews the key reforms of the Spanish electricity sector set up by the new law.

## Background

### *Spanish Electricity Sector*

There are three vertically integrated private electric utilities in Spain and a holding under public majority participation which holds stakes in nine electric companies. There is also a national transmission monopoly. The market is fairly concentrated. The two largest players, the Endesa holding - under public majority participation - and Iberdrola, jointly control 80 per cent of the generation market and 78 per cent of the distribution market. There is also a growing number of Special Regime generators (cogenerators and others) which already account for nearly 10 per cent of supply and sell their energy to ordinary generators at regulated prices.

Consumption of electricity is still low by European standards so that demand can be expected to grow in the future. As in many other OECD countries, overinvestment in generation assets and slower than projected demand growth have contributed to build surplus capacity that will last for another 7-10 years.

### *Regulatory Regime*

Before LOSEN regulation of the electricity sector was entirely controlled by Government. Most decisions were regulated, including setting tariffs, planning new investments, and managing the operation of the system. Regulatory policy up to December 1994 was dominated by the desire to bring financial stability into the sector and to reduce the level of indebtedness of the companies. This was achieved by introducing a system of remuneration, known as MLE (Stable Legal Framework) based on standard costs for the different activities.

In essence, the MLE is a revised form of Cost of Service Regulation in which standard costs instead of accounting costs are considered in setting tariffs. The MLE creates a stronger incentive for the utilities to be efficient since cost savings result in higher profits while Cost of Service Regulation immediately translates cost savings into lower tariffs.

Overall, the MLE has been quite successful in helping the sector overcome its financial crisis of the late 80's. However, the MLE hinders competition among utilities by failing to provide adequate incentives for cost efficiency and price reduction. This regulatory system also lacks transparency which difficult Government control and efficient regulation.

## **The New Electricity Act (Losen)**

LOSEN aims to solve the problems faced by the MLE by moving towards a more transparent and competition-driven system, based in gradually introducing bilateral agreements and competitive bidding. Due to the gradualist approach of LOSEN, its implementation, currently under way, will take some more time to be completed.

The most important features of the new law are :

- Development of a new “free” market system, based on bilateral contracting and free entry, which is set to coexist with the present regulated system; coexistence of a free contract market and a regulated market requires a careful design of regulation to facilitate efficient trading between the two systems and to avoid the non economic bypass of existing generation assets. In this regard, CSEN is proposing to create a spot electricity market in which agents of both systems will be allowed to trade. CSEN also favours allowing the transfer of existing generators to the new system. However, these decisions are still undergoing careful analysis and discussion.
- Vertical disintegration of generation and distribution activities; LOSEN requires the unbundling of activities, although cross ownership of shares or stakes in generation and distribution companies is allowed. The purpose of this measure is to increase the transparency of the system.
- Open up the possibility of creating a competitive spot market; the LOSEN allows to set standard costs via a competitive system. Accordingly, compensation for some generators is now being set, in part, on the basis of competitive bidding. This mechanism will be gradually extended to include most generators and cost components.
- Establishment of a new independent regulatory and settlements authority (CSEN); the National Electricity System Commission (CSEN) is an independent regulatory entity established to ensure objectivity and transparency in the regulation of the system. The President and other members of the CSEN’s board are appointed by the Industry and Energy Minister. The Law also foresees the creation of an Advisory Board, composed by up to 30 members with delegates from the regional Governments, the electric utilities, consumers and central Government.

The main functions of CSEN are developing regulation in matters related to transmission and the operation of the system, acting as an arbitrator in case of conflicts among the different agents of the sector, being in charge of the settlements system, monitoring and promoting competition, and assisting the Government in all matters pertaining to electricity.

The structure of the industry is also changing. The Government plans to privatise the Endesa group during the current legislature. How privatisation should proceed in order to favour a less concentrated market structure, which CSEN considers a crucial issue at this stage, is currently being discussed. Regulatory change by itself is not enough to provide the benefits of competition. Also an adequate horizontal industry structure is needed in order to induce firms to compete.

## **The Transition From Monopoly To Competition**

Even if the reform of the electricity sector in Spain is just starting to be implemented, the main problems and some of the lessons to be learnt have already emerged. The difficulties associated with the reform of the Spanish electricity sector result from two basic elements:

First, there is surplus generation capacity. In regulated electricity markets, prices are often adjusted to allow all investments to obtain a “reasonable” return. In contrast, in a free market with excess capacity some assets will not be able to compete. Inefficient assets will be priced out of the market.

While this is a desirable feature of competition, its deleterious financial effect on existing firms may require some palliative measures. Countries with a publicly owned electricity sector can easily (and almost inevitably) absorb any negative financial impact just by selling their electric utilities at market price. Countries like Spain or the USA, on the other hand, in which many utilities are investor-owned may have to consider other strategies.

One option is to adopt a gradual liberalisation policy thus buying time for firms to adapt themselves to the new environment. The LOSEN and, more recently, the EU agreement on the internal electricity market seem to favour a gradualist approach in which the so called “stranded” costs do not emerge or, at least, are greatly reduced. Another option is to open up the market to competition immediately and, if needed, transfer a fraction of the financial loss to consumers via a “Competitive Transition Charge” as has been proposed in California. This option has a greater appeal when “stranded” costs are relatively small and are absorbed to a significant extent by the utilities themselves.

Second, retail electricity prices and the remuneration of the different electric activities are largely distorted in the regulated system. A comprehensive review of tariffs and standard costs is needed to adapt revenues to the real cost structure of the sector. This constitutes a difficult task for the regulator for at least two reasons. In the first place, any departure from the *status quo* creates losers in the short-run and, therefore, there is strong resistance to change; particularly, the utilities and cross-subsidised consumers tend to strongly oppose reform. Moreover, correct calculations of costs and tariffs require a considerable amount of precise and detailed information which is not always readily available. In particular, heavily regulated sectors like the electricity sector lack transparency.

Leaving entirely the task of inducing restructuring adjustments to the market would help overcome these problems but would also create others. Rapid deregulation without tariff and remuneration rebalancing would result in very rapid and dramatic changes that may impose sizeable transition costs on utilities and consumers.

It thus seems preferable that the regulator maintains an active role to ensure as well as to smooth the transition to a more competitive market. In this context, the independence of the regulator is an essential feature to counterbalance the forces that may try to stop the reform.

## SUMMARY

<b>ISSUE</b>	<b>BEFORE LOSEN</b>	<b>AFTER LOSEN</b>
Vertical Integration	Vertically integrated utilities	Vertically disintegrated but cross ownership allowed
Transmission	Disintegrated from other activities and regulated	As before
Wholesale spot market	Non competitive	Plans to create a competitive spot market
Regulator	Ministry	Ministry and Independent Regulator
Planning & free entry	Planning	Free entry (planning becomes subsidiary)

# SWEDEN

## Rules for the Swedish electricity market

The Swedish Parliament decided in October 1995 to introduce new legislation in Sweden for the electricity market to take effect as of 1st January 1996. These regulations introduce competition on the electricity market in the generation and distribution of electricity. The aim is to provide consumers with greater freedom of choice and better opportunities for putting pressure on costs and prices in the supply of electricity. Transmission, and access to the grid will remain a monopoly and will be run in a special company separate from the distribution of electricity. Transmission will be subject to separate accounting procedures. When charging customers, the total cost of electricity should be separated into two components, the transmission price and the price of the electricity.

A new authority, the Electricity Network Authority has the task of determining whether transmission prices reflect efficient use of the national grid and the regional and local networks. Decisions of the Regulatory Authority may be appealed to the general administrative court. One of the aims of regulating transmission is to create better opportunities for identifying and preventing economic surplus from arising as a result of excessive transmission prices, which might then be used to reduce electricity prices through cross-subsidisation. Such subsidies run the risk of distorting competition between enterprises selling electricity, and may lead to higher electricity costs for customers.

Prior to 1st January 1996, both the transmission and distribution of electricity required an area concession. After the new regulations, concessions are required for transmission and supply. The concessions for the supply of electricity are given for a maximum period of five years and impose an obligation on the electricity company to supply electricity to customers covered by the earlier system of concessions. The aim is to strengthen the customer's position on the market. A supplier's obligations under the terms of the concession cease, if and when a customer changes supplier.

According to existing regulations, electricity consumers covered by the supplier's concession, households, small companies etc., must submit a written application to change electricity supplier six months before a new supplier arrangement comes into effect. This means that electricity customers were not able to change electricity supplier before 1st July 1996. The time at which other customers, including industrial companies, can change supplier is mainly connected with agreements between the customer and the supplier concerning the contract period, notice to terminate agreement etc.

If customers change suppliers to secure better terms on the free market, there are rules applicable for measuring electricity consumption per hour. Normally this requires the customer to install a new electricity meter. At the beginning of 1996, installation and cost of the meter, together amounting to an average of 8 000 Kronor is payable by the customer. For most small users of electricity, these costs are the most important factor, apart from the price of electricity when considering whether to change electricity supplier.

## **Background**

### *Following-up the electricity market*

The Competition Authority has been given the special task by the Government of following up the electricity market during the first half of 1996. The 24 regional administrative boards have assisted the Competition Authority in this work. In its report "The Electricity Market - Is it Working?", the Competition Authority presented its views. One of the aims of the report is to provide a basis for the authorities to determine what measures are needed to promote increased competition on the electricity market to the benefit of consumers/electricity customers. What follows is a summary of that report.

### *Deregulated markets - earlier experiences*

The deregulation carried out in Sweden over the last 10 years with the aim of creating competition on different markets - e.g. domestic air transport, long distance freight transport by lorries, railway transport, postal services and telecommunications - applies to such activities which in most cases require access to infrastructural facilities. The former rules, by regulating the conditions for establishment and price setting, determined the supply of goods and services on the market. Often it has proved difficult to transform regulated monopolies into well functioning competitive markets.

One reason may be that in most cases the former monopoly, or in certain cases a few companies who prior to deregulation were given exclusive rights by the state authorities, own the necessary infrastructural facilities (essential facilities). This provides an effective obstacle to the establishment of new companies, which in its turn has led to a situation where existing companies have not been subject to competition from new operators within major segments of the markets that have been deregulated. An additional reason in many cases is that a company protected from competition, by virtue of the requirements for setting up business or through its need to have exclusive rights to run a certain activity, has been able to build up a strong market position due to its financial strength, its investments and the knowledge it has acquired about the market.

One of the lessons learnt is that very often it takes a long time to transform a monopoly market into a well-functioning competitive market. Another experience is that special measures must often be taken to promote competition. Distribution of electricity, as in the post and telecom area, is distinguished by companies using a surplus gained from monopoly activities or from activities where they have a dominant position, to subsidise other areas exposed to competition. Another common characteristic of a number of these areas is that major industries or customers with large purchasing volumes take advantage of the opportunities offered by the new competition conditions.

## **Market structure**

Essentially, the electricity market may be said to consist of three activities/sub-areas, namely the generation, sale, and transmission of electricity. The first two areas are exposed to competition. The extent to which there is competition is related to market concentration and structural conditions in production and distribution, and there are rules governing electricity sales to the final consumer and transmission prices. Competition is also affected by rules and institutional conditions limiting the extent of foreign trade and the competition generators face from imports.

### *Electricity generation and generating companies*

Generation of electricity in Sweden on an annual basis amounts in total to around 140 terrawatt hours, and exhibits high market concentration. The five largest generating companies ranked in terms of size are Vattenfall AB, Sydkraft AB, Stockholm Energi AB, Gullspångs Kraft AB and Stora Kraft AB. Vattenfall and Stockholm Energi are owned by the state and the city of Stockholm. The five companies mentioned account for approximately 90 per cent of the total production of electricity. The shares of Vattenfall and Sydkraft are 50 and 30 per cent respectively. Other major generators that can be mentioned are Gränseverken AB and the municipally owned Skellefteå Kraft AB with a total market share of around four per cent. In recent years generating companies in Sweden have become part-owners in each other's companies. Examples of this are Vattenfall and Gränseverket part owners in Gullspångs Kraft with Sydkraft having a similar interest in Gränseverket.

Until now Norway and Sweden are two of the few countries who have introduced new legislation on competition in the generation and distribution of electricity. In Finland and Denmark reforms were introduced on the electricity market during 1995 and 1996 respectively. Moves towards the promotion of greater competition in the Nordic area mean there will be a gradual increase in competition between Nordic electricity generators. It is against this background that the increase in ownership links between generating companies in Sweden and primarily their counterparts in the Nordic countries should be viewed. Joint ownership between competing companies always involves the risk that companies will cooperate in a way detrimental to competition. Such co-operation is made easier if a person in a management position in one company (e.g. a board representative) also plays a key role in a competitor.

A generator's most important customers are contract customers and customers covered by the supplier's concession, especially households and small companies. Contract customers are made up mainly of larger industrial customers and independent distributors of electricity. Agreements between generators and their customers are usually over a period of a year or more. Company supplies to household customers are in the majority of cases carried out by the company's own sales and trading company. Amongst generators, it is usually the case that the major part of the company's power production is sold to contract customers, while sales to household customers account for a smaller part. In a smaller number of generators, especially municipal energy companies with their own power production e.g. Stockholm Energy, the relationship is the opposite concerning the share of production made up by these two customer groups.

### *Electricity distribution sales and transmission of electricity*

In 1989 there were approximately 290 local electricity distributors in Sweden, accounting for the majority of distribution to the country's electricity customers, principally households and small companies. By September 1996 the number of distributors had declined to around 250, with each company normally divided into transmission and sales entities. Municipal energy companies account for about half of all supplies to the electricity customers mentioned above. Usually these energy companies do not generate electricity but purchase it from generating companies. Remaining sales of electricity in this case are accounted for by the larger generating companies via their own sales and distribution.

Development towards a reduction in the number of distributors is mainly a result of generating companies, especially Vattenfall and Sydkraft, acquiring such companies (vertical integration). This undermines competition in the whole production-sales-distribution-final consumer chain. This conclusion can be looked at from the perspective of e.g. the rules currently applicable when electricity customers change suppliers and the high costs customers confront when buying and installing new electricity meters.

The Swedish electricity transmission network consists of not only the national grid, but also the regional and local transmission networks. A state-owned company, Svenska Kraftnät, administers and runs the national grid. The regional networks are owned to a large extent by the major generating companies. The local network is owned by transmission companies who as a rule are linked to a distributing company. These companies are primarily owned by municipalities and in a few cases by the larger electricity generators.

The high market concentration in the generation of electricity, reinforces the importance of foreign trade and the smooth running of the electricity exchange. At the beginning of 1996, the Swedish-Nordic electricity exchange was set up (Nord POOL ASA). The rules of the exchange were drawn up by the Norwegian authorities. Nord Pool is 50 per cent owned by Svenska Kraftnät. In the middle of August 1996, the Finnish electricity exchange El-Ex (Electricity Exchange OY) was started. Until now only companies registered in Finland have been allowed to deal on this exchange, foreign companies are thus excluded. Nord Pool and El-Ex intend to start co-operating during 1997.

### **Market development and competition conditions**

Market conditions and their effects that are totally or partially connected to deregulation of the electricity market, can be summarised as follows:

- It may be the case that large generating companies are consciously reducing the supply of electricity in order to raise spot prices on the Swedish-Norwegian electricity exchange, thereby increasing the costs of their competitors to purchase electricity. Another issue that has received much attention is owner links between generating companies.
- Larger generating companies, especially Vattenfall and Sydkraft, are acquiring to an increasing extent municipal distribution companies. From the middle of 1993 until September 1st 1996, generating companies have acquired at least 15 distributors. During the same period, they have also acquired around 15 district heating companies, often in connection with the acquisition of distributors. The poor finances of the municipalities have contributed to this development.
- In the past electricity companies have often organised their transmission activities in ways that would probably not have been compatible with the new rules for this activity. A large number of transmission companies, in addition to their transmission activities, are also active in the distribution of electricity and in the market for electrical installation, both areas exposed to competition.
- Prior to deregulation, probably the majority of customers with high electricity consumption e.g. larger industrial companies and players within the public sector, concluded long-term agreements for the supply of electricity with their earlier supplier without using procurement procedures.
- A number of electricity customers with high consumption have been able to reduce electricity costs. The reason is that such customers have used a tendering process. In some cases, this has been carried out through co-operation with other industrial purchasers, and sometimes this has resulted in a change in supplier.
- Distribution companies have co-operated over their purchases of electricity, sometimes via jointly owned purchasing companies. There are examples of such companies being jointly owned by distribution companies and individual industrial companies. It also happens that purchasing companies sell electricity to customers other than their owners.

- Distribution companies have not to any noteworthy extent tried to compete over prices for small consumers (households, small companies etc.). Instead the market strategy adopted has often been to offer better service.
- The requirement for hourly metering of electricity consumption and new meters when changing suppliers has meant that the majority of electricity customers mentioned above, have not been able to take advantage of competition on the electricity market to obtain lower prices.
- Total electricity costs (transmission plus electricity) for a household living in a flat increased on average by 8.1 per cent at the beginning of 1996. For houses with and without electric heating, the increase was on the average 5.5 and 8.8 per cent respectively. All three household categories received in most cases sharp increases from 15 to over 30 per cent. Increased taxes on electricity from the turn of the year 1995/96 accounted for three to five per cent of the price increases.
- Difficulties with difficult-to-read and sometimes incomprehensible electricity bills to consumers appear to have worsened after deregulation.

### *Generating companies and foreign trade*

From a study carried out by the Stockholm School of Economics prior to deregulation, it appears that high market concentrations in the area of electricity generation have worked against effective competition and led to higher price levels. One proposal put forward is to divest the largest company on the market, Vattenfall, into several independent companies. An alternative proposal is to expand the Swedish market to cover all Nordic countries. This involves major obstacles and would require i.a. that transmission capacity in and between the largest Nordic countries be considerably expanded.

In recent years, a number of generating companies in Sweden have increasingly built up interlinking ownership connections between themselves and with generators in other Nordic countries. There are great risks that such co-operation between companies limits competition. And this is particularly so if there are persons in the management of one company or board occupying similar positions in other competing companies. Within the field of competition law, the term "interlocking directorates" is used for such arrangements. In highly concentrated markets, this issue is of particular importance from a competition perspective. The Competition Authority has decided to support financially two research projects in this area. The aim of these studies is to provide a basis for determining what possible measures might be taken to prevent anti-competitive behaviour that may originate from personal and ownership links between competing companies.

With respect to the high market concentration in the generation of electricity, it is important to have a smoothly operating foreign trade and electricity exchange. Currently, Sweden's most important trading partner in the electricity area is Norway. An important function of foreign trade is the trade in contracts i.e. price guaranteed financial agreements for future supplies of electricity. The buyer's and seller's risk or profit and loss is normally linked to the Swedish-Norwegian spot price for electricity, determined on the basis of supply and demand for electrical power. For this reason, it is important that all the players on the market (generators, distributors, brokers, electricity customers and others) have equivalent information on the supply of power. In this context generators may well have an advantage in terms of information. Neither can the risk be disregarded of a player having information that should be available to all actors, conducting advantageous business on the electricity exchange i.e. insider dealing.

There have been claims that on a number of occasions in 1996, larger generators in Sweden and Norway have consciously acted in order to raise spot prices by e.g. reducing the supply of electricity. One

consequence is that smaller companies competing with generators with either little or no generation of their own, and buying a large proportion of their power supplies via contracts incur higher costs for their purchases of electricity. There should be rules with the aim of preventing actors from distorting prices on the electricity exchange to their own advantage. This is connected to the scope and focus of the information regarding the supply of power on the market. In such cases, rules should be introduced on information concerning factors affecting spot prices either immediately or within a week. Such factors are review periods for nuclear power, information on the level of water reservoirs as well as plans for expanding and repairing hydro-electric power stations.

Trade in electricity between Sweden and Norway is subject to barriers which counteract efficient trade and competition between Norwegian and Swedish generating companies. This is connected to the practice of granting licences in Norway for export supplies lasting for more than six months. The intention is that this system should be abolished from January 1st 1998. In addition a system is applied on the electricity exchange of different price areas and supplementary or "bottle-neck" fees for import and export trades that are expected to create capacity problems on the grid, the aim being to discourage buyers and sellers from taking their planned supplies of electricity.

From a competition viewpoint this system is of dubious merit. In principle, it is not possible for actors to forecast when the grid will be subject to capacity shortfalls, and even less possible to foresee what extra fees will apply to supplies. Such a system increases uncertainty over the price of electricity that would prevail at the time of physical delivery. The system also works against an efficient exchange and a working market for electricity between Sweden and Norway. The approach of applying a specific price supplement under these conditions is especially disadvantageous to small purchasers and resellers of electricity.

A better arrangement from the competition viewpoint for solving "balance" problems on the grid would be a system where the company responsible for the national grid buys up surplus power. The costs of this power would be financed by all the actors using the grid, i.e. all actors would pay a lower price supplement, determined in advance, for transmission over the grid. Such a "Pool Model" would not restrict trade and thus competition between electricity companies in comparison with the present system of different price areas and the imposition of a comparatively high supplementary fee when taking delivery of agreed electricity supplies.

The different principles for determining prices of national transmission in Sweden and Norway lead to different prices for buyers and sellers of electricity and could influence competition between electricity companies in the different countries. In the Nordic countries, different tax systems and tax levels are applied in the production chain, leading to different competition conditions for the companies concerned.

### ***Electricity distribution - sales and transmission companies***

In addition to high market concentration in generation, two conditions are regarded as being especially important in creating well-functioning competition in the sale and distribution of electricity to the final consumer. The first is that the generating companies would to a much greater extent acquire distribution and sales entities, and transmission companies i.e. vertical integration. This is closely connected with the present requirement for hourly metering of electricity consumption when changing suppliers, and connected with customers normally having to buy a new electricity meter. The other condition concerns price determination on the transmission grid, which is a monopoly.

### *Vertical integration and metering requirements*

In the competition legislation, restrictions on competition between companies in a vertical relationship are often regarded less seriously than links between companies at the same production level (horizontal restrictions). Regarding vertical relationships, for competition to work, it is important that none of the actors has a substantial part of the market and that consumers are free to choose between different suppliers of goods and services. When companies at the same level of production have links restricting competition, this may mean, depending on the share of the market affected, that competition is either completely or partially non-existent for buyers.

By means of vertical ownership in different "chains" of generators and distributors of electricity, competition is restricted when generators sell electricity to distributors and to the final consumer. The cost of changing meters and installation greatly exceeds in many cases the savings that can be made over a long period by electricity customers when changing supplier. What makes the vertical links between generators and distributors/generators serious from a competition viewpoint is the "metering requirement". In practice, households and small company owners do not in reality have any real opportunity or freedom to choose between different suppliers of electricity. "The metering requirement " may thus be regarded as having contributed in many cases to a significant increase in electricity costs for different types of households during the first few months of 1996.

Under present circumstances, electricity prices for households may in the future increase to an extent that probably would not have been possible, if these customers had in fact had a real opportunity to choose between different distribution companies. Industrial companies and other major users of electricity should thus in comparison with households experience a "moderate" change in prices as current agreements expire. There is also a risk that the rationalisation resulting or that may result from structural changes in the market as a consequence of the deregulation where generators acquire trading companies including their transmission operations, will not be sufficiently beneficial to smaller electricity consumers. Over time the result may be that these customers in effect subsidise industrial customers and other major consumers of electricity.

The majority of small users of electricity should thus be exempted from the rules on hourly metering of electricity consumption and the requirement for installing new electricity meters when changing supplier. Instead a system of standard metering should be introduced. Such a proposal has been put forward by the regulatory authority. If electricity customers have more freedom in choosing supplier, there will be greater competitive pressure on the market. This in itself could have a price reducing effect without customers actually using the opportunity to change supplier. This conclusion is supported by experiences gained in Norway. Standard metering of electricity consumption would counteract the restriction on competition arising from the importance of vertical integration on the electricity market.

### *Transmission - organisation, costs and price setting*

Well-functioning competition in the generation and distribution of electricity presupposes that prices of transmission services reflect efficient operations. The regulatory authority's report on the differentiation of actual electricity prices and transmission tariffs at the beginning of 1996, the reason for price setting etc. supports their conclusion that prices of transmission are in many cases too high in relation to actual costs or costs at efficient operations. If the price of transmission services exceeds costs, the surplus can then be used to subsidise electricity prices thereby leading to a distortion of competition.

After the deregulation, electricity distributors have applied two organisational models. The first model involves transmission activities remaining in the parent company while a special subsidiary is

formed for the generation and distribution of electricity. The subsidiary often has no employees apart from the managing director. To-day there are probably more than 100 companies using this model. The second model means that electricity activities remain in the parent company while a subsidiary is established for the transmission activities. In this model there have also been cases where all personnel have been employed in the parent company. The organisation of distributors' activities is currently being investigated by the regulatory authority.

Present rules on the organisation of electricity and transmission create the opportunity for companies to exercise greater choice in how transmission may be organised in practice. Organisational solutions arising from deregulation may formally fulfil the rules involved. In practice, however, transmission activities can be performed in conjunction with distribution. This, however, leads to competition problems arising from the difficulties in identifying and accounting for all the costs of the transmission activity.

Experience from markets that were earlier deregulated in Sweden e.g. post, telecom area, railway transport - shows that the problems in cross-subsidisation between monopolistic and competitive activities are one of the most important issues that need to be solved in order to create well-functioning competition. The Competition Authority's examination of alleged predatory pricing under the Swedish Competition Act shows that it is difficult and demanding in terms of resources to identify and correctly relate all costs for a specific activity run in conjunction with other activities. This is also borne out by other international experiences.

Developments in Norway regarding price setting of distribution companies' supplies of electricity to the final consumer are also of interest. Deregulation of the Norwegian market in electricity started at the beginning of 1991. According to the Norwegian Competition Authority, a dual price system has been developed on the market. The prices of the distribution companies' own customers (households and others) are lower than prices for customers "belonging" to a different distribution company. In this way customers are "locked in" and the result is that competition in distribution is restricted. In Norway there has been no requirement that there should be different legal entities for transmission and distribution activities. Price fixing used in Norway shows what the consequence would be if the two activities are performed in a single company.

The organisational structures resulting from deregulation mean that it is difficult for the regulator to monitor the costs of transmissions, efficiency and prices. The aim of the regulation on separating transmission and distribution activities was not the formation of a large number of "shell companies" i.e. with one or a few employees, or that transmission should be operated together with distribution or other activities exposed to competition. In this case, it is important to supplement the legal rules and as far as possible prevent transmission from being operated together with other activities.

The present regulation that transmission should be accounted separately, provides companies with great freedom to tailor the focus and precision of their accounting. This in combination with the fact that transmission activities are often run jointly with one or more other activities, means that it is difficult to correctly identify and account for all the relevant costs. Based on current conditions, examination of prices for transmission will often be a difficult and demanding process in terms of resources. This applies not least to those cases where the court has to give its ruling on prices. It would also be difficult to determine prices for transmission services throughout the country that would reflect efficiency.

For this reason, special rules should be introduced that would inter alia clarify the costs relating to transmission as well as the accounting principles and cost verification requirements that should apply. In addition to clarifying transmission costs, this would create better opportunities for the operators

involved — the regulatory authority, the courts, and electricity companies — to cut down on resources used for examining prices of transmission. In addition, exemptions from the above mentioned rules might also be considered for companies with marginal transmission activities in cases where applying these rules would lead to effects that are not consistent with the original aims of the rules.

#### *Information on price setting*

A principal requirement for effective competition is that customers are well-informed on the company's supply of products with respect to quality and price of goods or services. Distribution companies' bills or invoices to households are very often difficult to interpret. This problem appears to have worsened after deregulation. Very often, it is not apparent from the electricity bill how total costs have been divided between consumption of electricity (price of electricity) transmission services (tariffs), and taxes. This makes it difficult for customers to compare electricity prices between different distributors of electricity. If conditions are created for effective competition over the sale of electricity to households, companies would in many cases become more motivated to base their invoices on the customer's needs.

#### *Competition between different systems for residential heating*

The distribution of residential district heating has traditionally been provided by municipalities, but in recent years larger electricity generating companies have begun to acquire municipal district heating utilities. This form of heating, which assumes access to i.a. piping systems for the distribution of hot water, was regarded prior to deregulation of the electricity market as a natural monopoly. Relatively large costs for customers (house owners, property owners etc.) are involved in changing from district heating to a new electricity supply system etc. A transfer from district heating to oil powered heating would involve higher costs and is thus normally not a realistic alternative. This leads to a lack of competition between different heating systems.

Deregulation was expected to lead to greater competition in district heating in relation to electric powered heating. Mainly for this reason, it was decided that district heating under certain circumstances should not be covered by the cost charge principle generally applied by municipalities. This is a form of price regulation and means that the price of a service provided by the municipality should not exceed costs incurred. With the exception of a few municipalities, there is no restriction on prices for district heating. Deregulation of the electricity market as mentioned above has not led to any real change in competition over the sale of electricity to households. This has led to amongst other things upward pressure on household costs for electric powered heating. This provides scope for increasing prices of district heating, and serves to underline the need for increasing competition in the supply of electricity to households.

### **Conclusions and summary of proposals**

In overall terms, one of the aims of the deregulation of the electricity market in Sweden, was to introduce competition on the market to the benefit of consumers. Generally speaking, it is difficult to predict all the consequences that can arise from introducing competition in a market which for very long has been a regulated monopoly. Often, it is difficult to assess how rapidly deregulation should be implemented. Excessive deregulation all at the same time can lead to undesired effects due to the market operators not having enough time to adjust to the new situation. Final evaluation of the effects of deregulation can normally not be made until after a relatively long period has elapsed. Another observation is that after deregulation, special measures are often required to stimulate competition.

The time between Parliament's decision on deregulation and its implementation on the electricity market has probably been experienced by many electricity companies and customers as being insufficient for them to prepare themselves for the new market situation. This could explain some of the effects on the market. There are, however, strong arguments for implementing certain measures that in the long-term would create effective competition on the electricity market and thus better ensure that the aims of deregulation are fulfilled.

In its report "The Electricity Market - Is it Working?", the Competition Authority proposes the following:

- 1) Exempt households, small companies and others from the rules on hourly metering of electricity consumption and from the requirement to install a new meter when changing suppliers. Introduce instead, as is the case in Norway and elsewhere, a system based on standard metering.
- 2) Supplement the rules on transmission organisations in order to prevent as far as possible companies running transmission activities together with distribution activities or other activities exposed to competition.
- 3) Introduce special accounting rules for transmission, which would inter alia clarify the costs related to transmission, as well as define the accounting principles and cost verification requirements that should apply.
- 4) Reduce Vattenfall's ability to dominate the electricity market by creating a working market in electricity covering the whole of the Nordic area and examine the possibility of divesting Vattenfall into a number of independent companies.
- 5) Introduce rules that would prevent insider dealing.
- 6) Introduce rules concerning independent information on the factors influencing the supply of electric power in order to create more equivalent conditions for the operators distributing electricity through contract agreements. This information should be provided by an independent body.

In addition, the Competition Authority is of the view that Sweden should work towards:

- 7) replacing, the system on the electricity exchange involving division into areas and "bottleneck" fees for supplies between Norway and Sweden when transmission is stretched to capacity, by a "pool" or counter trading system to create balance in the system.
- 8) introducing similar principles for price determination of national grid services in Sweden and Norway in order to secure better conditions for a functioning market in electricity between the countries.
- 9) and harmonising the tax system and tax levels for generating companies in the Nordic area.

Proposals covering points 4 to 9 should be considered against the backdrop of the high market concentration of generation in Sweden. This would increase the need to open the electricity market in Sweden as far as possible to competition from generators in other countries. Equivalent competition between generators assumes that the countries affected have opened their national markets to competition. Two important conditions for trade in electricity to function smoothly are that there should be an effective electricity exchange and trade in contracts. For the foreseeable future, the Norwegian electricity market

through the foreign trade mechanism seems to offer the best possibility for increasing competition between generators in Sweden.

When markets are deregulated with the aim of creating competition, there are often high expectations that changes in the rules will almost automatically lead to greater efficiency and lower prices for consumers. These expectations are often neither based on market considerations nor the conditions necessary for competition to function effectively. In this respect, the market in electricity cannot be regarded as constituting an exception.



# UNITED KINGDOM

## Introduction

The Government's privatisation policy reflects the belief that enterprise flourishes best and provides a better service to customers in a commercial environment where management is free to manage, without interference from Government, while being subject to the demands of the competitive market.

The Government set out its aims for the privatisation of the electricity industry in England and Wales in the White Paper 'Privatising Electricity' (Cm 322, 1988). It believes that these aims have been achieved. In summary:

- competition has been successfully introduced into both generation and supply. The introduction of competition and commercial freedom for the managements of the companies involved have led to significant productivity gains since privatisation, which are feeding through to consumers in the form of lower electricity prices;
- a regulatory regime has been set up, under the auspices of an independent regulator - the Director General for Electricity Supply (DGES). The DGES's duties, set out in the Electricity Act 1989, include the promotion of competition and the protection of the interests of consumers of electricity;
- the privatisation arrangements have safeguarded security and safety of supply;
- customers have been given new rights;
- in the offers for sale of the regional electricity companies and the two generating companies in England and Wales, 98 per cent of employees took up their rights to obtain shares.

On privatisation, the electricity industry was divided into four parts: generation, transmission, distribution, and supply. To promote competition in generation in England and Wales, the old Central Electricity Generating Board was divided into three generating companies: National Power, PowerGen and Nuclear Electric. Nuclear Electric remained in public ownership. Transmission was transferred to the National Grid Company (NGC). Twelve regional electricity companies (RECs) were established as licensed public electricity suppliers to undertake regional distribution and supply. In July 1996 the newer parts of the nuclear generation industry were privatised leaving only the older Magnox stations remaining in public ownership.

Under the Electricity Act 1989 the Secretary of State and the Director General of Electricity Supply are the principal regulators of the industry, and each is given specific responsibilities. The Government expect that as competition develops there will be less need for regulation as a surrogate for competition to supply electricity. However, natural monopoly is likely to remain in transmission and distribution, with a consequent need for regulation.

In addition to the specific arrangements put in place at the time of electricity privatisation, the Government also has powers under general competition legislation against monopolies, restrictive trade practices and anti-competitive practices.

### **Barriers to Entry**

In addition to the three generating companies formed from the CEGB, since 1990 anyone has been free to generate electricity, subject to authorisation by licence or exemption. Consequently another source of growing competition has been the entry of new generators into the market, both independent and RECs. At the end of 1995/96 there were 15 new entrant generator companies in England and Wales with a capacity of some 6000 MW. The output of electricity by these companies in 1995 was approaching 30 GWh in total, representing just under 10 per cent of total UK electricity generation. The former nationalised industries' share has fallen from 93 per cent in 1990 to 84 per cent in 1995. In 1995 CCGTs accounted for 17% of the electricity generated by major power producers in the UK.

Other new entrants are 'auto-generators', i.e. customers who generate electricity for their own use. The electricity privatisation arrangements were designed to minimise the barriers to auto-generation, and the barriers were further reduced in 1994, when the Government made it easier for auto-generators to qualify for exemption from the requirement for a generation or supply licence by amending the criteria for exemption. Further relaxation of the exemption criteria are planned.

### **Promotion of Competition**

The Government believes that competition is the best guarantee of customers' interests. It also provides choice for customers, and an underlying principle of the privatisation was that decisions about the supply of electricity should be driven by the needs of customers.

Competition was introduced, in both supply and generation, in 1990. To ensure an orderly transition to full competition, two transitional restrictions were made to competition in supply. First, competition was restricted to customers taking more than one MW; and second, in the competitive market there were limits to the market share that National Power and PowerGen could take in a REC's authorised area. Since privatisation, after reviewing the restrictions on the generators' combined market share, the DGES decided to abolish the limits with effect from 1 April 1993.

In 1990 the non-franchise market comprised sites taking over one MW, and in 1994 it was extended to include sites taking over 100 kW. OFFER estimate that by 1994/95 some 45 per cent of sites in the original non-franchise market (i.e. sites taking over one MW), accounting for some 63 per cent of the volume of sales in this market, had exercised their right to purchase electricity from a supplier other than their regional electricity company. In the new non-franchise market (i.e. those sites taking between 100 kW and one MW), OFFER estimate that 24 per cent of sites, accounting for 30 per cent of sales volume in this market, have already switched supplier. In the franchise market (which now comprises sites taking 100 kW or less), customers may not shop around, but their prices are controlled by the DGES under a formula of the form 'RPI minus x'. The right to shop around will be extended to these customers in 1998. Significant numbers of companies have taken advantage of these changes by switching supplier. This is an indication that competition has been successfully introduced into this sector of the market.

In addition to his substantial powers to protect the interests of customers, the DGES has been given licensing, enforcement and competition law powers. Among his powers he can propose amendments

to licence conditions, set the maximum resale price of electricity, and advise on investigations under competition legislation.

The Government believes that the powers given to the DGES are adequate to achieve the aims set out and strike the right balance between protecting the interests of customers, promoting competition, and ensuring that the companies retain the firm responsibility for the efficient management of their affairs within the regulatory framework established.

Further competition is provided by the import of electricity into England and Wales from France and, through the Scottish interconnector, from the two Scottish companies, Scottish Power and Scottish Hydro-Electric. The privatised electricity industry has increased the effective capacity of the Scottish interconnector from 850 MW to 1 200 MW; a further increase is proposed, to 2 200 MW.

The Department's view is that these are very important developments, and that many of them would have been very unlikely outside the framework provided by electricity privatisation.

At privatisation the Government retained special shares in National Power, PowerGen, the National Grid, and each of the 12 Public Electricity Suppliers. By virtue of the special share in each company, certain arrangements (including, in particular, limitations in the articles of association of the company which prevent a person or persons acting in concert from having an interest of 15 per cent or more in the voting share capital) cannot be altered or removed without the prior consent of the holder of the Special Share.

The special shares in the RECs were put in place in order to allow the companies time to establish a track record and to adjust to being in the private sector. As foreshadowed at the time of privatisation, the special shares in the Public Electricity Suppliers were redeemed in March 1995. Since the redemption of the special shares there has been substantial interest in regional electricity companies from those interested in acquisition. Currently (in mid-1996) seven of the 12 RECs have been taken over.

The special shares in the two main generators and the National Grid are not time-limited, and the Government has no present plans to redeem them.

### **Benefits To Customers**

An important measure of the impact of electricity privatisation is the effect on prices paid by customers. In 1995 electricity prices (net of VAT) were seven per cent lower in real terms than in 1990.

The majority of industry has benefited from electricity privatisation. Although the impact on prices varies, the average price paid by manufacturing industry in Great Britain has fallen by about 10 per cent in real terms since privatisation (1990). Smaller commercial customers are also benefiting. The position is illustrated by the Table below:

**Electricity prices paid by manufacturing industry, in real terms (1990=100)**

	Size of Consumer <sup>(1)</sup>				All manufacturing consumers
	Small	Medium	Moderately large	Extra Large	
1990	100	100	100	100	100
1995	84	88	92	92	90
<i>Average current price in 1995 (p/kWh)</i>	6.2	4.7	4.0	3.1	4.0

(1) Small consumers are those purchasing less than 880 000 kWh per year, medium consumers purchase between 880 000 and 8 800 000 kWh per year, moderately large consumers purchase between 8,800,000 and 15 million kWh per year and extra large consumers purchase over 150 million kWh per year.

Source: DTI.

Customers have been given significant new or enhanced rights and their interests are protected by the DGES.

Subject to the transitional franchise (described above), the arrangements put in place at privatisation give anyone the right to compete to supply electricity to customers. The most significant new right for customers is that of being able to shop around and select a supplier who is able to offer the better or cheaper service. The other main new rights for customers are:

- guaranteed standards of performance for supply to tariff customers, set by the DGES and covering such aspects as the need to keep appointments on the date specified, the need to restore a supply promptly within prescribed periods, and to give adequate advance warning of a planned interruption in supply. There are fixed amounts of compensation for customers in the event that guaranteed standards are not met.
- overall performance standards which the RECs are to meet such as minimum percentages of supplies to be reconnected following faults within three hours and 24 hours, and a certain minimum percentage of customers to get a firm reading of their meter at least once a year.
- new codes of practice to cover such areas as handling customer complaints, the efficient use of electricity, services for the elderly and disabled and arrangements for paying bills (including special arrangements for customers who have difficulty in paying bills) and arrangements for disconnections.
- the opportunity to complain to an independent regulator, the DGES, and for those complaints to be investigated by the Office of Electricity Regulation.

Customers are protected by provisions in the RECs' licences to prevent cross-subsidies between any of their separate businesses. The licence further prohibits any discrimination in the prices and terms of supply between franchise customers except where these reasonably reflect different costs of supply. For the non-franchise sector, the RECs and the successor generating companies (i.e. National Power, PowerGen and Nuclear Electric) must offer comparable terms to comparable customers.

Customers in both the franchise and non-franchise sectors benefit from the role given to the independent Regulator. In the event that the system of regulatory duties and obligation fails to work adequately, the DGES has powers to seek to address the situation. These include powers to enforce regulatory obligations where there has been a breach of licence conditions.

### **Impact on Producers**

Both National Power and PowerGen have responded to the increasingly competitive electricity generating environment. As a result of investment in new technology, including Combined Cycle Gas Turbine (CCGT) power stations they have increasingly diverse and efficient portfolios of power stations. They have reduced their non-fuel costs, and have achieved improvements in their manpower productivity; the productivity (output per man) of National Power and PowerGen has improved by 15-20 per cent in each year since privatisation. This compares with an average improvement for manufacturing industry of 3.8 per cent. This enables the companies to compete at home and abroad. It contributes lower costs to other businesses, and lower prices to domestic consumers. They have also improved their environmental performance.

The nuclear generation industry, too, has had to focus sharply on the management of its portfolio of nuclear power stations. It has achieved impressive results in improving the reliability of its AGR (Advanced Gas Cooled) generating stations, and it has now brought the new Sizewell B PWR (Pressurised Water Reactor) generating station on stream, within the cost target and timetable set in 1990. Between 1991/92 and 1994/95 it increased its output per man by 60 per cent.



# UNITED STATES

## PART I \*

### **The Electric Power Industry in the United States**

Four main types of electric utilities in the United States differ in legal structure and regulatory treatment. They are: investor-owned utilities, which are typically privately owned, regulated monopolies; non-Federal publicly owned utilities, which are nonprofit State and local government agencies established to serve their communities and nearby customers at cost; cooperative utilities, which are owned by and provide electricity to their members; and Federal power agencies, which are primarily electricity producers, wholesalers, and transmitters. Although only about 250 out of the 3,204 electric utilities nationwide in 1994 were investor-owned, they are by far the most economically significant group, collecting almost 80 percent of all electricity revenues. Over 99 percent of investor-owned utilities' revenues accrued to the 179 largest utilities.

Total electricity revenues in 1994 were \$203 billion, or about 3.2 percent of gross domestic product (GDP) and \$400 per U.S. resident. Of that sum, residential users accounted for \$85 billion, commercial users for \$63 billion, and industrial users for \$48 billion. The electric utility industry is one of the most capital-intensive in the United States; the 179 largest investor-owned utilities alone had almost \$575 billion in assets in 1994, amounting to almost five percent of the gross capital stock of all industries.

### **General Competition Principles**

Powerful market forces, coupled with increased recognition of the costs of regulation, are strengthening the consensus to reform regulation in order to promote competition in electric power. Regulatory policy needs to respond to the forces of change, and important reform initiatives are under way. At the Federal level, the Federal Energy Regulatory Commission (FERC) is trying to ensure access for all power generators to electric utilities' transmission lines. Various states also are moving to promote competition. The stakes are high. Electricity is a critical element of an economy's infrastructure.

Regulatory reform enjoys broad support, but disagreement exists over how best to make the transition from regulated monopoly to competition and over the role of government once that transition is complete. Although the debate is often couched in terms of "regulation" versus "deregulation," implying that deregulation by itself will encourage competition and thus efficiency and innovation, what is at issue is something far more subtle, namely, the form and nature of regulation, with profound effects on both efficiency and equity. It cannot be overemphasized that immediate blanket deregulation is not a panacea. Well-designed regulations and antitrust safeguards are likely to result, ultimately, in more competitive markets with more innovation than immediate deregulation could provide. Moreover, until competition develops, it is important to maintain safeguards to protect consumers and to prevent incumbent monopolists from stifling the growth of competition.

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\* Part I is prepared by the Department of Justice.

## **From Regulated Monopoly to Competition**

Usually the stated reason for resorting to regulation of a monopoly rather than promoting competition through antitrust is that the industry in question is believed to be a natural monopoly--an industry in which product demand can be supplied most efficiently by a single firm. Natural monopolies arise mainly from large fixed costs relative to the size of the market: for example, the cost of running telephone or video cables to a home, or the cost of electric transmission lines. Such conditions create large economies of scale; that is, unit costs drop significantly with the volume of firm's output. In such cases the judgment may be made that competition is not workable and that the market is best served by a single monopoly firm that can fully exploit economies of scale but is prevented by price regulation from exercising monopoly power over customers.

The last 25 years have witnessed a sea change in attitudes toward regulating industries on grounds of natural monopoly. Economic studies have increasingly questioned the extent of economies of scale, challenging the view that many such industries are ubiquitous natural monopolies. More important, there has been a growing awareness of the major inefficiencies spawned by the regime of regulated monopoly.

Competition typically offers important advantages over monopoly, especially regulated monopoly. Competition encourages innovation, which lowers costs and increases the variety of products available to consumers. And regulated monopolists generally have weaker incentives than unregulated monopolists to cut costs, to launch new products, and to respond to changing customer demands. In addition, there are administrative costs of regulation and, more important, the potential for losses due to protracted disputes between the regulated firm, customers, and regulators, which can cause long delays in adjusting prices or in authorizing new investments. The bottom line is that competition need not be perfect for it to be preferable to regulated monopoly. The advantages of competition can easily outweigh the disadvantage of not fully exploiting economies of scale.

## **Adapting Regulation to Increase Competition**

Although regulation has been the primary tool for addressing monopoly in infrastructure industries, these industries have also been subject to antitrust rules in some aspects of their operation, such as interconnection in the case of the telephone industry. Regulation and antitrust have had an uneasy coexistence, given their somewhat inconsistent thrusts: antitrust encourages competition but for the most part does not attempt to control a firm's prices, investments, and technology choices, whereas regulation does attempt to control such decisions and often restricts entry into the industry as well, thereby reducing competition. The difficulties in reconciling these approaches, and the distortions that stem from regulating monopolies, have created growing support for moving toward a more integrated competition-cum-antitrust regime.

Regulatory reforms in the 1970s and 1980s demonstrated that largely unregulated competition yields more efficient performance in such traditionally regulated industries as air transport, railroads and trucking, natural gas production, and long-distance telephone service. More recently, technological advances have further increased the scope for competition in local telephone and cable service and in the electric power industry. Regulatory regimes should adapt to changing conditions, to help shrink the boundaries of the regulated sector and rely more on competition.

## **Removing Legal Entry Barriers**

In electric power generation, the advent of smaller, more efficient gas-fueled generators, coupled with falling prices for natural gas, led to greatly reduced economies of scale. In addition, since the 1980s it has been demonstrated that independent generators can be successfully integrated into utility-owned transmission grids. These and other developments have prompted growing interest in further promoting competition in electricity generation. Although states now retain monopoly franchises for electric utilities, virtually everywhere moves to relax legal barriers to competition are gathering steam. Many states are considering initiatives to permit some competition, and some, like California, have developed concrete proposals.

## **Deregulation is not enough: Challenges to Regulatory Reform**

Removing legal barriers to entry into traditional monopoly industries, although critical, is unlikely by itself to ensure the rapid development of competition or an efficient and equitable transition. To promote these and other goals, regulatory reform must address several difficult and important challenges, which are outlined below.

### ***Promoting and Preserving Competition***

Preventing regulated monopolists from distorting competition in related markets. A common and difficult problem arises in bringing competition to traditionally regulated industries when, whether for jurisdictional or technological reasons, a vital "bottleneck" segment will continue for some time under the control of a regulated monopoly. For example, competition is envisaged in electric power generation, but for the time being transmission and distribution will remain regulated monopolies.

The difficulty posed by such a mixture of regulation and deregulation is that a price-regulated bottleneck monopolist has strong incentives to provide its own affiliates in unregulated segments better access to the bottleneck than it offers to rivals. Such discrimination can inefficiently exclude rivals from the potentially competitive segments, harming both the would-be rivals and consumers. Preventing such access discrimination (and cross-subsidization, which, as discussed later, also distorts competition) could be approached in alternative ways, all of which have certain limitations.

Relying solely on regulation to prevent the regulated monopolist from favoring its unregulated operations over rivals raises problems. Firms can devise many clever technological games to circumvent regulation, such as varying the quality of connections provided to competitors. An alternative approach is to separate the regulated and unregulated parts of a monopolist's business into different companies. This was done in the Department of Justice's landmark case that resulted in the 1982 consent decree and the 1984 breakup of the American Telephone and Telegraph Company (AT&T, then the dominant U.S. telephone services provider). The seven regional Bell operating companies (RBOCs) created under the 1982 consent decree were allowed to offer regulated regional telephone service but were barred from the largely unregulated long-distance market.

Such forced structural separation helps promote level-playing field competition in the unregulated markets, but it may sacrifice economies of scope efficiencies in joint ownership and operation of related segments of an industry. How to prevent discrimination without unduly sacrificing economies of scope is a central challenge in assessing whether and under what safeguards the RBOCs should be permitted to offer long-distance service while they still dominate local telephone networks; and whether

electric utilities should be allowed to sell unregulated power in competition with rivals while they still control the vital transmission grids.

One way in which network monopolists can stifle competition is by denying potential competitors interconnection with their networks. Ensuring suitable and fairly priced interconnection may require government intervention.

Restricting mergers between likely potential competitors. Regulation must be forward looking: it must consider the market not only as it is today but also as it is likely to evolve. In most traditionally unregulated industries, it is actual competitors--the firms already present in a market--that largely determine the prospects for present and future competition. But in traditionally regulated monopolies, future competition must largely come from the outside. Mergers between regulated monopolists that are likely potential competitors therefore can significantly reduce the likelihood of future competition.

### ***Improving the Regulation of Remaining Monopoly Segments***

As noted earlier, although promoting competition is generally the preferred approach, some segments of electric utilities' operations will continue to be regulated for some time. In those segments it is important to devise better ways to regulate prices. Traditionally, utilities have been subject to cost-of-service regulation, under which prices are set to cover the regulated firm's costs plus a "fair rate of return" on capital. Such regulation, however, reduces incentives to innovate or to contain costs, because the firm realizes essentially the same profits regardless of its efforts: success at cutting costs is penalized by reducing the allowed prices.

Performance-based regulation (PBR) loosens the link between the firm's controllable costs and its allowable price. For example, pure price-cap regulation places a ceiling on the firm's price at some initial level based on estimated cost, then lets the cap change only with conditions outside the firm's control, such as the rate of inflation. The firm then has an incentive to cut costs, because to do so increases its profit. On the other hand, the firm also has an incentive to cut costs by shading quality, and regulators must guard against such attempts. Another problem is the inability of governments to commit to honor a price cap agreement and allow a company, depending on the efficiency of its operations, to go bankrupt at one extreme or to reap huge profits at the other. Recognizing that suitably designed PBR can nonetheless often create better incentives than pure cost-based regulation, ultimately benefiting both the firm and consumers, many states are moving toward PBR in the transmission and distribution of electricity.

### ***The Impact on Consumers and Investors During the Transition***

#### ***Protecting consumers***

When should an incumbent monopolist's prices be deregulated? Setting a fixed date reduces investors' uncertainty, but at the risk that competition may not have developed enough by that time to substitute for regulation in disciplining prices. For example, many economists favor some temporary regulation of the prices that electrical utilities can charge, even if reforms are instituted to make generation competitive, because it will take time to build new plants and reduce existing utilities' dominant share of generation assets.

A complicating factor in deregulating prices is that competition often develops faster for some customers than others, typically faster for large business customers than for residential users. It therefore may be appropriate to deregulate prices on a phased basis, starting with those customers for whom

competition develops earliest. But if the utility has large (current or past) fixed costs that are common to all of its operations, which regulators allow to be recovered through regulated rates, it becomes important to ensure that deregulating one group's prices will not shift onto others an increased share of these common costs. One way to prevent this is to deregulate some prices, but on condition that the utility agrees not to raise prices to its remaining captive customers. Competition should increase overall benefits, not be used as a cover for cost shifting among customers.

#### *Impact on investors*

Nor should competition be a cover for unreasonably shifting costs from customers to utility investors. To meet their obligation to serve all customers in their monopoly franchise areas, electric utilities have made costly investments in long-lived generating plant and other assets--with the regulators' implicit promise of a guaranteed return. As discussed below, opening up utilities' traditional monopoly franchises to competition at a time when they have significant excess capacity would greatly reduce the value of such investments and subject utilities to so-called "stranded costs."

#### *Promoting Universal Service and Other Social Goals*

Promoting universal service--reasonably priced access to essential services for all customers--has been a longstanding goal of regulators in the electric power industry. Traditionally this and other social goals (such as assisting certain disadvantaged customers and reducing environmental pollution) have been pursued by imposing obligations on and regulating the price structure of utilities.

These regulations, however, have spawned inefficiencies. Moving to competition and letting prices respond to market forces, so that they more accurately reflect true costs, are likely to reduce these inefficiencies and cut the cost to society of providing universal service by lowering overall costs and prices. But doing so may require devising alternative ways of funding service to those consumers who would not be able or willing to pay the prices that might emerge under competition.

#### *Reassessing Jurisdictional Boundaries*

In the electric power industry, state and Federal regulators share jurisdiction. This can lead to differing regulatory objectives and inconsistent policies. A main advantage of decentralizing regulatory jurisdiction is to allow states the flexibility to pursue social and economic policies tailored to different local preferences and conditions. As markets become more competitive, the scope for pursuing such goals through regulation may decline, although the states will play a major role in ushering in an efficient and equitable transition to competition.

On the other hand, decentralizing regulation also has its drawbacks. Efficient networks in electricity often involve facilities used to serve several states, which can lead to inconsistent policies when such networks are regulated at the state level. Multiple state regulatory regimes also can increase firms' uncertainty and costs of compliance. For these and other reasons, jurisdictions such as the European Union have been moving to harmonize the regulation of network industries. As the United States attempts to increase competition in such industries, it too will have to reassess what jurisdictional boundaries are most efficient. In any event, regulators must work across jurisdictional boundaries to foster cooperative and consistent public policy goals.

## Promoting Competition in Electricity

Major electric utilities have historically been vertically integrated, engaged in both the generation and the delivery of electricity. Delivery is over high-voltage transmission lines from generators to substations, and from there over local distribution lines to users. The Federal Energy Regulatory Commission (FERC) regulates interstate transmission services and interstate wholesale power transactions (sales to utilities for resale), whereas the states regulate their investor-owned utilities' retail sales. In the past the supply of electricity within a given geographic area was seen as a natural monopoly, and state public utility commissions awarded utilities exclusive franchise areas. They required utilities to serve all consumers in their franchise areas at regulated, bundled rates, covering generation and delivery, based on cost of service.

A major crack in the vertically integrated structure of the industry came with the Public Utilities Regulatory Policy Act (PURPA) of 1978, which required utilities to buy power from nonutility generating companies that employed renewable energy sources or cogeneration (co-generation uses steam both to generate power and to heat adjoining buildings). Although its primary goals were to reduce dependence on imported oil and encourage renewable energy sources, PURPA played a major role in promoting competition in power generation. By giving rise to a class of nonutility generating firms, PURPA created momentum for efforts to unbundle generation from delivery. Moreover, experience with PURPA demonstrated that independents could build generators on time and on budget and could be reliably integrated into the transmission grid, subject to utilities' control. Nonutility generating firms have grown rapidly since PURPA's enactment. Their share of nationwide generating capacity has doubled from 3.6 percent in 1987 to 7.2 percent in 1995; since 1990 they have contributed over half of all new investment in generating plant.

An obvious reason for some independents' growth is obligations imposed on utilities to purchase power from PURPA-qualifying facilities. Although PURPA required purchases at prices that were supposed to reflect utilities' expected costs were they to supply power from their own sources, regulators in a few states calculated these prices in ways that led to artificially high purchase prices. But technological change also played a major role in the growth of independents. The advent of small, efficient, natural gas-fueled generators, coupled with falling gas prices, drastically reduced the capital cost and minimum efficient scale of generating plants, making it easier for independents to finance plants (because of shorter construction lags and lower financing needs) and to build plants under contract to serve a particular utility. Market innovations in the financing of power plant construction by independents also were important.

Asymmetrical regulatory treatment also contributed to the independents' growth. Independents had stronger incentives than utilities to cut costs, because only the independents were exempt from cost-based regulation. The Energy Policy Act of 1992 expanded this exemption to a broader class of independents than PURPA had covered, allowing such independents to enter the wholesale power market, where they could sell power to utilities at unregulated market rates (unlike PURPA, however, the 1992 Act did not oblige utilities to purchase from the independents). Regulators in some states required utilities to look first elsewhere, to nonutility generating firms (or to other utilities with excess capacity), to supply their incremental generating capacity needs before building more plants themselves.

These changes expanded wholesale competition among generating firms to sell power to utilities. Pressure is growing to allow retail competition as well: for generating companies or utilities to sell directly to final customers in the franchise area of a different utility, paying regulated rates to use the utilities' existing transmission and distribution lines. This pressure comes mainly from large customers, who, among other things, can credibly threaten to bypass their local utility by generating their own electricity

using small natural gas plants, or through municipalization (discussed below). Promoting increased wholesale competition and introducing retail competition present three major challenges, which are discussed below.

### **Unbundling Generation from Transmission and Distribution**

To deliver power to final consumers, generating firms require access to the transmission and distribution facilities that utilities own and operate. These facilities appear to be natural monopolies, likely to remain subject to price regulation. This gives rise to a by now familiar problem: if utilities are also permitted to generate their own power and sell it at unregulated rates, they will have an incentive to evade regulation by favoring their own generators and realizing profits through unregulated power sales. Such favoritism could involve cross-subsidizing the unregulated power generation business from the regulated transmission and distribution business or, more important, discriminating against outside generators in providing access to transmission and distribution networks.

If there were no significant economies of scope between generation and other functions, an obvious way to prevent discrimination would be to require separate ownership of regulated transmission and distribution assets and of unregulated generation assets. However, as discussed below, transmission and generation may be subject to economies of scope. The challenge to policy makers and market participants is to devise solutions that balance potentially conflicting goals: preventing access discrimination, but without comprising the reliability of electricity supply, sacrificing economies of scope, or imposing excessive regulation.

The technological relationship between the generation and transmission of electricity is more complex than that between production and transportation in most other industries. Modern alternating current transmission networks require tight and rapid balancing between power generated into and power withdrawn from the transmission grid. Storing electricity in significant volumes is generally impractical, and failure to balance power inflows and outflows can result within seconds in serious deterioration of system operation and widespread damage to equipment. The system is much less tolerant than, say, gas pipelines, which can accommodate imbalances for longer periods through external storage and by changing the degree of gas compression within the pipelines. Moreover, electricity flows cannot be easily routed within an integrated transmission network; rather, power flows automatically and instantaneously along the path of least impedance. Imbalances at one point on the grid therefore can have widespread and unpredictable consequences throughout the network.

Although network operations are largely computerized, unforeseen contingencies can require central intervention by the grid operator: transmission constraints may result from unforeseen demand surges or equipment failures, requiring some generating sets to be unexpectedly dispatched and others turned off. In addition, there are common costs in operating a transmission network, such as maintenance of reserves, and charging individual generators for such costs requires a central authority. Operating such a complex system therefore requires the grid operator to have substantial control over at least some generating assets, and over some network functions that entail common costs.

Until now such complications have been addressed within the context of a vertically integrated industry, and through regional power pools and other voluntary associations. However, moving to a more competitive regime may require devising alternative institutions. Vertical integration opens the possibility that utilities would use their control of transmission to discriminate in favor of their own generating plant. And, as explained below, reliance on voluntary cooperation to resolve regional transmission issues may be more difficult in a competitive environment.

The FERC has addressed the issue of expanding transmission access by requiring utilities situated between one utility seeking to purchase power and another utility or independent power producer seeking to sell power to allow use of their transmission lines to complete the sale. At first efforts to expand access were episodic; for instance, approvals of utilities' merger requests were made contingent on their granting transmission access. The 1992 Energy Policy Act explicitly authorized the FERC to require wholesale transmission access upon request. The FERC has recently established a comprehensive framework for implementing open, nondiscriminatory wholesale transmission access: a utility would have to grant access to outsiders seeking to consummate wholesale transactions on the same terms as to its own generating facilities. The practical results of this rule remain to be seen.

Important as these initiatives are, some observers believe that more will have to be done. Defining and policing against discriminatory access may be difficult when an integrated utility runs the grid. In addition, increased competition will strain the current system of informal coordination between utilities, each operating transmission facilities that are connected into regional grids. Connecting such systems offers important advantages: it provides alternative transmission paths and economizes on redundant facilities, and it facilitates power sales to resolve temporary local imbalances between supply and demand or to benefit from differences in the cost of power over a wider region. Such informal coordination worked reasonably well in an era when utilities had exclusive franchises, but may become increasingly frayed in a competitive environment.

To address these concerns, some observers have proposed, and California regulators have recently endorsed, the formation of an "independent system operator." Investor-owned utilities and independent non-public generating companies would bid competitively to sell power into a regional grid. Utilities would retain ownership of transmission facilities but would turn over their operation under contract to an independent entity, which would manage the system on a regional basis. The operator would have authority over such decisions as how to respond to unforeseen contingencies and, under FERC oversight, how to price certain network services and allocate certain common costs. Although promising, this model also raises some questions. Can an operator be truly independent of utilities while they retain ownership of transmission and distribution? And will such a system cope well with coordinating investments in transmission and generation, given that different generating firms that rely on the grid can often have diverging interests?

In short, moving toward a more competitive market in electric power generation will require innovations in both regulation and market institutions. Maximizing the benefits from competition will also require implementing pricing policies that more accurately reflect transmission congestion and the costs of generation at different times (peak and off-peak). Finally, the gains from increased competition beyond those already being realized from today's wholesale competition may be modest in the short run, because much of utilities' expenses are associated with past investments, and with fuel expenses, which cannot be greatly reduced.

Nevertheless, some efficiency gains could materialize even in the short run: from increased utilization of excess capacity, from superior operation and maintenance of existing plants, from boosting labor productivity, and, in some cases, from better allocation of generation across plants with different costs. In the longer run the gains may be greater, since generation accounts for about half of the cost of electricity to the end user, and increased reliance on competition rather than regulation could allow both better operating decisions and better investment decisions regarding the amount, mix, and speed of construction of new plant.

## Stranded Costs

Allowing competition would put pressure on utilities' prices and customer base, threatening to create stranded costs. Stranded costs are those unamortized costs of prior investments that are scheduled for recovery through regulated monopoly rates but would not be recovered under competition. Stranded costs for the industry as a whole have been estimated at \$135 billion--well over half the total equity value of all investor-owned utilities. Many of the vulnerable utilities are concentrated in California, New York, New England, Pennsylvania, and Texas. Many of these utilities would be threatened with bankruptcy if unfettered wholesale and, especially, retail competition were allowed without providing utilities assistance in covering stranded costs.

One source of stranded costs is past investments that turned out differently than expected. In some cases nuclear power proved more expensive than projected, and gas prices much lower; therefore some investments in nuclear generators led to higher generating costs than those of modern gas-based plants at today's gas prices. Second, in many regions utilities overestimated power demand, leading them to build excess generating capacity. If this capacity were fully used under the pressure of competition, it would drive the price of power down to the short-run marginal cost, and thus well below average cost (which includes sunk capital costs). Although such pricing promotes short-run efficiency, it would impose large losses on some utilities. Finally, stranded costs also arise from regulatory obligations imposed on some utilities but not on other suppliers, including requirements to buy power from PURPA-qualifying facilities at prices which may be above today's market prices, and to fund demand conservation programs.

In unregulated markets the possibility of stranded costs typically does not raise an issue for public policy--it is simply one of the risks of doing business. However, there is an important difference between regulated and unregulated markets. Unregulated firms bear the risk of stranded costs but are entitled to high profits if things go unexpectedly well. In contrast, utilities have been limited to regulated rates, intended to yield no more than a fair return on their investments. If competition were unexpectedly allowed, utilities would be exposed to low returns without having had the chance to reap the full expected returns promised to induce the initial investment. A case therefore can be made for allowing utilities to recover stranded costs where these costs arise from after-the-fact mistakes or changes in regulatory philosophy toward competition, as long as the investments were initially authorized by regulators and those changes could not have been reasonably foreseen.

The case for allowing recovery is stronger where stranded costs arise from regulatory obligations imposed on utilities. Several states, notably California, required utilities to purchase power from qualifying facilities under PURPA at long-term contract prices based on high estimates of future oil and gas prices, even after utilities resisted purchasing all the capacity offered at the high prices. Utilities also were required to fit coal-fired generators with costly pollution control equipment, again with the expectation that costs would be recovered through regulated rates. Utilities should be allowed to recover such costs mandated by regulation.

To be sure, where utilities are permitted to recover stranded costs, this should be limited to costs prudently incurred pursuant to legal and regulatory obligations to serve the public. Investments made after utilities are notified that competition is coming and are relieved of their obligation to serve should not qualify, and utilities must try to mitigate their losses. Both equity and efficiency arguments may support honoring regulators' promises. Credible government is key to a successful market economy, because it is so important for encouraging long-term investments. Although policy reforms inevitably impose losses on some holders of existing assets, good policy tries to mitigate such losses for investments made based on earlier rules, for instance, by grandfathering certain investments when laws and regulations change.

Because stranded costs are sunk, economic reasoning suggests that they should be recovered through mechanisms that do not artificially reduce power consumption. One possibility is a charge levied on transmission, but as a fixed fee rather than a marginal charge: customers would be required to pay specified amounts, based perhaps on their past consumption, regardless of their future use of electricity.

Since stranded costs reflect policy decisions, recovery should be borne broadly by all parties on whose behalf the stranded costs were incurred, including customers that switch to other suppliers. Consistent with this principle, the FERC proposed that wholesale customers departing a utility be assessed a contribution toward stranded costs. Although the FERC proposal would directly apply to stranded costs resulting only from increased wholesale competition, it could also serve as a model for states contemplating retail competition, and serve as the FERC approach to recovering stranded costs resulting from retail competition in the unlikely event that the state lacked authority to address the issue.

Most state discussions of initiatives to foster retail competition in fact have included, as an integral part, mechanisms to recover stranded costs. But some retail customers threaten to bypass this process, for example, by resorting to "municipalization." A municipal utility within the franchise area of an investor-owned utility may generate none or only some of its required power, and as a power reseller it qualifies for FERC-mandated wholesaler access to outside suppliers. Although municipal utilities typically serve legitimate functions, they might at times provide a loophole for avoiding fair sharing of stranded costs. A municipality might extend its boundaries to encompass the premises of a large industrial customer served by the investor-owned utility; that customer becomes eligible to buy power from outside suppliers, using the municipal utility as conduit. Such actions raise important issues of equity and cost-shifting, both for the local utility and for other customers in its franchise area that may be stuck with a larger share of stranded costs. The FERC has stated that municipalization should not be a vehicle to escape responsibility for stranded costs.

### **Competitive Parity, Universal Service, and Environmental Protection**

For competition to work well, it must take place on a level playing field: competition will be distorted if producers are given selective privileges, or subjected to selective obligations imposed to further even legitimate social goals. This principle raises several issues as we move toward increased competition.

As competition grows, increasing distortions may result from some entities having access to special privileges such as federally tax-exempt bonds or other preferential treatment. Accordingly, reexamining special privileges of various entities may become more important.

On the other hand, producers should not be subjected to selective obligations. New ways must be found, as in the telephone industry, to address universal service, assist low-income consumers, and meet other social goals currently addressed through obligations on regulated monopoly utilities. Continuing to impose such requirements only on some producers would place them at a competitive disadvantage and imperil their ability to meet these obligations. Accordingly, these obligations would be better financed through more broadly based mechanisms.

Increased competition in electricity can also affect the environment. To reap the advantages of more efficient electricity markets and a cleaner environment, environmental policy will need to respond to any risks that restructuring may pose for environmental quality. But policy toward restructuring should also recognize those risks and, where possible, facilitate appropriate responses. For example, the burden of funding renewable energy sources or energy conservation programs to reduce pollution should be

shared broadly, not placed solely on vertically-integrated utilities.<sup>1</sup> Symmetrical treatment of all players will address environmental concerns more effectively and provide competitive parity.

## **Conclusion**

The electricity sector is undergoing sweeping transformations, which hold the promise of increased reliance on market forces and competition, with potentially large dividends for consumers and business. To facilitate such transformations, regulatory and competition policy must adapt. Unnecessary legal restrictions on entry must be removed, and regulation must be reformed to better address those industry segments where monopoly power will persist. But blanket deregulation will not ensure an equitable, efficient, and durable transition to competition. To ensure a successful transition and protect important social goals, government will have to play an evolving but ongoing role.

## **Note**

<sup>1</sup> In contrast, economic theory suggests that the cost of additional environmental protection equipment on existing plants should be borne by the companies owning the retrofitted plants.



# UNITED STATES

## PART II \*

**BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION  
DEPARTMENT OF ENERGY  
WASHINGTON, D.C.**

In The Matter of )  
  
Promoting Wholesale Competition Through )  
Open Access Non-discriminatory Transmission ) Docket Nos. RM95-8-000  
Services by Public Utilities, Recovery of ) & RM94-7-001  
Stranded Costs by Public Utilities and )  
Transmitting Utilities; Proposed Rulemaking and )  
Supplemental Notice of Proposed Rulemaking )

**Comment of the Staff of the Bureau of Economics  
of the Federal Trade Commission**

### **I. Introduction and Summary**

The staff of the Bureau of Economics of the Federal Trade Commission (FTC)<sup>1</sup> appreciates this opportunity to respond to the Federal Energy Regulatory Commission's (FERC) notice of proposed rulemaking.<sup>2</sup> The staff of the FTC has a longstanding interest in regulation and competition in energy markets, including proposals to reform regulation of the natural gas and electric power industries.<sup>3</sup>

Competitive opportunities in the generation of electric power have burgeoned in the last decade, stimulated by changes in relative costs of different types of generating plants and by changes in laws and regulations. But economic benefits for consumers of greater competition may be thwarted by features of the industry's traditional vertically-integrated structure and regulation. To remove obstacles to increased competition, FERC proposes rules that would call for utilities to offer open, non-discriminatory access to wholesale transmission services. To address issues that are likely to delay the transition to a more

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\* Part II represents the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Federal Trade Commission or any individual Commissioner.

competitive market environment, FERC proposes rules to govern recovery of “stranded costs,” which FERC describes as uneconomic costs (primarily generation) that a utility has already incurred. We fully support the intention of FERC’s efforts, to promote greater competition in this industry so that the benefits of greater efficiency can promote lower electricity rates for consumers. Our comments address aspects of the particular methods FERC has proposed and assess how variations on FERC’s proposals might accomplish its goals more effectively.

**Operational unbundling would likely be more effective than functional unbundling and less costly than industry-wide divestiture.** FERC’s plan for “functional unbundling” of power generation from transmission services addresses a critical competitive issue by requiring vertically integrated utilities to grant open access and equal treatment to their competitors. This approach, however, would leave in place the incentive and the opportunity for some utilities to exercise market power in the regulated system. Preventing them from doing so by enforcing regulations to control their behavior may prove difficult. The problem would be most effectively prevented by completely separating ownership and control of generation from transmission. This separation would remove both the incentive and the opportunity to exercise market power, by eliminating the utilities’ ability to discriminate in favor of their own generation operations. The additional benefits of full divestiture may be outweighed, however, by the costs and difficulties of implementing it industry-wide. It may be sufficient to require “operational unbundling,” in which the dispatch of generating capacity and/or the operation of the transmission grid would be controlled by an independent entity. Operational unbundling could prevent discrimination and achieve the competitive benefits of open access more effectively and efficiently than would an attempt to mandate, regulate, and monitor access. In addition, operational unbundling would not incur the costs of full divestiture.

**Competition problems in concentrated generation markets must still be addressed under open access.** Open access will affect, but not obviate, FERC’s assessment of competitive conditions in electric power generation, including its analysis of “generator dominance.” The DOJ/FTC Horizontal Merger Guidelines show how to evaluate likely competitive effects of concentration among suppliers and changes in market contours. Expanding the number of suppliers potentially available is likely to make the electric power system more efficient and more competitive, but there may be circumstances, even under open access conditions, in which dominant suppliers might be able to exercise market power. Competitive conditions among mid-cost plants could be particularly significant.

**Efficient transmission pricing must accompany open access.** Pro-competitive reforms will not achieve their objectives, and might even prove counterproductive, unless prices and terms for transmission services also become economically efficient signals about investment and output. Achieving the economic benefits of unbundling will therefore depend strongly upon FERC’s concurrent reform of transmission pricing. An aspect of efficient transmission pricing is the regime for resale of transmission rights in secondary markets, which will be especially important if FERC opts for functional unbundling alone. For secondary markets to perform their pro-competitive functions effectively, the cap on resale prices should be removed, so that prices for resales can become economically accurate signals about expanding transmission capacity. Transmission pricing based on market factors should assist in discouraging local transmitting utilities from favoring their own potentially unmarketable generation capacity and reduce their incentives to delay expansion of wholesale transmission capacity. The utilities might well share these incentives for delay with the agencies that regulate them locally, because delay might favor the interests of local customers.

**Methods for recovering “stranded costs” should avoid market distortions and reward efforts to mitigate.** We express no view about the net costs and benefits of recovering stranded costs from future, present, or past customers. We offer some views about the methods that might be used if FERC

commits to recovery of stranded costs. FERC's choice of method will take on additional importance if other jurisdictions use it as a model. First, structuring recovery as excise charges is likely to distort price signals and may lead to inefficiencies. Instead, the method chosen should minimize market distortions. Second, shifting all costs to remaining customers could stimulate resistance and delay the transition to greater competition. To avoid that problem, FERC and state and local regulators should consider transitional rate caps or other methods to dampen the "rate shock" to remaining customers. Third, requiring that all savings from mitigation be passed through is likely to undermine utilities' incentives to innovate with services, marketing, and pricing. Alternatives that preserve those incentives to mitigate should be considered. Finally, recovery on a wider geographic basis may be appropriate for those investments that were undertaken to benefit a wider group of customers.

## **II. Operational Unbundling Offers Significant Advantages Over FERC's Proposed Functional Unbundling Approach**

The problem FERC is addressing is the risk that vertically integrated transmission monopolists will control access to transmission services in ways that inefficiently favor their own generation operations.<sup>4</sup> As long as all stages of the industry were regulated jointly as monopolies, the problem did not attract regulatory attention. It arises now because one stage of the industry, generation, is becoming more competitive.

### **A. Preventing Discrimination or Cost Shifting by a Regulated Monopolist is Difficult**

A monopolist whose rate of return is regulated has an incentive to evade the regulatory constraint in order to earn a higher profit. Its participation in an unregulated market may give it the means to do so, either by discriminating against its competitors in the unregulated market or by shifting costs between the regulated and unregulated markets.<sup>5</sup>

The discrimination strategy involves complementary products. The monopolist controls others' access to its regulated product in ways that permit it to earn supracompetitive returns in its own operations involving the unregulated complement. Discrimination could appear as a subtle reduction in quality of service, whose effects would be more difficult to identify and measure than outright denial of access. An integrated transmission monopolist might afford other generation sources access to its transmission services only on terms that raise others' costs and permit the monopolist to make supracompetitive profits in the generation market.

The cross subsidization or cost shifting strategy involves inputs used for both regulated and unregulated products. Costs of the shared inputs, which in the electric power industry might include scheduling and general overhead, are assigned to the regulated business to justify higher cost-based rates there. This shifting distorts competition and produces inefficiencies in the unregulated business as well. Controlling the discrimination and cost-shifting strategies with monitoring and regulation is difficult. They can be defeated most effectively by preventing the regulated monopolist from entering the unregulated business, thus eliminating its ability to distort competition in the unregulated market.

### **B. Operational Unbundling Is Likely to be More Effective And Less Costly Than Functional Unbundling in this Industry**

FERC's proposed solution to these problems, functional unbundling, stops short of structural separation and thus leaves in place the anticompetitive opportunities and the monitoring and enforcement difficulties that are inherent in vertical integration between regulated and unregulated markets. Electric

utilities that own or control transmission facilities would be required to offer an open-access tariff to other parties and to take transmission services for their own wholesale purchases or sales under that same tariff. Thus, the rules would require the utility to charge itself the same price, under the same terms, that it charges others for the same transmission service. FERC anticipates that requiring the utility to use the same tariff it imposes on others will encourage the utility to adopt competitive and efficient transmission prices.<sup>6</sup> But FERC's proposal, by retaining integrated ownership and control of transmission and generation services, would leave the integrated utilities with the incentive and opportunity to find ways to evade regulatory constraints. One way could be to manipulate the sensitivity of short-run transmission services to the risk of delay and uncertainty, which is inherent for this non-storable product. A transmission owner may be able to favor its own generating plants materially with subtle delays or complications in the transmission approval process.

Rules mandating open access and comparable treatment would be particularly difficult to monitor and enforce in this industry, because, to succeed, the rules must constrain transmission owners to ignore their economic interests. Ensuring that the services and prices the integrated utility provides to and charges its competitors are equivalent to what it provides to and charges itself could require virtually transaction-by-transaction regulatory oversight. Monitoring and enforcing compliance with regulations against discrimination may be particularly difficult when quality of service is time sensitive, as it is in electric power. Because power is sold on an hourly basis, market dynamics -- and thus the incentive and ability to exploit market power -- can shift over the course of each day, making it virtually impossible to intervene before conditions have changed. Hemming in transmission owners' behavior, although perhaps possible in theory, will be difficult to maintain in practice. Successfully containing their behavior at one time and place may provide little assurance of containing it later or elsewhere.

Complete divestiture would resolve the competition problem better than regulation of behavior. Complete separation of both ownership and control can provide the best assurance against the anticompetitive incentives and capabilities of combined operations. Divestiture also avoids the expense and intrusiveness -- and perhaps futility -- of monitoring and controlling a firm's day-to-day behavior.

On the other hand, complete divestiture, curtailing vertical integration to prevent anticompetitive behavior, may sacrifice economies of scope between the regulated and unregulated markets. A regulated monopolist's participation in the unregulated market might be desirable if it would realize scope economies that outweigh the anticompetitive distortions.<sup>7</sup> In the electric power industry, there may be economies of scope in coordination between output and transmission and in planning, or in lower average inventory, personnel, or reserve requirements.<sup>8</sup>

In antitrust enforcement, divestiture is the remedy most commonly sought for anticompetitive mergers or monopolization. In some cases, remedies short of full divestiture have been applied, to preserve the efficiency benefits of a combination while addressing its competitive problems. A constant concern in devising orders short of full divestiture is how to monitor compliance to prevent competitive abuse. The only compliance oversight required for divestiture is ensuring that the divestiture takes place. By contrast, continued monitoring is required to assure compliance with behavioral or intra-firm structural orders. Ordering a firm to afford access is futile if the price it charges or the cost of monitoring its compliance are too high. Recognizing the advantages of structural separation in a context similar to what FERC is considering here, the FTC has required formal divestiture to prevent a firm from taking advantage of vertical relationships with its merger partner to circumvent rate-of-return regulation.<sup>9</sup> Regardless of whether full divestiture is a cost-effective solution here if applied nationwide to the entire industry, it could still be the correct remedy for specific anticompetitive behavior by individual utilities.

A primary illustration of the benefits and costs of functional separation short of complete divestiture is provided by the experience of the AT&T monopolization case. Divestiture was ordered to eliminate and prevent AT&T's anticompetitive behavior. One purpose was to separate AT&T's regulated operations from its unregulated ones. But despite the formation of the regional Bell operating companies as completely independent, locally regulated entities, the regulated and unregulated operations that had been combined in AT&T were not separated completely. AT&T remained in the (regulated) long distance business. The regional Bell companies were allowed to continue such (unregulated) services as publishing directories and may request permission to engage in other businesses as well. Interpreting the order and reviewing applications for exceptions from its constraints has entailed nearly continuous, costly oversight, an experience which may counsel in favor of making distinctions and separations cleaner at the outset.

Achieving complete corporate divestiture can be costly, however, especially where assets and operations are thoroughly integrated. Devising an effective response to the competition issues in the electric power industry context is complicated greatly by the fact that the industry is already substantially vertically integrated. The potentially great costs of dismembering almost all existing corporate relationships in a vital industry must be considered and compared to the potential benefits, as well as to the costs and benefits of alternative approaches.<sup>10</sup>

Because functional unbundling alone may not be effective, and both it and complete divestiture may be more costly to implement, a middle-way "operational unbundling" approach should be favorably considered. By operational unbundling, we mean structural institutional arrangements, short of divestiture, that would separate operation of the transmission grid and access to it from economic interests in generation.<sup>11</sup> The purpose would be to prevent the regulated transmission monopolist from influencing the potentially competitive wholesale generation market. Separating ownership of generating facilities from control of transmission would reduce the incentives and ability to exercise transmission market power.<sup>12</sup> By separating ownership from control, operational unbundling captures a primary advantage of divestiture by affording a high level of assurance -- at least as high as functional unbundling, if not higher -- that nondiscriminatory practices and rates will prevail.<sup>13</sup> Operational unbundling would not incur the costs of enforcing behavioral rules, because the firms would have less incentive and ability to discriminate. It should be at least as effective as functional unbundling in ensuring against discrimination, and it would be much less costly to implement than divestiture, because only operation, not ownership, would be structurally separated.<sup>14</sup>

### **III. Competitive Conditions In Generation Must Still Be Monitored Under Open Access**

A factor in whether FERC will approve use of market-based rates for power is its assessment of competitive conditions in power generation.<sup>15</sup> Here, FERC asks whether, under an equal access requirement, regulation of prices for generated power can be relaxed or eliminated. The answer is, not necessarily. Although open access may lead to sufficient competition in some markets, FERC should still examine actual market concentration and competitive conditions in determining whether to loosen regulation.

A useful framework for examining the competitive effects of industry concentration and other market characteristics is set out in the Horizontal Merger Guidelines issued in 1992 by the Department of Justice and the Federal Trade Commission.<sup>16</sup> Under the Horizontal Merger Guidelines, product and geographic markets are defined in terms of the ability of a hypothetical monopolist to profit from a small (typically five percent), non transitory increase in prices for the product within the area. Market concentration is evaluated for that product and that geographic area.<sup>17</sup> Antitrust analysis usually anticipates that, if concentration is high, anticompetitive effects such as coordinated interaction (collusion) or

unilateral market power will be more likely, in the absence of ameliorating factors such as easy entry.<sup>18</sup> If the entry of new competition will rapidly and effectively constrain a price increase, then a dominant firm or collusive group probably could not exercise market power even in a concentrated market.<sup>19</sup>

Introducing open access to transmission would not prevent completely the exercise of market power in generation, but it is likely to limit the situations of competitive concern about market dominance. Open access could broaden the relevant geographic market for generation by alleviating impediments to wholesale wheeling. Broadening geographic markets typically results in lower concentration and thus reduced risk of market power. Opening a system to a larger number of generating plants could also lead to operating efficiencies, by more completely capturing gains from trade among facilities with different costs and by reducing the system's reserve requirements. Open access could increase the likelihood that a price increase will be met by timely and sufficient entry, either by new generator construction, new transmission capacity, or new transmission rights. And with open access, entrants would be more likely to enjoy nondiscriminatory prices for transmission service. But open access alone would not eliminate the need to consider the problem of generation market power. Although market dominance situations may become rarer, they will not necessarily disappear, so the specifics of each case may still have to be evaluated.<sup>20</sup>

Recent empirical work on electricity generation pricing in the United Kingdom may provide some insight about generator dominance and how to limit its effects.<sup>21</sup> The U.K.'s electric power reforms have taken place within the context of high concentration in generation. The findings of the U.K.'s electricity regulator and recent academic research show that the two dominant generators have exercised considerable control over price in many periods.<sup>22</sup>

Most relevant for this inquiry, however, is that most of the year, the market price in the U.K. is determined by relatively few plants -- those with middle levels of cost.<sup>23</sup> Low cost plants are always dispatched (that is, operated). High cost plants are dispatched only at brief demand peaks or in emergencies. In most periods the marginal plants that set the price are the middle cost plants. Given this pattern, greater competition among middle cost plants could make the exercise of market power more difficult even if capacity at the extremes is concentrated.<sup>24</sup> In deciding whether to relax regulation in a market under open access, attention might be focused on the ownership structure of the middle-cost sources. Higher concentration overall may be more acceptable if concentration among middle-cost plants is low.<sup>25</sup>

We support FERC's efforts to identify generation markets where regulation can be relaxed. Where a generation market is found to be competitive, market based pricing should be permitted, or the benefits of industry restructuring will be limited or lost.

#### **IV. Efficiency Gains from Open Access Depend on Concurrent Reform of Transmission Pricing**

##### **A. Transmission Rates Must Be Made Responsive To Economically Relevant Criteria**

Economically efficient transmission rates will be vital to obtaining the potential efficiency benefits of open access.<sup>26</sup> The transmission grid is likely to remain a regulated monopoly, no matter what method is used to ensure or encourage open access to it. FERC acknowledges that current "postage stamp" transmission rates are not sensitive to distance and actual electricity flows, and thus may not lead to economically efficient employment of, or investment in, generating capacity.<sup>27</sup> Unless transmission rates are economically efficient, open access will not serve to give buyers, sellers, and investors the right signals for developing new service alternatives, assessing where new plant and transmission lines should be

located, or determining when entry is warranted. Transmission rates should send signals to allocate resources efficiently in the short run and to invest efficiently in the long run. Thus, transmission rates should respond to such factors affecting marginal cost as distance and time of day, and, where capacity constraints limit output, to the incremental cost of removing bottlenecks or adding capacity.

## **B. Secondary Transmission Markets Are Vital to Efficiency-Enhancing Reform**

FERC's proposals would require public utilities to offer a wide variety of transmission services, including point-to-point commitments of transmission capacity. FERC observes that competition is likely to be enhanced if customers can reassign, or resell, rights to these services, because customers would then perceive lower risks in making firm contracts. We concur with FERC's positive view of such secondary market sales of transmission rights.<sup>28</sup>

In many settings, secondary markets can lead to more efficient use of resources. In previous comments to FERC, DOJ and the staff of the FTC have encouraged the creation of secondary markets for rights to transportation of natural gas.<sup>29</sup> More recently, the values of secondary markets were described in the context of trading in operating rights, or "slots," at congested airports.<sup>30</sup> An economically efficient solution to problems like these would limit the use of the resource and allocate rights of use to those who value them most highly. These efficiencies can be achieved by permitting holders to buy, sell, and exchange their rights to use the resource. This secondary market trading helps ensure that the available capacity is used to offer services that consumers value most highly. The secondary market is particularly important in bottleneck areas, where switching from low to high value uses of capacity is likely to produce the greatest benefits. Moreover, secondary market prices embody important information about the social benefits of investment in additional capacity. Prices will be higher for peak demand time periods, when capacity will be fully utilized. The higher price encourages lower-valued uses to shift to off-peak times or to other sources. Thus, the difference in cost of rights at different times can relieve the need to make expensive additions to capacity.

Application of these insights to the electric power industry could significantly improve efficiency. A secondary market in rights to transmission services could help ensure that those services are used by the wholesale customers that value them most highly, in turn assuring that their use reflects the consumers' valuation too. And the price signals in the secondary market could provide information that will be important to investment decisions, encouraging expansion of transmission capacity where it would be most productive.

A secondary market for transmission services may be especially important at bottleneck interconnections. Because available capacity at a bottleneck is scarce, prices may be relatively high there even if conditions are competitive. Such high prices would be a signal to expand capacity.<sup>31</sup> But a monopolist or coordinated group of transmission owners at that point might exercise market power to elevate prices even above the scarcity rents. A secondary market, by increasing the number of participants, could provide alternative sources and thus help avoid such an exercise of market power.

Because it would serve several important economic functions, a secondary market for transmission services should be permitted and even encouraged to develop fully and rapidly.

## **C. Restrictions on Prices in Secondary Transmission Markets May Limit Efficiency Gains from Open Access**

FERC forbids resale of transmission rights at a price higher than what the utility was initially paid for them.<sup>32</sup> FERC asks whether this restriction should be lifted. Lifting this price ceiling would permit

important economic efficiency gains from open access to be realized.<sup>33</sup> A particularly important effect relates to FERC's proposal about expansion of the transmission grid.

FERC's proposal would require that a public utility expand its wholesale transmission grid when customers apply for such service (and supply appropriate financial guarantees). But building new transmission capacity may not be the lowest cost way for a new customer to obtain point-to-point transmission service. Instead, the service might be obtained more cheaply by buying transmission rights from a current user who values them less than the new customer does. This efficient resale transaction would be discouraged if the current user could not charge a price high enough to make reselling the rights attractive. Customers whose demand is too small to justify their investment in new transmission capacity, but great enough to justify paying a price higher than current customers could accept to release their transmission rights, could be frustrated.

If the cap on resale prices is removed, current transmission customers would face an opportunity cost for their transmission service -- that is, the value of the alternative use of the service -- equal to the price that new transmission customers face for the service. This equality means that price signals for transferring and adding to capacity would be efficient. By contrast, retaining the cap could mean that current and prospective transmission customers would face different prices for equivalent services. That inequality could perpetuate inefficiencies.

#### **D. Remaining Incentives To Exercise Transmission Market Power Call For Careful Monitoring of Exemptions from Orders to Expand Capacity**

A public utility with market power in transmission may have opportunities to profit by raising transmission prices. Existence of stranded costs could provide an opportunity to exploit that market power. Market power usually harms all of a firm's customers, but the situation in the electric power industry is unusual: the customers that continue to buy power from a utility with transmission market power may instead gain from its exercise. The utility might use its market power over transmission services to collect a greater share from the customers who depart to buy power elsewhere, rather than collect it all from the customers who remain. The utility and its remaining customers -- as well as the utility's investors and even its local regulatory authority, representing the interests of continuing local customers -- could thus share an incentive to favor the exercise of its transmission market power.

A utility might also attempt to take advantage of its market power by delaying transmission expansion. Increased demand for transmission services could come either from its departing wholesale customers or from wholesale customers from other areas wishing to wheel power through its territory. The utility might decide not to expand transmission capacity, or local authorities might refuse to authorize it.<sup>34</sup>

Despite these opportunities to exercise transmission market power, FERC proposes to permit waivers of its expansion orders.<sup>35</sup> A utility could be exempted from a FERC order to expand if the utility shows that its good faith attempts to comply have been blocked by inability to obtain regulatory approvals or to assemble necessary rights of way. Determining good faith could be difficult. Even assuming good faith, rejection by local regulatory authorities, for whatever reasons, could hamper competitive open access.<sup>36</sup> Because widespread waivers could undermine the transition to open access competition, waiver applications may require careful attention.

An advantage of operational unbundling, separating ownership of generation from control of transmission, over functional unbundling is that it will more effectively prevent the transmitting utility from favoring its own generation, so an owner of potentially stranded generation plant would find it more difficult to favor that plant over more efficient sources. Operational unbundling also limits the local

regulator's ability to favor potentially stranded generation plant by denying rights to expand transmission capacity.

## **VI. Methods of Recovering Stranded Costs Must Avoid Introducing Distortions and Discouraging Mitigation**

FERC believes that increased competition under open access will cause some historic costs to become "stranded." FERC defines these "stranded" costs as legitimate and verifiable historic costs on which suppliers "could not earn a reasonable return in a competitive market."<sup>37</sup> FERC proposes that the stranded costs under its jurisdiction be recoverable from customers, rather than borne by investors. FERC believes that this assignment of costs would speed the transition to competition in the industry. Under the Proposal, a wholesale customer taking advantage of open access to buy power from a new supplier could be required to pay the former supplier a surcharge on its transmission services, designed to recover a share of the former supplier's stranded costs. Before a utility could include stranded cost charges in its transmission tariffs, it would have to demonstrate that it has taken efforts to mitigate the threatened losses from customers' departure.<sup>38</sup> A customer's maximum possible stranded cost exposure, before mitigation, would be the revenues that the utility would have received from the customer had the customer continued to take service from the utility.<sup>39</sup>

This comment takes no position about the overall balance of benefits and costs of recovery of stranded costs from departing wholesale (and retail) customers. Recovery might encourage transmission companies to enter the open access regime more quickly, but it could also reduce customers' incentives to switch to suppliers with the lowest prices, which would tend to slow the transition to competition.<sup>40</sup>

### **A. Efficiency Gains from Open Access May Not Be Realized Rapidly If Stranded Cost Recovery Distorts Prices**

Different methods of recovering stranded costs could have significantly different economic effects. The likely differences are explored in the public finance literature about different forms of taxation.<sup>41</sup> FERC's proposal to recover stranded costs through an additional charge on transmission services for departing customers is analogous to a sales or excise tax, with the charge paid varying with the amount purchased in the future. Its effects can be contrasted with the effects of a lump sum tax, which, in the present context, might be analogous to a fixed charge based on electricity use in the past.

If possible, the method chosen should not distort the price signals that the economy relies upon to prompt efficient decisions about production, consumption, and investment. The ideal method would have a neutral effect on departing customers' marginal price and output decisions. The lump sum approach is neutral in this sense, but the excise approach is not. The excise charge approach effectively increases the unit price of a customer's future services, and increasing its prices is likely to reduce how much it purchases. Thus, adding a charge to a customer's future transmission rates would lead the customer to search harder for substitutes. If the effective transmission prices it must pay exceed competitive marginal costs, the customer may use generators that are inefficiently close to its load. The degree of distortion will depend on the customer's price elasticity of demand for transmission services. The cumulative effect could be to reduce the number of competitive generating suppliers serving the market.

By contrast, under the lump sum approach, the departing customer's stranded cost liability would be fixed, and the charge would not depend on how much transmission service it used in the future. The lump sum approach, unlike the excise charge approach, would establish a fixed liability that would not distort the customer's economic incentives at the margin.<sup>42</sup>

An excise approach is likely to increase uncertainty about how much the stranded investment charges will recover. Greater uncertainty about how much is at stake could increase remaining customers' perceived risk that the stranded costs will be shifted to them. The scenario that remaining customers would most fear, and which greater uncertainty may exacerbate, is a "death spiral" of continually increasing prices as the utility tries to make up for the revenue lost from departing customers. To avoid this potential obstacle to public acceptance of the transition to competition, FERC may wish to consider temporary, transitional price caps on rates for remaining customers. These could be especially important to cushion the transitional disruptions for residential accounts or other small customers that are most likely to lack immediate self-help alternatives. Such price caps have been used in the U.K. with apparent success to limit cost shifting and to promote public acceptance of regulatory reform by avoiding "sticker shock."<sup>43</sup>

FERC maintains that the magnitude of stranded costs at the wholesale level is relatively small, so inefficiencies from a stranded cost recovery program should be relatively small. But FERC's decision about the form of recovery may become a model for states to apply at the retail level. Because of the potential secondary effect, FERC's approach may have system-wide implications.

### **B. Proposals About Mitigation Savings Could Reduce a Utility's Incentives To Use Stranded Capacity**

The FERC proposals appear to envision that all of a utility's savings from efforts to mitigate its stranded costs will be applied to reducing the customers' stranded cost liability.<sup>44</sup> Requiring that all savings be passed through to customers could adversely affect the transition to competition. The requirement would undercut the utilities' incentives to mitigate their stranded costs through innovative services, marketing, and pricing. If utilities refrain from such innovation, use of open access could be curtailed and broad secondary markets for transmission could be significantly delayed. And if the amount of a utility's stranded cost or mitigation obligation remains unsettled over time, competitive discipline is likely to be blunted by regulatory adjustment in response to inroads by the utility's competitors, and the industry will continue to be characterized more by regulation than market forces.

Suppliers generally have strong incentives to respond to changing demands with product and service innovations that make the best use of their capacity. As regulation in this industry is reformed, suppliers of electric power could have similar incentives to innovate in order to mitigate threatened losses, such as those that are here labeled "stranded costs."<sup>45</sup> But requiring that all mitigation savings be passed through to the departing customers will effectively impose a 100 percent tax on mitigation savings. High tax rates on an activity generally discourage it.<sup>46</sup> Thus requiring complete pass-through may discourage mitigation efforts.

Other treatments of savings may not discourage mitigation as much. The utility might be required to pass through only some fraction of mitigation savings to the departing customers, adjusting the fraction periodically in light of experience. This fractional pass-through approach resembles the cost saving incentive that some states have instituted in their rate of return regulations.<sup>47</sup> While incentives to mitigate would be greater under this approach than under full pass-through, they would still be lower than in a competitive market.<sup>48</sup>

Another approach would focus on the utility's dealings with its remaining customers. At the outset, rate caps for remaining customers could be scheduled to be progressively reduced by amounts intended to reflect how much the utility ought to save if it had strong incentives to mitigate. For example, if the per kilowatt charge was initially capped at 9 cents for residential customers, including 4 cents to recover stranded costs, the rate might be set to decline by 5 percent per year for 5 years to reflect anticipated mitigation savings.<sup>49</sup> The minimum reasonable mitigation amount would be the costs the utility

would avoid by not producing the power that the departing customer had used. Under this approach, the utility has full incentive to mitigate and uncertainty about the amount is eliminated.

None of the alternative mitigation approaches is perfect. Coordination between methods used by the states and by FERC to account for mitigation savings may be important in providing a smooth and swift transition to increased competition. Differences in treatment and different levels of incentive to mitigate may lead to uncertainty about the amount of mitigation that will be recognized and hence about the amount of customers' net stranded cost liability. Uncertainty about the magnitude of the risk and about who would shoulder it could delay or diminish interest in open access, in turn delaying the establishment of competition in power generation.<sup>50</sup> Coordination among FERC and state regulators may reduce confusion, complexity, and litigation delays.

### **C. Stranded Costs Might Be Recovered From the Entire Customer Base That Benefitted From These Costs**

FERC proposes to assign stranded costs to individual departing customers, so that stranded wholesale generation costs will be assessed and recovered on a utility-by-utility basis.<sup>51</sup> This approach would lead to high surcharges in areas served by utilities with high stranded costs and little or no such charges in some other areas. Some investments that now appear as stranded costs may have been intended to benefit customers over a wider area than a single utility.<sup>52</sup> Arguably, stranded costs that benefitted broader groups of customers should be collected from that broader group of customers if the stranded cost recovery program is to function as a user fee. A broader scope could also cushion the "rate shock" to remaining customers. National or regional assessment methods could recover stranded costs undertaken to benefit these wider groups of customers.

## **VI. Conclusions**

Open access to transmission services should enable increased competition among power generators to benefit consumers through lower rates. The operational unbundling approach to open access would separate control of access to the transmission grid from ownership of generation. This approach could be more effective than one alternative, functional unbundling, and less costly to implement than another alternative, full divestiture. Indeed, operational unbundling has nearly all the advantages of complete divestiture, at lower cost.

In determining the appropriate level of regulation for wholesale electricity prices under an open-access regime, the analysis set out in the FTC and Department of Justice Horizontal Merger Guidelines provides a logical framework for evaluating the likely economic effects of concentration among suppliers, including suppliers of electric power. As recent experience with the British electricity system suggests, dominant suppliers might exercise market power even in open access conditions. Competitive conditions among generation suppliers will still have to be examined.

However FERC chooses to achieve open access to transmission services, it is critical that transmission pricing be made economically efficient. The competitively vital secondary market for rights to transmission service should be encouraged, and the price cap on resales should be lifted.

This comment takes no position on the net costs or benefits of recovering stranded costs from future, present, or past customers. But if FERC adopts a program to recover stranded costs, the form that program takes could be important, in part because other jurisdictions could use it as a model. Setting temporary rate caps for remaining customers could ease the transition to a more competitive industry by

dampening the shock to customers with fewer alternatives. Structuring stranded cost recovery as excise charges is likely to distort price signals and lead to inefficiencies; instead, the method chosen should minimize price distortions. Requiring that all savings from mitigation of stranded costs be passed through to customers is likely to undermine utilities' incentives to innovate; instead, methods that maintain incentives to innovate should be considered. Recovery on a wider geographic basis could be appropriate for those investments that were undertaken to benefit a wider group of customers.

Respectfully submitted,

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## Notes

- 1 This comment represents the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Federal Trade Commission or any individual Commissioner. Inquiries regarding this comment should be directed to John C. Hilke (202-326-3483).
- 2 60 Fed. Reg. 17,662 (April 7, 1995) [hereinafter “Notice” or “Proposal”].
- 3 The staff of the FTC has commented on electric power regulation to the South Carolina Legislative Audit Council (February 28, 1994) (“South Carolina Comment”), the California Public Utilities Commission, Nos. R94-04-031 and I.94-04-032 (June 8, 1994), and to FERC, Dkt. RM85-17-000 (1985). In addition, the staff of the FTC has often commented to FERC about natural gas regulation; *see* comments about pipeline regulation after partial wellhead decontrol, Dkt. RM85-1-000 (1985), alleged anticompetitive practices of pipeline marketing affiliates, Dkt. RM87-5-000 (1987), and capacity brokering, Dkt. RM88-13-000 (1988). The FTC regularly reviews proposed mergers involving gas and electric utility companies.
- 4 Vertical integration was believed necessary, in part, to assure system reliability. Paul Joskow and Richard Schmalensee, *Markets for Power* (1983). Experience under the Public Utility Regulatory Policies Act of 1978 and the Energy Policy Act of 1992 has “demonstrated that traditional, vertically integrated public utilities need not be the only sources of *reliable* power.” Notice, *supra* note 2, at 17,670 (emphasis added).
- 5 *See* Timothy Brennan, *Why Regulated Firms Should Be Kept Out of Unregulated Markets: Understanding the Divestiture in United States v. AT&T*, 32 ANTITRUST BULLETIN 741 (1987), and *Cross Subsidization and Cost Misallocation by Regulated Monopolists*, 2 J. REG. ECON. 37 (1990).
- 6 Under the FERC “functional unbundling” proposal, utilities’ tariffs would be required to separate generation from transmission and itemize the components of transmission and ancillary services for each transmission service provided. Utilities would be barred from using private information to favor their own operations; rather, a utility and its transmission customers would be required to use the same electronic network to obtain transmission information when buying or selling power. Notice, *supra* note 2, at 17,681.
- 7 Brennan, *Cross Subsidization and Cost Misallocation by Regulated Monopolists*, *supra* note 5; *see also* Timothy Brennan and Karen Palmer, *Comparing the Costs and Benefits of Diversification by Regulated Firms*, 6 J. REG. ECON. 115 (1994). The monopolist’s entry could also be beneficial if the unregulated market is uncompetitive and entry by the monopolist could improve competitive conditions there, net of the distortions its entry could introduce.
- 8 The costs and benefits of vertical integration are traditionally treated as part of the corporate make or buy tradeoff where benefits include the realization of scope economies. For a general treatment of integration considerations, *see* Oliver Williamson, *MARKETS AND HIERARCHIES* (1975).

9 Occidental-MidCon, 109 F.T.C. 167 (1986) (divestiture of pipeline ordered, to ensure that the owner of unregulated gas reserves did not inflate the price of the self-supplied input). Moreover, in circumstances similar to those FERC is considering here, structural remedies have been called for when necessary to provide non-integrated buyers with an independent source of a product they would otherwise have to purchase from their competitor. *See, e.g.,* Tele-Communications Inc. & Liberty Media Corp., FTC Dkt. No. 941-0008 (Nov. 15, 1993) (consent order accepted for public comment; later withdrawn when transaction was superseded by another) (Commissioners Owen & Azcuenaga dissenting); Arco-Union Carbide, 114 F.T.C. 250 (1991) (order required downstream divestiture sufficient to attract and support entry in upstream market).

10 A major transaction cost of achieving full divestiture of public utility firms would be litigation about compliance with coverage ratio requirements in their bond covenants. In addition, changing ownership of nuclear power facilities will be a complex and difficult task, involving more stringent asset coverage ratios. These problems would be particularly difficult to deal with on a nationwide basis; however, they would not necessarily preclude divestiture on a company by company or even regional basis.

11 South Carolina Comment, *supra* note 3, Appendix B. The operational unbundling concept has been incorporated into electricity reforms abroad and is the centerpiece of the recent proposal by the California Public Utility Commission. Both the United Kingdom and New Zealand have established independently operated grid operators. In New Zealand, generation firms and the local distribution companies share ownership interest in the grid operator. In California, the PUC majority has proposed that transmission lines would continue to be owned by the franchised utilities, but the utilities would grant full operational control to an independent system operator.

In our view the most effective step which we can promote to resolve the vertical market power issues focuses on the operation of the transmission assets which are currently owned by utilities in California. While some have called for the utilities to divest themselves of ownership, we have concluded that our objectives can likely be met by a less drastic alternative. We propose that ... all participants in the pool transfer the operational control of all transmission assets to an independent system operator.

California Public Utilities Commission, Proposed Policy Decision, Dkts. R.94-04-031 and I.94-04-032 (May 24, 1995), Section I.D.a. *See also* William Hogan, ELECTRICITY TRANSMISSION AND EMERGING COMPETITION (1995).

12 Separate operation could facilitate more effective direct regulation of transmission, such as through rate caps tied to inflation and adjusted to account for anticipated technological improvements. And control over transmission might be assigned to a body that includes parties, such as local distribution company customers, with an interest in resisting transmission market power. *See* South Carolina Comment, *supra* note 3, Appendix B. Operational unbundling, by stimulating cost reductions, might even improve productive efficiency.

13 The countervailing concerns, about new forms or opportunities for discrimination or cross subsidization and loss of economies of scope, may also be moderated by innovative pricing regulations. For example, price caps may curtail cross subsidization opportunities as well as limit market power. Ronald Braeutigam and John Panzar, *Diversification Incentives Under "Price Based" and "Cost Based" Regulation*, 20 RAND J. ECON. 373 (1989).

- 14 In the natural gas industry, FERC has considered similar problems of assessing the costs and benefits of requiring complete corporate separation. For example, FERC considered whether natural gas pipelines should be permitted to operate marketing subsidiaries. The staff of the FTC, in its comment on that issue, suggested that FERC experiment with measures short of formal separation or prohibition, such as permitting pipelines to own marketing affiliates but prohibiting an affiliate from entering transactions with its affiliated pipeline. Comment on marketing affiliates, *supra* note 3.
- 15 Notice, *supra* note 2, at 17,688-89 (section III.C.5.c).
- 16 Although the Horizontal Merger Guidelines are applied to merger analysis, the general principles of industrial organization economics on which they are based are applicable to evaluations of market power generally.
- 17 Concentration is measured by the Herfindahl-Hirschman Index (HHI), which is the sum of the squares of the market shares of individual firms. The Guidelines characterize markets as unconcentrated (HHI below 1,000), moderately concentrated (HHI from 1,000 - 1,800), or highly concentrated (HHI above 1,800). Horizontal Merger Guidelines, § 1.5.
- 18 *See generally* Horizontal Merger Guidelines; F. M. Scherer and David Ross, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE (1990); and Douglas Greer, INDUSTRIAL ORGANIZATION AND PUBLIC POLICY (1992).
- 19 Markets in which entry is quick and no sunk costs are entailed are termed contestable markets. In such markets, market power is unlikely even if there is only one current supplier. *See* William J. Baumol et al., *On the Theory of Perfectly-Contestable Markets*, in NEW DEVELOPMENTS IN THE ANALYSIS OF MARKET STRUCTURE (Joseph Stiglitz & C. Frank Mathewson, eds., 1986); William J. Baumol et al., CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE (1982); South Carolina Comment, *supra* note 3, Appendix B.
- 20 FERC's decisions about wholesale interstate transmission pricing methodology are likely to have a significant impact on the definition of the relevant geographic market. Distance charges should provide more efficient signals for transmission decisions than do "postage-stamp" charges, which are independent of actual distance, since transmission costs are more strongly related to distance than to the number of utility territories crossed. Geographic markets defined with respect to distance charges should correspond to underlying cost conditions more accurately than market defined with respect to postage-stamp pricing. Whether the resulting geographic markets are larger or smaller will depend on particular franchise configurations.
- 21 David Newberry, Power Markets and Market Power (1995, unpublished). In the U.K. system, "merit dispatch" — that is, use of the lowest price sources to meet projected demand — for each half hour is based on bids submitted the previous day. Thus, there are thousands of separate electricity "markets" each year, denominated by time because of the impossibility of storing large quantities of electricity economically for later use.
- 22 Newberry, *supra* note 21; *see also* South Carolina Comment, *supra* note 3, at 52-53, which observed:

Evaluators of the British system have emphasized one major drawback in the manner the reforms have been implemented. Although there are ten generator firms, the structure of the generating industry is essentially a duopoly because the government's generation capacity was divided into only two entities. Consequently, these two firms may be in a position to affect the market clearing price substantially, by withholding even a small portion of their capacity. In an effort to discourage strategic capacity withholding, new franchising rules require an operationally capable plant to offer a bid and require the major generating companies to offer for sale any plants that they are going to close or "moth ball."

- 23 Newberry, *supra* note 21. In the U.K., nuclear plants, with their low marginal costs, are run continuously. Natural gas plants are run only infrequently, as peaking capacity. Coal-fired plants tend to be the middle cost units.
- 24 In the U.K. experience, prices at peak periods have risen dramatically because the peaking plants are so costly to operate. In evaluating peak prices, it is important to distinguish scarcity rents from effects of market power. Scarcity rents are the excess of price over cost that results when demand exceeds what a competitive market can supply (at that price) in the short run. Scarcity rents are an economic signal inviting entry or expansion. By contrast, market power effects appear when supply falls short of the competitive level because suppliers recognize that their output choices influence price. By withholding capacity, either individually, if they are dominant firms, or collectively, if they are coordinating their actions, firms with market power can profitably increase prices above the competitive level. If entry and expansion of generation is relatively easy and rapid, as FERC believes, then high peaking prices would probably represent scarcity rents, that is, signals encouraging entry of peaking capacity. By contrast, if higher prices do not lead to capacity expansion, FERC should examine the market conditions more closely to determine whether the price increases are due to collusion or the abuse of a monopoly position.
- 25 Conversely, if overall concentration was low but concentration among middle-cost generators was high, a more detailed analysis of the potential for market power could be called for. Identifying these factors will require understanding which plants are high-, middle-, and low-cost in the relevant markets; *cf.* note 23, *supra*.
- 26 The importance of transmission pricing policy to the development of competitive bulk power markets is discussed in more detail in the comment submitted by the Department of Justice in the transmission pricing inquiry, FERC Dkt. 93-19 (1995).
- 27 Notice, *supra* note 2, at 17,674.
- 28 FERC already allows public utilities to offer transmission rights, and owners of such rights may resell them. So far, though, few utilities have elected to sell such rights. The FERC proposals are likely to increase significantly the number and variety of such services available from primary owners of transmission rights. To the extent that FERC actively supports secondary market sales, the volume and variety of transmission rights available through secondary sales are also likely to increase. Primary and secondary transmission rights are likely to be good substitutes for one another, so active secondary markets would provide competition for the primary markets.
- 29 See comment on capacity brokering, *supra* note 3, at 3-4.

- 30 Comment of the Staff of the Bureau of Economics, Study of the High Density Rule, Federal Aviation Administration, Department of Transportation, Dkt. No. 27,664 (November 23, 1994), pp. 7-9.
- 31 See discussion of the function of scarcity rents, *supra* note 24.
- 32 Notice, *supra* note 2, at 17,685.
- 33 A general policy of lifting the ceiling on prices for resale of transmission service rights need not be inconsistent with a program of temporary, transitional caps on transmission rates to alleviate “rate shock” for certain classes of customers.
- 34 The remaining customers’ incentive to resist expansion of wholesale transmission capacity does not depend on whether power costs in the utility’s service area are high or low. Curtailing expansion could discourage customers in a high-cost area from exiting to seek cheaper “imported” power elsewhere, and fewer exiting customers would mean fewer potentially stranded costs. Curtailing expansion could discourage potential customers outside a low-cost area from bidding for cheap power to “export” from the area, and without that additional demand local power prices might remain lower. (This assumes output would increase until the marginal cost equaled the higher price that the new customers, bidding from higher cost areas, would be willing to pay.) In each case, the customers remaining with the utility could perceive the result as benefiting them, despite its inefficiency.
- 35 Notice, *supra* note 2, at 17,682 and 17,687.
- 36 Examinations of similar influences on local regulatory decisions include Leann Tigges and Mathew Clark, *Community, Class, and Cohesion in the Passage of Corporate Takeover Legislation*, 73 SOC. SCIENCE Q. 798 (1992), and Cletus Coughlin, Joseph Terza, and Vochira Arromeade, *State Government Effects on the Location of Foreign Direct Investment*, 20 REGIONAL SCIENCE PERSPECTIVES 194 (1990).
- 37 Notice, *supra* note 2, at 17,690. Some firms have incurred costs, included in their rate base, to comply with environmental requirements, provide subsidies for low income customers, and perform other programs that are not strictly associated with generation. It may well be desirable to retain these programs in some form. If these programs are unbundled, they might be funded through explicit surcharges or other fees on electricity consumption. The California PUC’s latest proposals, for example, call for continuation of funding for these programs with separate, explicit surcharges. California Public Utilities Commission, News Release, May 24, 1995, p. 6.
- 38 Mitigation cost savings, which would be deducted from the otherwise recoverable stranded costs, could result from efforts to continue to use the stranded assets, such as by promoting additional demand or providing innovative services, or from unanticipated changes in costs that make it possible to continue to use those assets.
- 39 Notice, *supra* note 2, at 17,691 n. 225: The maximum stranded cost exposure “ ... is the amount from which the competitive market value of the power that the customer would have purchased would be deducted to compute the amount of recoverable stranded costs (using the ‘revenues lost’ approach for calculating stranded costs ...) The utility will be required to make every effort to mitigate the amount of stranded cost charge.”

- 40 The economic efficiency benefits of stranded cost recovery may also include less distortion in the choice of electricity suppliers and lower capital costs for future utility investments. If incumbent suppliers are burdened by regulatory costs that entrants do not bear, entrants may take sales from incumbents even if incumbents have lower production costs. If investors perceive that unrecovered stranded costs increase risk, they may penalize future utility investments by requiring a higher risk premium. A fairness argument can also be made for stranded cost recovery. *See* William J. Baumol and J. Sidak, TRANSMISSION PRICING AND STRANDED COSTS IN THE ELECTRIC POWER INDUSTRY 98-111 (1995). The economic costs of a program for stranded cost recovery are discussed below. The major effects of a program for stranded cost recovery are likely to be distributional. In this respect, note that if investors have already anticipated that customers would exit and that utilities would somehow recover their stranded costs even without formal regulations to require it, then a program for recovering costs from customers could give these investors an unanticipated gain.
- 41 *See, e.g.*, Richard Musgrave and Peggy Musgrave, PUBLIC FINANCE IN THEORY AND PRACTICE 279-93 (5th ed. 1989).
- 42 The different approaches could also lead to different methods of payment, which themselves raise a concern about distortion. The amount of an excise charge that is eventually paid and the period of payment would vary based on future transmission usage. Firms may find it less costly, or less risky, to pay off a fixed sum than to carry an indeterminate liability for an indefinite period of time. Under the lump sum approach, customers might choose among alternative payment schemes (of equal present value).
- 43 *See* discussion and sources cited in South Carolina comment, *supra* note 3, at Appendix B.
- 44 Notice, *supra* note 2, at 17,705. FERC also proposes to adopt the rule that any exit fee in an existing wholesale contract will be considered sufficient to cover stranded costs for that customer. *Id.* at 17,693. FERC objectives also include permitting recovery of all stranded costs and recovering them from departing customers. This rule about exit fees could defeat those objectives. Under the traditional regulatory framework, a utility could reasonably expect that new establishments in its service areas would become its customers. In that setting, the exit fee for departing customers might be designed to recover costs during the interim between a customer's exit and the arrival of others to replace it. But open-access transmission requirements are likely to reduce the probability that a high cost utility can attract new customers or increase the time it takes to do so. Thus exit fees that were set in accordance with traditional expectations may be too low to recover all the costs incurred under open-access conditions.
- 45 Clifford Winston, Thomas Corsi, Curtis Grimm, and Carol Evans, THE ECONOMIC EFFECTS OF SURFACE FREIGHT DEREGULATION 16-27, 65 (1990), and John Ogur, Curtis Wagner, and Michael Vita, THE DEREGULATED AIRLINE INDUSTRY 10-16 (1988).
- 46 One of the advantages of rate cap regulation over traditional, cost-based rate of return regulation is that firms under a rate cap system retain full incentives to increase efficiency.
- 47 *See* David Sappington, *Designing Incentive Regulation*, 9 REV. IND. ORG. 245 (1993); PRICE CAPS AND INCENTIVE REGULATION, (Michael Einhorn, ed., 1991); and William Lewellan and David Mauer, *Public Utility Valuation, Risk, and Incentive Regulation*, 5 J. REG. ECON. 263 (1993).

- 48 If the stranded assets were divested, the market would determine the potential for mitigation. The net stranded cost to be recovered would be fixed, as the difference between the market price of the stranded assets and their historical cost in the utility's rate base. And the purchaser of the assets would have full incentives to operate them as efficiently as possible. Divestiture may not be a realistic option, though, because it would entail delays and administrative complications. *See discussion supra § II.B.*
- 49 This approach parallels the *ex ante* rate cap reductions used in the U.K.'s reform process to account for anticipated technological progress. *See* discussion and sources cited in South Carolina comment, *supra* note 3, at n. 124; *see also* M. E. Beesley and S. C. Littlechild, *The Regulation of Privatized Monopolies in the United Kingdom*, 20 RAND J. ECON. 454 (1989).
- 50 Delays in utilization of open access may also result from opportunistic exemptions of capacity from the open access provisions. FERC may wish to examine the incentives and actions of public utilities to "lock in" exemptions from open access prior to the announcement of these proposals on July 11, 1994. Notice, *supra* note 2, at 17,690 nn. 221 and 223. To the extent that large blocks of capacity have been exempted from open access because of contracts recently signed, FERC may wish to consider limiting such exemptions to contracts in place some months before the announcement.
- 51 Notice, *supra* note 2, at 17,696-97.
- 52 One example is environmental improvements, whose benefits need not honor franchise territory boundaries. Another example may be reserve and peaking generation costs which, under "obligation to serve" regulation, reduce the risk of service disruptions for any area to which such reserve and peaking power can be transmitted.



# UNITED STATES

## PART III \*

### BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION DEPARTMENT OF ENERGY WASHINGTON, D.C.

In the Matter of )  
 )  
Inquiry Concerning Commission's ) Docket No. RM96-6-000  
Merger Policy Under the Federal )  
Power Act )

#### Comment of the Staff of the Bureau of Economics of the Federal Trade Commission

#### I. Introduction and Summary

The staff of the Bureau of Economics of the Federal Trade Commission (FTC)<sup>1</sup> appreciates this opportunity to respond to the Federal Energy Regulatory Commission's (FERC) notice of inquiry.<sup>2</sup> The staff of the FTC has a longstanding interest in regulation and competition in energy markets, including proposals to reform regulation of the natural gas and electric power industries.<sup>3</sup>

As we observed in our comment on open access,<sup>4</sup> competitive opportunities in the generation and transmission of electric power have burgeoned in the last decade, stimulated by changes in relative costs of different types of generating plants and by changes in laws and regulations. To remove obstacles to increased competition, FERC has approved rules that call for utilities to offer open, nondiscriminatory access to wholesale transmission services. FERC now inquires: what is the appropriate merger analysis for FERC in this new technical and regulatory setting?

**Detailed competition analysis, including assessment of the relevant product and geographic markets (including market structure), competitive effects, entry conditions, and efficiencies, is the**

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\* Part III represents the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Federal Trade Commission or any individual Commissioner.

**appropriate approach to screen out mergers that will harm competition and consumers.** In our view and experience, there is no good substitute in the process of determining the competitive effects of a proposed merger for detailed competition analysis addressing the principal supply and demand conditions that shape pricing and output decisions in a market. Such an inquiry is likely to increase the accuracy of merger analysis and reduce the incidence of errors in decisions. Errors may include allowing an anticompetitive acquisition or blocking a competitively neutral or procompetitive acquisition. Both kinds of errors may be costly to consumers.

**In order to systematize its merger analysis, FERC may wish to rely upon the Horizontal Merger Guidelines issued by the FTC and Department of Justice in 1992.** The Guidelines provide a framework for merger analysis based on general principles of economics and law. The Guidelines articulate the steps in analysis as well as providing examples of particularly salient facts and conditions in merger analysis. In this submission, we provide some initial economic perspectives on competition issues likely to arise in the electrical power industry. The appendix is the FTC/DOJ model second request document and narrative which commonly is used as a starting point for FTC staff in gathering detailed information about a proposed acquisition. FERC may wish to review the sources and types of information it receives in its merger analysis in order to be assured that the pertinent data and documents are being obtained.

**It appears unlikely that open access in and of itself will eliminate a need for merger analysis in all electricity markets.** While open access is likely to increase the size of geographic markets and make entry easier, bottlenecks, distance, demand peaks, and institutional constraints may well remain sufficient to raise competition problems in some electricity markets. As we stated in our open access comment:

Open access will affect, but not obviate, FERC's assessment of competitive conditions in electric power generation, including its analysis of "generator dominance." ... Expanding the number of suppliers potentially available is likely to make the electric power system more efficient and more competitive, but there may be circumstances, even under open access conditions, in which dominant suppliers might be able to exercise market power. Competitive conditions among mid-cost plants could be particularly significant.

Experience in the open access environment of the U.K. (discussed below in section 3) appears to have been sufficient to dispel the hope that open access will uniformly obviate market power concerns.

## **II. The FTC/DOJ Horizontal Merger Guidelines Provide a Strong Framework for Merger Analysis**

A useful framework for examining the competitive effects of industry concentration and other market characteristics is set out in the Horizontal Merger Guidelines issued in 1992 by the Department of Justice and the Federal Trade Commission.<sup>5</sup> Under the Horizontal Merger Guidelines, merger analysis begins with delineation of the relevant product and geographic markets. Market concentration is then evaluated for that product and that geographic area.<sup>6</sup> The Guidelines anticipate that, if concentration is high, coordinated interaction (collusion) or the exercise of unilateral market power will be more likely, in the absence of ameliorating factors such as easy entry.<sup>7</sup> If the entry of new competition would rapidly and effectively constrain a price increase, however, then a dominant firm or collusive group could not exercise market power even in a concentrated market.<sup>8</sup>

Product Market and Geographic Market: According to the Horizontal Merger Guidelines:

A market is defined as a product or group of products and a geographic area in which it is produced or sold such that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future producer or seller of those products in that area likely would impose at least a "small but significant and non-transitory" increase in price, assuming the terms of sale of all other products are held constant. A relevant market is a group of products and a geographic area that is no bigger than necessary to satisfy this test. The "small but significant and non-transitory" increase in price is employed solely as a methodological tool for the analysis of mergers: it is not a tolerance level for price increases.

Given that the product market is defined in terms of the demand conditions under which a hypothetical monopolist could profitably raise price by a small non-transitory amount and that electricity cannot be readily stored for subsequent consumption, any individual electrical industry merger is likely to involve a number of separate product markets that are based in large part upon reliability or accessibility.<sup>9</sup> Demand characteristics for electricity and transmission services are likely to differ, for example, at different times of the day, different seasons of the year, different points in the business cycle, with different levels of risk of service interruption, and for different lengths of contract. For example, one could distinguish three product markets based on different durations of supply agreements: short-term energy or capacity, intermediate capacity, and long-term capacity. (Werden, 1996) Potentially, sales to differently situated customers may constitute separate markets if differential pricing is feasible.

Perhaps the most critical element in an analysis of electricity mergers is the extent of the relevant geographic market. Defining the geographic market may be difficult because it may involve many factors and factor interactions. The hypothetical monopolist in a particular hypothesized geographic market may face very different degrees of constraint from more distant alternative supply sources at different times of the day, different times of the year, different points in the business cycle, etc., leading to the conclusion that the geographic market differs for different product markets related to the same acquisition. Differences in the degree and sources of geographic competition may arise because the temporal distinctions between product markets may well be associated with variations in transmission conditions, generating conditions, and existing transmission and generating obligations. For example, supply from generator X that is currently contractually obligated to supply local load is unlikely to be part of the market for short-term capacity to serve distant area Y. However, supply from generator X might well be in the market for intermediate-term capacity to serve area Y, if the local contract of generator X expires before the intermediate term.

While the large number of relevant variations in conditions may make prediction of market participants difficult in the abstract, our experience suggests that parties may develop or commission analyses of transportation costs and other factors involved in geographic market delineation. In the case of electricity suppliers, computerized models of transmission systems developed and used by the merging parties may be fruitfully employed to assess critical elements for product and geographic market analysis. With such models, it may be possible to simulate the effects of a small, non-transitory price increase imposed by groupings of power suppliers over various alternative geographic areas to determine whether the price increases would be profitable for a hypothetical monopolist and therefore which of the areas constitute relevant geographic markets. Firms may perform many of the most relevant modeling exercises in the course of their own assessment of the implications of a proposed acquisition. In addition, documents recording actual suppliers under a variety of pricing conditions or under various prospective pricing conditions may provide similar insight.

As discussed below, changes in transmission pricing and other regulations can potentially alter the product and geographic market. Open access, congestion-based pricing, distance-based pricing, and other policies can dramatically affect the definition of the relevant market(s) for antitrust analysis. Firms' documents, including analyses of the effects of such changes on the incentives of likely competitors, may be particularly helpful in assessing prospective product and geographic market definitions.

Because of the great importance of geographic market delineation in prospective electric power industry mergers, FERC may wish to consider developing sufficient data and system modeling tools to be able to expeditiously screen mergers on the basis of the merger's likely relevant geographic market. An optimally designed system might allow FERC reliably to examine the likely relevant geographic market under different assumptions about future transmission rates, different projected transmission improvements, and different generation siting assumptions. Such an approach could reduce both private and governmental costs by speeding the analysis while providing reliable evaluations. Taking such a proactive approach may be cost effective in circumstances where regulatory changes at the state as well as Federal level are apparently prompting widespread industry restructuring. FERC may wish to consider technical conferences, investment in proprietary modeling techniques, or some other approach to obtain and update this type of system modeling capability.

Market Structure: With product and geographic markets defined, analysis of market structure is the next step in the Guidelines approach. When market concentration is high, there is an increased probability of anticompetitive effects (either due to unilateral market power or to coordinated interaction) absent ameliorating factors. Market concentration may be measured using either output or capacity.<sup>10</sup> In more homogeneous product markets, capacity is the more relevant measure while in differentiated product markets, output-based measures are usually a better indicator of firms' future competitive significance.<sup>11</sup> On this basis, the structure of intermediate- and long-term electricity supply markets is more likely to be reasonably measured by capacity. Short-term electricity supply markets may be better measured on the basis of output if differentiating factors such as reliability and access are important. Capacity or output which is contractually obligated to one set of customers may not be relevant in calculating market shares of potential suppliers for other customers.<sup>12</sup>

Competitive Effects: Once market definition and structural conditions have been determined, the analysis next turns to the issue of possible anticompetitive effects. This phase of analysis seeks to identify whether the acquisition would create or enhance market power, how the market power would be exercised, and who would be adversely affected. The analysis is divided into unilateral market power and coordinated interaction market power inquiries. The former focuses on how the merged party acting alone could exercise market power, while the later focuses on how the creation of the merged party might influence interactions between current suppliers or between current and potential suppliers. The predicted, merger-related effects of these interactions could be procompetitive or anticompetitive on net. Under the Guidelines, the antitrust agency staff seeks to identify specific scenarios under which either form of market power may arise in one or more relevant markets. In assessing these scenarios, agency staff utilize, for example, insights from customers and third parties, documents from the merging firms, past industry behavior, economic theory, and experience in other industries.

Entry and Efficiencies: The next two elements of the Guidelines analysis are entry and efficiencies. Likely, timely, and sufficient entry may obviate concern about anticompetitive effects by assuring that increased supply from independent sources will defeat efforts to exercise market power. Lags in regulatory approvals and construction for new generating and transmission facilities may, however, make the entry element in merger analysis of limited significance for most electric power merger cases. Experience suggests that most generation and transmission projects take longer than two years. If so, according to the Guidelines, these forms of entry are unlikely to respond to an anticompetitive merger

in time to deter or constrain the exercise of market power. (Werden, 1996) Should regulatory lags become less lengthy, however, entry conditions may become a more important consideration in analyzing electric utility mergers. Efficiencies associated with the specific acquisition<sup>13</sup> may also modify the final conclusions when anticompetitive effects are identified, if these efficiency gains are important and demonstrable.

Remedy: Finally, merger analysis must turn to the issue of remedy. The ideal remedy for an anticompetitive merger would remove the anticompetitive effect without hampering pro-competitive or efficiency-enhancing aspects of the acquisition. Sometimes this can be accomplished through divestiture of some or all of the overlapping assets without blocking the merger in its entirety.

### **III. In Assessing a Proposed Merger, Competitive Conditions in Generation Must Still Be Monitored Under Open Access**

Although open access may lead to increased competition in most markets, FERC should still examine actual market concentration and competitive conditions in determining whether to allow each proposed acquisition. Introducing open access to transmission would not prevent completely the exercise of market power in generation, but it is likely to limit the situations of competitive concern about market dominance through acquisitions. Open access could broaden the relevant geographic market for generation by alleviating impediments to wholesale wheeling. Broadening geographic markets typically results in lower concentration and thus reduced risk of market power. Opening a system to a larger number of generating plants could also lead to operating efficiencies, by more completely capturing gains from trade among facilities with different costs and by reducing the system's reserve requirements. Open access could increase the likelihood that a price increase attempted by the merger parties will be met by timely and sufficient entry, either by new generator construction, new transmission capacity, or new transmission rights. And with open access, entrants would be more likely to enjoy nondiscriminatory prices for transmission service. But open access alone would not eliminate the need to consider the problem of generation market power. Although market dominance situations may become rarer, they will not necessarily disappear, so the specifics of each case may still have to be evaluated.

Recent empirical work on electricity generation pricing in the United Kingdom may provide some insight about generator dominance and how to limit its effects.<sup>14</sup> The U.K.'s electric power reforms have taken place within the context of high concentration in generation. The findings of the U.K.'s electricity regulator and recent academic research show that the two dominant generators have exercised considerable control over price in many periods.<sup>15</sup>

Most relevant for this inquiry, however, is that for most of the year, the market price in the U.K. is determined by relatively few plants -- those with middle levels of cost.<sup>16</sup> Low cost plants are always dispatched (that is, operated). High cost plants are dispatched only at brief demand peaks or in emergencies. In most periods the marginal plants that set the price are the middle cost plants. Given this pattern, greater competition among middle cost plants could make the exercise of market power more difficult even if capacity at the extremes is concentrated.<sup>17</sup> In deciding whether to relax regulation in a market under open access, attention might be focused on the ownership structure of the middle-cost sources. Higher concentration overall may be more acceptable if concentration among middle-cost plants is low.<sup>18</sup>

#### **IV. Efficiency Gains from Open Access Depend on Concurrent Reform of Transmission Pricing**

##### **A. Transmission Rates Must Be Made Responsive to Economically Relevant Criteria**

Economically efficient transmission rates will be vital to obtaining the potential efficiency benefits of open access<sup>19</sup> and resolution of transmission pricing questions is also essential in the geographic market element of merger analysis. The transmission grid is likely to remain a regulated monopoly, no matter what method is used to ensure or encourage open access to it. FERC acknowledges that current “postage stamp” transmission rates are not sensitive to distance and actual electricity flows, and thus may not lead to economically efficient employment of, or investment in, generating capacity.<sup>20</sup> Unless transmission rates are economically efficient, open access will not serve to give buyers, sellers, and investors the right signals for developing new service alternatives, assessing where new plant and transmission lines should be located, or determining when entry is warranted. Transmission rates should send signals to allocate resources efficiently in the short run and to invest efficiently in the long run. Thus, transmission rates should respond to such factors affecting marginal cost as distance and time of day, and, where capacity constraints limit output, to the incremental cost of removing bottlenecks or adding capacity.

FERC’s decisions about wholesale interstate transmission pricing methodology are likely to have a significant impact on the definition of the relevant geographic market. For example, charges that increase with distance should provide more efficient signals for transmission decisions than do “postage-stamp” charges, which are independent of actual distance, since transmission costs are more strongly related to distance than to the number of utility territories crossed. Geographic markets defined with respect to distance charges should correspond to underlying cost conditions more accurately than market defined with respect to postage-stamp pricing. Whether the resulting geographic markets are larger or smaller will depend on particular franchise configurations.

## V. Conclusions

Open access to transmission services should enable increased competition among power generators to benefit consumers through lower rates. In determining the appropriate level of regulation for wholesale electricity prices under an open-access regime, the analysis set out in the FTC and Department of Justice Horizontal Merger Guidelines provides a logical framework for evaluating the likely economic effects of concentration among suppliers, including suppliers of electric power. As part of its revised merger analysis, FERC may wish to develop electrical system models to help expeditiously assess the relevant geographic market in proposed mergers. As recent experience with the British electricity system suggests, dominant suppliers might exercise market power even in open access conditions. Competitive conditions among generation suppliers will still have to be examined in the context of an open access environment. However FERC chooses to achieve open access to transmission services, it is critical that transmission pricing be made economically efficient.

Respectfully submitted,

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May 7, 1996

## Notes

- 1 This comment represents the views of the staff of the Bureau of Economics of the Federal Trade Commission. They are not necessarily the views of the Federal Trade Commission or any individual Commissioner. Inquiries regarding this comment should be directed to John C. Hilke (202-326-3483).
- 2 61 Fed. Reg. 17,662 (February 7, 1996) [hereinafter “Notice” or “Proposal”].
- 3 The staff of the FTC has commented on electric power regulation to FERC, Dkt. RM95-8-00 and RM94-7-001 (August 7, 1995), to the South Carolina Legislative Audit Council (February 28, 1994) (“South Carolina Comment”), the California Public Utilities Commission, Nos. R94-04-031 and I.94-04-032 (June 8, 1994), and to FERC, Dkt. RM85-17-000 (1985). In addition, the staff of the FTC has often commented to FERC about natural gas regulation; *see* comments about pipeline regulation after partial wellhead decontrol, Dkt. RM85-1-000 (1985), alleged anticompetitive practices of pipeline marketing affiliates, Dkt. RM87-5-000 (1987), and capacity brokering, Dkt. RM88-13-000 (1988). The FTC regularly reviews proposed mergers involving gas and electric utility companies.
- 4 FERC, Dkt. RM95-8-00 and RM94-7-001 (August 7, 1995).
- 5 Although the Horizontal Merger Guidelines are applied to merger analysis, the general principles of industrial organization economics on which they are based are applicable to evaluations of market power generally. Publications elaborating the Guidelines and applying them to the electrical power industry include: Einhorn, Michael, *From Regulation to Competition: New Frontiers in Electricity Markets*, Boston: Kluwer Academic Publishers, 1994; Frankena, Mark, and Bruce Owen, *Electric Utility Mergers: Principles of Antitrust Analysis*, Westport, Conn.: Praeger Publishers, 1994; and Werden, Gregory, “Identifying Market Power in Electric Generation,” *Public Utilities Fortnightly* (February 1996), pp. 16-21.
- 6 Concentration is measured by the Herfindahl-Hirschman Index (HHI), which is the sum of the squares of the market shares of individual firms. The Guidelines characterize markets as unconcentrated (HHI below 1,000), moderately concentrated (HHI from 1,000 - 1,800), or highly concentrated (HHI above 1,800). Horizontal Merger Guidelines, § 1.5.
- 7 *See generally* Horizontal Merger Guidelines; F. M. Scherer and David Ross, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* (1990); and Douglas Greer, *INDUSTRIAL ORGANIZATION AND PUBLIC POLICY* (1992).
- 8 *See generally* Guidelines § 3. Indeed, if entry is quick and the costs of entry are recoverable if the entry does not succeed, the exercise of market power is unlikely even if there is only one current supplier. *See* Guidelines §1.32; William J. Baumol et al., *On the Theory of Perfectly-Contestable Markets*, in *NEW DEVELOPMENTS IN THE ANALYSIS OF MARKET STRUCTURE* (Joseph Stiglitz & C. Frank Mathewson, eds., 1986); William J. Baumol et al., *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* (1982); South Carolina Comment, *supra* note 3, Appendix B.

9 The remaining materials in this section borrow from the 1992 Guidelines, Frankena, Mark, and Bruce Owen, *Electric Utility Mergers: Principles of Antitrust Analysis*, Westport, Conn.: Praeger Publishers, 1994; Frankena, Mark, “Electric Utility Mergers: Trends & Antitrust Update,” Washington, D.C.: Economists, Inc., 1996; and Werden, Gregory, “Identifying Market Power in Electric Generation,” *Public Utilities Fortnightly* (February 1996), pp. 16-21.

10 See note 6.

11 See Guidelines §1.41.

12 Id.

13 The Guidelines do not generally give weight to efficiencies which could be obtained through less anticompetitive means. Such efficiencies need not be lost to society in the event the merger is blocked.

14 David Newberry, *Power Markets and Market Power* (1995, unpublished). In the U.K. system, “merit dispatch” — that is, use of the lowest price sources to meet projected demand — for each half hour is based on bids submitted the previous day. Thus, there are thousands of separate electricity “markets” each year, denominated by time because of the impossibility of storing large quantities of electricity economically for later use.

15 Newberry, *supra* note 14; see also South Carolina Comment, *supra* note 3, at 52-53, which observed:

Evaluators of the British system have emphasized one major drawback in the manner the reforms have been implemented. Although there are ten generator firms, the structure of the generating industry is essentially a duopoly because the government’s generation capacity was divided into only two entities. Consequently, these two firms may be in a position to affect the market clearing price substantially, by withholding even a small portion of their capacity. In an effort to discourage strategic capacity withholding, new franchising rules require an operationally capable plant to offer a bid and require the major generating companies to offer for sale any plants that they are going to close or “moth ball.”

16 Newberry, *supra* note 14. In the U.K., nuclear plants, with their low marginal costs, are run continuously. Natural gas plants are run only infrequently, as peaking capacity. Coal-fired plants tend to be the middle cost units.

17 In the U.K. experience, prices at peak periods have risen dramatically because the peaking plants are so costly to operate. In evaluating peak prices, it is important to distinguish scarcity rents from effects of market power. Scarcity rents are the excess of price over cost on inframarginal units of output in a competitive market during peak demand periods. Scarcity rents are an economic signal inviting entry or expansion. By contrast, market power effects appear when supply falls short of the competitive level because suppliers recognize that their output choices influence price. By withholding capacity, either individually, if they are dominant firms, or collectively, if they are coordinating their actions, firms with market power can profitably increase prices above the competitive level. If entry and expansion of generation is relatively easy and rapid, as FERC believes, then high peaking prices would probably represent scarcity rents, that is, signals encouraging entry of peaking capacity. By contrast, if higher prices do not

lead to capacity expansion, FERC should examine the market conditions more closely to determine whether the price increases are due to collusion or the abuse of a monopoly position.

- 18      Conversely, if overall concentration was low but concentration among middle-cost generators was high, a more detailed analysis of the potential for market power could be called for. Identifying these factors will require understanding which plants are high-, middle-, and low-cost in the relevant markets; *cf.* note 14, *supra*.
- 19      The importance of transmission pricing policy to the development of competitive bulk power markets is discussed in more detail in the comment submitted by the Department of Justice in the transmission pricing inquiry, FERC Dkt. 93-19 (1995).
- 20      Notice, *supra* note 2, at 17,674.

# EUROPEAN COMMISSION

## PART I \*

The European Commission will consider the issues from the perspective of Community law and policy, consideration of the systems in force in the member countries will be a matter for the Member States.

### **Vertical integration**

The proposed Directive on Common Rules for the Internal Market in Electricity ("the draft Directive") as presented in the common position of the Council, provides for the separation of accounts of vertically integrated electricity undertakings. This requires keeping separate internal accounts, and making public in notes to the annual accounts a profit and loss account and balance sheet for each of production, high voltage transmission and distribution (distribution includes both local transmission and supply).

### **Monopolies**

The draft Directive ends any production monopoly, in providing for an option between a system of production authorisations (the market decides on the type and amount of capacity required) or invitation to tender to build and operate power stations and supply the power to the network (in principle planning determines the type and amount of capacity). However, in the "invitation to tender" system, there must also be provision for separate authorisation for independent producers who do not carry out transmission or distribution functions in the electricity system where they are established.

The draft Directive will end any supply monopoly as regards large industrial customers, but does not yet impose the end of any monopoly over supplies to distributors. Member States will be required to allow customers (or if they so choose, distributors representing them) accounting for an increasing share of national electricity consumption to shop around. Assuming the Directive enters into force on 1.1.1997, customers representing about 23 per cent of each national market will be allowed to shop around by 1.1.1999.<sup>1</sup>

This proportion will increase to about 33 per cent in two steps on 1.1.2000 and 1.1.2003.

The Commission considers that any export or import monopoly for electricity is illegal under the Treaty and has taken action against Member States which still maintain them before the Court of Justice of the European communities.

The draft Directive neither authorises or prohibits local distribution monopolies.

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\* Part I is prepared by Directorate General IV - Competition.

In order to enable industrial customers and - to the extent that the Member State chooses to make them "eligible" - distributors, to exercise their freedom of choice under the Directive, Member States may choose between two systems:

- negotiated third party access to the network(s) ("NTPA") or
- Single Buyer.

### **NTPA**

Eligible buyers and their suppliers may negotiate conditions of access to the network of a system operator and where necessary the distribution system operator. System operators must publish an indicative list of prices for access.

### **Single Buyer**

Under this system, an eligible customer may negotiate to obtain power from a supplier of his choice. The Single Buyer must be required either:

- to buy such power from the customer (at the place where the electricity is offered by the supplier or at the border if the supplier is outside the area of the Single Buyer's system) at the price at which the Single Buyer supplies his power to that customer, minus the transport cost from the supply point or the border as the case may be, to the point of consumption, according to a published transportation tariff, *or*
- provide NTPA.

To enable independent producers in the area of the Single Buyer to supply outside that area (i.e. "export" from that area), the Single Buyer must provide NTPA.

In addition to the foregoing, Member States shall ensure that independent producers or autogenerators can exercise NTPA to supply their own premises or their subsidiaries' in the Community.

The Directive requires dispute settlement procedures and bodies to be established.

There are provisions for the authorisation by Member States of "direct lines". This may be made subject to a refusal of network access.

### **Regional Monopolies**

The Commission seeks to ensure that trade in electricity is not only a matter of exchanges between regional or national monopolies. An existing Directive requires Member States to ensure that transit for electricity is made available by their network operators to operators of other electricity networks. Transit is defined as the transmission of electricity across an electricity system, involving at least the crossing of one national border.

## **Unbundling**

As mentioned above, distribution need not be separated from other functions in terms of management and ownership. However, separation of accounts is required. In some Member States the distribution monopoly is national, in others they are regional.

## **Entrepreneurial risk**

Generators in the authorisation system, and independent generators in the invitation to tender system, assume entrepreneurial risks. Those whose offers (to build and operate power stations and to supply the power) are successful in the invitation to tender system will not face such risks.

Community law is not concerned with the public or private status as such of electricity undertakings. Public undertakings are subject to particular obligations of transparency of their financial dealing with the state, in connection with the application of the State Aid rules. Member States also have particular obligations not to maintain, with respect to public undertakings, any measure contrary to the rules of the Treaty, and in particular the competition rules.

## **Ownership and management**

Apart from accounting unbundling, the only cases of management or other separation required by the draft Directive are the following:

- In the system of "invitation to tender" to build and operate power stations, the body organising the tender procedure must be independent of generation, transmission or distribution activities;
- the network ("system") operator must at least be managed independently from generation or distribution interests.

## **Regulator**

The draft Directive requires Member States to create arrangements for regulation control and transparency so as to avoid any abuse of dominant position, and any predatory behaviour. Specific reference is made to Article 86 of the EC Treaty. The form of regulation is a matter for the Member States.

## **Competition law**

The draft Directive specifically provides in the recitals that it shall be without prejudice to the full application of the Treaty rules, in particular those relating to the internal market and to competition.

The competition rules of the Treaty are fully applicable to the electricity sector with one proviso. Article 90(2) of the Treaty provides that the competition rules apply to undertakings entrusted with the operation of services of general economic interest except to the extent that the application of those rules does obstruct the performance in law or in fact, of the particular tasks assigned to them, and provided

that the development of trade must not be affected to such an extent as would be contrary to the interests of the Community.

In order to benefit from these provisions, the undertaking claiming it must show that it has been entrusted, by a formal act, with the operation of a service of general economic interest, and must show what the particular tasks are which have been assigned to it. The application of the provision then involves considering to what extent the full application of the competition rules would obstruct the fulfilment of the particular tasks. That is essentially a matter of proportionality, as is the application of the final proviso regarding the effect on trade in the Community.

### **Final comment**

The draft Directive is intended as a first step in the liberalisation of the electricity sector. It requires certain action by Member States, and should be followed up by new proposals for further liberalisation to come into effect after nine years.

The Directive does not modify the application of the competition rules to the conduct of companies.

### **Note**

- 1 The Directive will come into effect one year later in Belgium and Ireland, two years later in Greece.

# EUROPEAN COMMISSION

## PART II \*

### **Internal Energy Market: The Draft EU Directives For Common Rules Concerning The Internal Market In Electricity And The Internal Market In Natural Gas**

#### **General overview**

The European Commission presented in 1992 two proposals for Directives concerning common rules for the internal market in electricity and for the internal market in natural gas, based on Article 100A of the EC Treaty. These proposals aimed at creating a framework for liberalisation of these markets and the progressive opening up of the electricity and natural gas sectors to more competition. They formed the beginning of the second phase of the Commission's efforts to complete the internal energy market and as such complemented the Directives already adopted by the Council as part of a first phase in 1990 and 1991 concerning the transit rights for electricity and natural gas and the transparency of electricity and gas prices charged to industrial consumers. The 1992 proposals provided for greater competition in the supply of energy to customers, for access by third parties to electricity networks and gas pipelines, and for competition in electricity generation. A separate Directive, the Hydrocarbons Licensing Directive, was adopted by the Council in 1994, creating competition in the field of the exploration and production of natural gas.

The two proposals of the Commission were the subject of many debates in the European Parliament (1992-1993), in the Economic and Social Committee (1993), in the Council (1994-1996), as well as among those interested in industry and society in general. Based on the Parliament's discussions in first reading on the original proposals, the Commission amended its proposals in December 1993 and subsequently these amended proposals became the subject of discussions in the Council.

On 20 June 1996 the Council unanimously adopted a Common Position on the Commission's proposal for electricity, which reflects an important political point in time, within the whole process of decision-making aimed at adopting a Directive. Following the codecision procedure the European Parliament will now have to give a second reading. In the meantime discussions on the gas proposal, which had been stalled since January 1994, when the Council decided to first progress with discussions on the electricity proposal, have been reopened again by the Irish Presidency of the Council in July 1996. The Council's objective in the gas discussions is also to reach an agreement on a Common Position for the internal gas market proposal.

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\* Part II is prepared by Directorate General XVII - Energy .

## **Common position by the Council**

The Common Position of the Council of 20 June 1996 concerning the internal market for electricity is the result of many discussions since 1992 and reflects the large degree of consensus and compromise that has been found between the EU's Member States and between the EU's institutions. As such it is based on the premises of establishing common rules, i.e. basic principles for an internal electricity market, which all Member States will have to integrate and follow in their national systems. It does not create one uniform system throughout Europe, but provides for a measure of subsidiarity and flexibility for Member States when applying these rules to their particular national situation, while at the same time avoiding any excessive regulation. This is reflected in the number of options and models Member States can choose from in the Directive.

The electricity Directive will effect the market in three subsections: generation, consumption and transmission. The generation market will be opened up to competition on the basis of two alternative procedures. Member States can choose to follow either the authorisation procedure or the tendering procedure, while both are based on objective, transparent and non-discriminatory criteria. Tenders will be organised and decided by a fully independent authority, while certain types of generators will be able to obtain authorisations under both procedures (self-generators, independent power producers). These two options will allow companies to construct new generation capacity and set up operations in a new market anywhere in the EU. Of course, in all cases competition can also be created through the possibility of imports and exports to and from neighbouring systems which have capacity available.

On the consumers' side the market will be opened to competition through the gradual introduction of market opening over a six year period which will initially cover approximately one quarter of the market and finally result in one third of the market being liberalised. This degree of market opening is a minimum level which all EU Member States must respect, but which allows them to create even more market opening on a national basis. The customers eligible to participate in the market opening will be determined by the Member States, under supervision of the Commission, though two categories will automatically be included: very large final consumers of over 100 GWh and distributors for the volume of electricity consumed in their distribution network by other eligible final customers. This degree of flexibility allows Member States to fully include distributors or to include final customers of a medium size or to do both. In all cases the same, minimum, level of market opening will be applicable.

These two sides of the electricity market are linked together through the network system. Once again Member States will have a choice between either the Third Party Access model, which has two variations (negotiated TPA or regulated TPA), or the Single Buyer model, which is also based on two variations (Single Buyer with repurchasing obligation or Single Buyer giving TPA). In both cases all producers and all eligible customers will be able to get access to the network under objective and non-discriminatory conditions and they will be able to enter into direct contractual relationships with each other for the sale and supply of electricity. Under both systems either a transmission system operator or a single buyer entity will assure the security of the system, respect of public services and environmental protection.

The electricity market, and all subsections as regulated in the Directive, will be subjected to public service obligations which Member States may impose in the general economic interest on electricity undertakings in their market. These obligations will be defined by Member States individually within a Community framework as given in the Directive. Member States will define the obligations in detail which must be objective, transparent, non-discriminatory, verifiable and published, within one of the five Community categories which are: security of supply, regularity, quality and price of supplies, and environmental protection. These obligations need to be notified to the Commission which will check them

against the provisions of Community law. This mechanism will allow Member States to balance competition with public services, where this is deemed to be necessary in the general interest of society, all within a common framework at Community level.

### **Final adoption and follow-up instruments**

The European Parliament will now have to give a second reading on the proposal during the autumn of 1996. Only then, if Council and Parliament are in agreement, can the Directive be finally and fully adopted. If the Parliament has a favourable opinion, the Directive could already be adopted by the beginning of 1997. Immediately the gradual, six year, process of market opening will commence, while a review of the Directive by the Commission is foreseen after a number of years, basing itself on the experience of this first step in market opening and competition. This review should lead to new proposals by the Commission, to be considered by Council and Parliament, which should result in a further liberalisation to be effective nine years after the entry into force of the present Directive. These follow-up measures will constitute the third phase of the Commission's efforts to complete the internal energy market.

**ANNEX**

**EUROPEAN UNION  
THE COUNCIL**

**Brussels, 25 July 1996**

**Interinstitutional  
File No 00/0384 (COD)**

**8811/2/96  
REV 2**

**LIMITE**

**ENER 105  
CODEC 441**

**COMMON POSITION (EC) No /96  
ADOPTED BY THE COUNCIL ON 25 JULY 1996  
WITH A VIEW TO ADOPTING  
DIRECTIVE 96/ /EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
CONCERNING COMMON RULES FOR THE  
INTERNAL MARKET IN ELECTRICITY**

**DIRECTIVE 96/ /EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
of**

concerning common rules for the  
internal market in electricity

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 57(2), Article 66 and Article 100a thereof,

Having regard to the proposal from the Commission <sup>(1)</sup>

Having regard to the Opinion of the Economic and Social Committee <sup>(2)</sup>,

Acting in accordance with the procedure laid down in Article 189b of the Treaty <sup>(3)</sup>,

- (1) Whereas it is important to adopt measures to ensure the smooth running of the internal market; whereas the internal market is to comprise an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured;
- (2) Whereas the completion of a competitive electricity market is an important step towards completion of the internal energy market;
- (3) Whereas the provisions of this Directive should not affect the full application of the Treaty, in particular the provisions concerning the internal market and competition;
- (4) Whereas establishment of the internal market in electricity is particularly important in order to increase efficiency in the production, transmission and distribution of this product, while reinforcing security of supply and the competitiveness of the European economy and respecting environmental protection;
- (5) Whereas the internal market in electricity needs to be established gradually, in order to enable the industry to adjust in a flexible and ordered manner to its new environment and to take account of the different ways in which electricity systems are organized at present;
- (6) Whereas the establishment of the internal market in the electricity sector must favour the interconnection and interoperability of systems;
- (7) Whereas Council Directive 90/547/EEC of 29 October 1990 on the transit of electricity through transmission grids <sup>(4)</sup> and Council Directive 90/377/EEC of 29 June 1990 concerning a Community procedure to improve the transparency of gas and electricity prices charged to industrial end-users <sup>(5)</sup>, provide for a first phase for the completion of the internal electricity market;

- (8) Whereas it is now necessary to take further measures with a view to establishing the internal market in electricity;
- (9) Whereas, in the internal market, electricity undertakings must be able to operate, without prejudice to compliance with public service obligations, with a view to achieving a competitive market in electricity;
- (10) Whereas Member States, because of the structural differences in the Member States, currently have different systems for regulating the electricity sector;
- (11) Whereas, in accordance with the principle of subsidiarity, general principles providing for a framework must be established at Community level, but their detailed implementation should be left to Member States, thus allowing each Member State to choose the regime which corresponds best to its particular situation;
- (12) Whereas, whatever the nature of the prevailing market organization, access to the system must be open in accordance with this Directive and must lead to equivalent economic results in the Member States and hence to a directly comparable level of opening-up of markets and to a directly comparable degree of access to electricity markets;
- (13) Whereas for some Member States the imposition of public service obligations may be necessary to ensure security of supply and consumer and environmental protection, which, in their view, free competition, left to itself, cannot necessarily guarantee;
- (14) Whereas long-term planning may be one means of carrying out those public service obligations;
- (15) Whereas the Treaty lays down specific rules with regard to restrictions on the free movement of goods and on competition;
- (16) Whereas Article 90(1) of the Treaty, in particular, obliges the Member States to respect these rules with regard to public undertakings and undertakings which have been granted special or exclusive rights;
- (17) Whereas Article 90(2) of the Treaty subjects undertakings entrusted with the operation of services of general economic interest to these rules, under specific conditions;
- (18) Whereas the implementation of this Directive will have an impact on the activities of such undertakings;
- (19) Whereas the Member States, when imposing public service obligations on the enterprises of the electricity sector, must therefore respect the relevant rules of the Treaty as interpreted by the Court of Justice;
- (20) Whereas, in establishing the internal market in electricity, full account should be taken of the Community objective of economic and social cohesion, particularly in sectors such as the infrastructures, national or intra-Community, which are used for the transmission of electricity;
- (21) Whereas the Decision of the European Parliament and of the Council of ..... adopting a series of guidelines on trans-European energy networks<sup>(6)</sup> has contributed to the development of integrated infrastructures for the transmission of electricity;

- (22) Whereas it is therefore necessary to establish common rules for the production of electricity and the operation of electricity transmission and distribution systems;
- (23) Whereas there are two systems which may be applied for opening up the production market, an authorization procedure or a tendering procedure, and these must operate in accordance with objective, transparent and non-discriminatory criteria;
- (24) Whereas the position of autoproducers and independent producers needs to be taken into consideration within this framework;
- (25) Whereas each transmission system must be subject to central management and control in order to ensure the security, reliability and efficiency of the system in the interests of producers and their customers; whereas a transmission system operator should therefore be designated and entrusted with the operation, maintenance, and, if necessary, development of the system; whereas the transmission system operator must behave in an objective, transparent and non-discriminatory manner;
- (26) Whereas the technical rules for the operation of transmission systems and direct lines must be transparent and must ensure interoperability;
- (27) Whereas objective and non-discriminatory criteria must be established for the dispatching of power stations;
- (28) Whereas, for reasons of environmental protection, priority may be given to the production of electricity from renewable sources;
- (29) Whereas, at the distribution level, customers located in a given area may be granted supply rights and a manager must be designated to manage, maintain and, if necessary, develop each distribution system;
- (30) Whereas, in order to ensure transparency and non-discrimination the transmission function of vertically integrated undertakings should be operated independently from the other activities;
- (31) Whereas a single buyer must operate separately from the generation and distribution activities of vertically integrated undertakings; whereas the flow of information between the single buyer activities and these generation and distribution activities needs to be restricted;
- (32) Whereas the accounts of all integrated electricity undertakings should provide for maximum transparency, in particular to identify possible abuses of a dominant position, consisting for example in abnormally high or low tariffs or in discriminatory practices relating to equivalent transactions; whereas, to this end, the accounts must be separate for each activity;
- (33) Whereas it is also necessary to provide for access by the competent authorities to the internal accounts of undertakings with due regard for confidentiality;
- (34) Whereas, owing to the diversity of structures and the special characteristics of systems in Member States, there should be different options for system access operating in accordance with objective, transparent and non-discriminatory criteria;

- (35) Whereas provision should be made for authorizing the construction and use of direct lines;
- (36) Whereas provision must be made for safeguards and dispute settlement procedures;
- (37) Whereas any abuse of a dominant position or any predatory behaviour should be avoided;
- (38) Whereas, as some Member States are liable to experience special difficulties in adjusting their systems, provision should be made for recourse to transitional regimes or derogations, especially for the operation of small isolated systems;
- (39) Whereas this Directive constitutes a further phase of liberalization; whereas, once it has been put into effect, some obstacles to trade in electricity between Member States will nevertheless remain in place; whereas, therefore, proposals for improving the operation of the internal market in electricity may be made in the light of experience; whereas the Commission should therefore report to the Council and the European Parliament on the application of this Directive,

HAVE ADOPTED THIS DIRECTIVE:

## Chapter I

### Scope and definitions

#### Article 1

This Directive establishes common rules for the production, transmission and distribution of electricity. It lays down the rules relating to the organization and functioning of the electricity sector, access to the market, the criteria and procedures applicable to calls for tender and the granting of authorizations and the operation of systems.

#### Article 2

For the purposes of this Directive:

- 1) "generation" shall mean the production of electricity;
- 2) "producer" shall mean a legal or natural person generating electricity;
- 3) "autoproducer" shall mean a legal or natural person generating electricity essentially for his own use;
- 4)(a) "independent producer" shall mean a producer who does not carry out electricity transmission or distribution functions in the territory covered by the system where he is established;
- (b) in Member States in which vertically integrated undertakings do not exist and where a tendering procedure is used, independent producers are those, corresponding to the definition of point (a), who may not be exclusively subject to the economic precedence of the interconnected system;
- 5) "transmission" shall mean the transport of electricity on the high-voltage interconnected system with a view to its delivery to final customers or to distributors;
- 6) "distribution" shall mean the transport of electricity on medium-voltage and low-voltage distribution systems with a view to its delivery to customers;
- 7) "customers" shall mean wholesale or final customers of electricity and distribution companies;
- 8) "wholesale customers" shall mean any natural or legal persons, if the Member States recognize their existence, who purchase or sell electricity and who do not carry out transmission, generation or distribution functions inside or outside the system where they are established;
- 9) "final customer" shall mean a customer buying electricity for his own use;
- 10) "interconnectors" shall mean equipment used to link electricity systems;
- 11) "interconnected system" shall mean a number of transmission and distribution systems linked together by means of one or more interconnectors;
- 12) "direct line" shall mean an electricity line complementary to the interconnected system;

- 13) "economic precedence" shall mean the ranking of sources of electricity supply in accordance with economic criteria;
- 14) "ancillary services" shall mean all services necessary for the operation of a transmission or distribution system;
- 15) "system user" shall mean any legal or natural person supplying to, or being supplied by, a transmission or distribution system;
- 16) "supply" shall mean the delivery and/or sale of electricity to customers;
- 17) "integrated electricity undertaking" shall mean a vertically or horizontally integrated undertaking;
- 18) "vertically integrated undertaking" shall mean an undertaking performing two or more of the functions of generation, transmission and distribution of electricity;
- 19) "horizontally integrated undertaking" shall mean an undertaking performing at least one of the functions of generation for sale, or transmission or distribution of electricity, and another non-electricity activity;
- 20) "tendering procedure" shall mean the procedure through which planned additional requirements and replacement capacity are covered by supplies from new or existing generating capacity;
- 21) "long term planning" shall mean the planning of the need for investment in generation and transmission capacity on a long-term basis, with a view to meeting the demand for electricity of the system and securing supplies to customers;
- 22) "single buyer" shall mean any legal person who, within the system where he is established, is responsible for the unified management of the transmission system and/or for centralized electricity purchasing and selling;
- 23) "small isolated system" shall mean any system with consumption of less than 2500 GWh in the year 1996, where less than 5% of annual consumption is obtained through interconnection with other systems.

## Chapter II

### General rules for the organization of the sector

#### Article 3

1. Member States shall ensure, on the basis of their institutional organization and with due regard for the principle of subsidiarity, that, without prejudice to paragraph 2, electricity undertakings are operated in accordance with the principles of this Directive, with a view to achieving a competitive market

in electricity, and shall not discriminate between these undertakings as regards either rights or obligations. The two approaches to system access referred to in Articles 17 and 18 must lead to equivalent economic results and hence to a directly comparable level of opening up of markets and to a directly comparable degree of access to electricity markets.

2. Having full regard to the relevant provisions of the Treaty, in particular Article 90 Member States may impose on undertakings operating in the electricity sector, in the general economic interest, public service obligations which may relate to security, including security of supply, regularity, quality and price of supplies and to environmental protection. Such obligations must be clearly defined, transparent, non-discriminatory and verifiable; they, and any revision thereof, shall be published and notified to the Commission by Member States without delay. As a means of carrying out the abovementioned public service obligations, Member States which so wish may introduce the implementation of long-term planning.

3. Member States may decide not to apply the provisions in Articles 5, 6, 17, 18 and 21 insofar as the application of these provisions would obstruct the performance, in law or in fact, of the obligations imposed on electricity utilities in the general economic interest and insofar as the development of trade would not be affected to such an extent as would be contrary to the interest of the Community. The interest of the Community includes, inter alia, the competition with regard to eligible customers according to this Directive and Article 90 of the Treaty.

### Chapter III

#### Generation

##### Article 4

For the construction of new generating capacity, Member States may choose between an authorization procedure and/or a tendering procedure. Authorization and tendering must be conducted in accordance with objective, transparent and non-discriminatory criteria.

##### Article 5

1. Where they opt for the authorization procedure, Member States shall lay down the criteria for the grant of authorizations for the construction of generating capacity in their territory. These criteria may relate to:

- (a) the safety and security of the electricity system, installations and associated equipment;
- (b) protection of the environment;
- (c) land use and siting;
- (d) use of public ground;
- (e) energy efficiency;

- (f) the nature of the primary sources;
- (g) characteristics particular to the applicant, such as technical, economic and financial capabilities;
- (h) the provisions of Article 3.

2. The detailed criteria and procedures shall be made public.

3. Applicants shall be informed of the reasons, which must be objective and non-discriminatory, for any refusal to grant an authorization; the reasons must be well founded and duly substantiated; they shall be forwarded to the Commission for information. Appeal procedures must be made available to the applicant.

#### Article 6

1. Where they opt for the tendering procedure, Member States or any other competent body designated by the Member State concerned shall draw up an inventory of new means of production, including replacement capacity, on the basis of the regular estimate referred to in paragraph 2. The inventory shall take account of the need for interconnection of systems. The requisite capacity shall be allocated by means of a tendering procedure in accordance with the procedure laid down in this Article.

2. The transmission system operator or any other competent authority designated by the Member State concerned shall draw up and publish under State supervision, at least every two years, a regular estimate of the generating and transmission capacity which is likely to be connected to the system, of the need for interconnectors with other systems, of potential transmission capacity and of the demand for electricity. The estimate shall cover a period defined by each Member State.

3. Details of the tendering procedure for means of production shall be published in the Official Journal of the European Communities at least six months prior to the closing date for tenders.

The tender specifications shall be made available to any interested undertaking established in the territory of a Member State so that it has sufficient time in which to submit a tender.

The tender specifications shall contain a detailed description of the contract specifications and of the procedure to be followed by all tenderers and an exhaustive list of criteria governing the selection of tenderers and the award of the contract. These specifications may also relate to the fields referred to in Article 5(1).

4. In invitations to tender for the requisite generating capacity, consideration must also be given to electricity supply offers with long-term guarantees from existing generating units, provided that additional requirements can be met in this way.

5. Member States shall designate an authority or a public body or a private body independent of electricity generation, transmission and distribution activities responsible for the organization, monitoring and control of the tendering procedure. This authority or body shall take all necessary steps to ensure confidentiality of the information contained in the tenders.

6. However, it must be possible for autoproducers and independent producers to obtain authorization, on the basis of objective, transparent and non-discriminatory criteria as laid down in Articles 4 and 5, in Member States which have opted for the tendering procedure.

## Chapter IV

### Transmission system operation

#### Article 7

1. Member States shall designate or shall require the undertakings which own transmission systems to designate, for a period of time to be determined by Member States having regard to considerations of efficiency and economic balance, a system operator, responsible for operating, ensuring the maintenance of, and, if necessary, developing the transmission system in a given area and its interconnectors with other systems, in order to guarantee security of supply.

2. Member States shall ensure that technical rules establishing the minimum technical design and operational requirements for the connection to the system of generating installations, distribution systems, directly connected consumers' equipment, interconnector circuits and direct lines are developed and published. These requirements shall ensure the interoperability of systems and shall be objective and non-discriminatory. They shall be notified to the Commission in accordance with Article 8 of Council Directive 83/189/EEC of 28 March 1983 laying down a procedure for the provision of information in the field of technical standards and regulations <sup>(7)</sup>.

3. The system operator shall be responsible for managing energy flows on the system, taking into account exchanges with other interconnected systems. To that end, the system operator shall be responsible for ensuring a secure, reliable and efficient electricity system and, in that context, for ensuring the availability of all necessary ancillary services.

4. The system operator shall provide to the operator of any other system with which its system is interconnected sufficient information to ensure the secure and efficient operation, coordinated development and interoperability of the interconnected system.

5. The system operator shall not discriminate between system users or classes of system users, particularly in favour of its subsidiaries or shareholders.

6. Unless the transmission system is already independent from generation and distribution activities, the system operator shall be independent at least in management terms from other activities not relating to the transmission system.

#### Article 8

1. The transmission system operator shall be responsible for dispatching the generating installations in its area and for determining the use of interconnectors with other systems.

2. Without prejudice to the supply of electricity on the basis of contractual obligations, including those which derive from the tendering specifications, the dispatching of generating installations and the use of interconnectors shall be determined on the basis of criteria which may be approved by the Member State and which must be objective, published and applied in a non-discriminatory manner which ensures the proper functioning of the internal market in electricity. They shall take into account the economic precedence of electricity from available generating installations or interconnector transfers and the technical constraints on the system.

3. A Member State may require the system operator, when dispatching generating installations, to give priority to generating installations using renewable energy sources or waste or producing combined heat and power.

4. A Member State may, for reasons of security of supply, direct that priority be given to the dispatch of generating installations using indigenous primary energy fuel sources, to an extent not exceeding in any calendar year 15% of the overall primary energy necessary to produce the electricity consumed in the Member State concerned.

#### Article 9

The transmission system operator must preserve the confidentiality of commercially sensitive information obtained in the course of carrying out its business.

### Chapter V

#### Distribution system operation

#### Article 10

1. Member States may impose on distribution companies an obligation to supply customers located in a given area. The tariff for such supplies may be regulated, for instance to ensure equal treatment of the customers concerned.

2. Member States shall designate or shall require undertakings which own or are responsible for distribution systems to designate a system operator responsible for operating, ensuring the maintenance and, if necessary, developing the distribution system in a given area and its interconnectors with other systems.

3. Member States shall ensure that the system operator acts in accordance with Articles 11 and 12.

#### Article 11

1. The distribution system operator shall maintain a secure, reliable and efficient electricity distribution system in its area, with due regard for the environment.

2. In any event it must not discriminate between system users or classes of system users, particularly in favour of its subsidiaries or shareholders.

3. A Member State may require the distribution system operator, when dispatching generating installations, to give priority to generating installations using renewable energy sources or waste or producing combined heat and power.

#### Article 12

The distribution system operator must preserve the confidentiality of commercially sensitive information obtained in the course of carrying out its business.

### Chapter VI

#### Unbundling and transparency of accounts

#### Article 13

Member States or any competent authority they designate as well as the dispute settlement authorities referred to in Article 20(3) shall have right of access to the accounts of generation, transmission or distribution undertakings which they need to consult in carrying out their checks.

#### Article 14

1. Member States shall take the necessary steps to ensure that the accounts of electricity undertakings are kept in accordance with paragraphs 2 to 5.

2. Electricity undertakings, whatever their system of ownership or legal form, shall draw up, submit to audit and publish their annual accounts in accordance with the rules of national law concerning the annual accounts of limited liability companies adopted pursuant to the Fourth Council Directive, 78/660/EEC, of 25 July 1978 based on Article 54(3)(g) of the Treaty on the annual accounts of certain types of companies<sup>(8)</sup>. Undertakings which are not legally obliged to publish their annual accounts shall keep a copy of these at the disposal of the public in their head office.

3. Integrated electricity undertakings shall, in their internal accounting, keep separate accounts for their generation, transmission and distribution activities, and, where appropriate, consolidated accounts for other non-electricity activities, as they would be required to do if the activities in question were carried out by separate undertakings, with a view to avoiding discrimination, cross-subsidization and distortion of competition. They shall have included a balance sheet and a profit and loss account for each activity in notes to their accounts.

4. Undertakings shall specify in notes to the annual accounts the rules for the allocation of assets and liabilities and expenditure and income which they follow in drawing up the separate accounts referred to in paragraph 3. These rules may be amended only in exceptional cases. Such amendments must be mentioned in the notes and must be duly substantiated.

5. The annual accounts shall indicate in notes any transaction of a certain size conducted with affiliated undertakings, within the meaning of Article 41 of the Seventh Council

Directive, 83/349/EEC, of 13 June 1983 based on Article 54(3)(g) of the Treaty on consolidated accounts<sup>(9)</sup>, or with associated undertakings, within the meaning of Article 33(1) thereof, or, with undertakings which belong to the same shareholders.

#### Article 15

1. Member States which designate as a single buyer a vertically integrated electricity undertaking or part of a vertically integrated electricity undertaking shall lay down provisions requiring the single buyer to operate separately from the generation and distribution activities of the integrated undertaking.
2. Member States shall ensure that there is no flow of information between the single buyer activities of vertically integrated electricity undertakings and their generation and distribution activities, except for the information necessary to conduct the single buyer responsibilities.

### Chapter VII

#### Organization of access to the system

#### Article 16

For the organization of access to the system Member States may choose between the procedures referred to in Article 17 and/or in Article 18. Both sets of procedure shall operate in accordance with objective, transparent and non-discriminatory criteria.

#### Article 17

1. In the case of negotiated access to the system Member States shall take the necessary measures for electricity producers and, where Member States authorize their existence, supply undertakings and eligible customers either inside or outside the territory covered by the system to be able to negotiate access to the system so as to conclude supply contracts with each other on the basis of voluntary commercial agreements.
2. Where an eligible customer is connected to the distribution system, access to the system must be the subject of negotiation with the relevant distribution system operator and, if necessary, with the transmission system operator concerned.
3. To promote transparency and facilitate negotiations for access to the system, system operators must publish an indicative range of prices for use of the transmission and distribution systems in the first year following implementation of this Directive. As far as possible, the indicative prices published for subsequent years should be based on the average price agreed in negotiations in the previous twelve-month period.
4. Member States may also opt for a regulated system of access procedure, giving eligible customers a right of access, on the basis of published tariffs for use of transmission and distribution systems, that is at least equivalent, in terms of access to the system, to the other procedures for access referred to in this Chapter.

5. The operator of the transmission or distribution system concerned may refuse access where he lacks the necessary capacity. Duly substantiated reasons must be given for such refusal, in particular having regard to Article 3.

#### Article 18

1. In the case of the single buyer procedure, Member States shall designate a legal person to be the single buyer within the territory covered by the system operator. Member States shall take the necessary measures for:

- (i) the publication of a non-discriminatory tariff for the use of the transmission and distribution system;
- (ii) eligible customers to be free to conclude supply contracts to cover their own needs with producers and, where Member States authorize their existence, with supply undertakings outside the territory covered by the system;
- (iii) eligible customers to be free to conclude supply contracts to cover their own needs with producers inside the territory covered by the system;
- (iv) independent producers to negotiate access to the system with the transmission and distribution systems operators so as to conclude supply contracts with eligible customers outside the system, on the basis of a voluntary commercial agreement.

2. The single buyer may be obliged to purchase the electricity contracted by an eligible customer from a producer inside or outside the territory covered by the system at a price which is equal to the sale price offered by the single buyer to eligible customers minus the price of the published tariff referred to in paragraph 1(i).

3. If the purchase obligation under paragraph 2 is not imposed on the single buyer, Member States shall take the necessary measures to ensure that the supply contracts referred to in paragraph 1(ii) and 1(iii) are either implemented via access to the system on the basis of the published tariff referred to in paragraph 1(i) or via negotiated access to the system according to the conditions of Article 17. In the latter case there would be no obligation for the single buyer to publish a non-discriminatory tariff for the use of the transmission and distribution system.

4. The single buyer may refuse access to the system and may refuse to purchase electricity from eligible customers where he lacks the necessary transmission or distribution capacity. Duly substantiated reasons must be given for such refusal, in particular having regard to Article 3.

#### Article 19

1. Member States shall take the necessary measures to ensure an opening of their electricity markets, so that contracts under the conditions stated in Articles 17 and 18 can be concluded at least up to a significant level, to be notified to the Commission on an annual basis.

The share of the national market shall be calculated on the basis of the Community share of electricity consumed by final consumers consuming more than 40 GWh per year (on a consumption site basis and including autoproduction).

The average Community share shall be calculated by the Commission on the basis of information regularly provided by Member States to the Commission. The Commission shall publish this average Community share defining the degree of market opening in the Official Journal of the European Communities before November each year with all appropriate information clarifying the calculation.

2. The share of the national market, as referred to in paragraph 1, will be progressively increased over a period of six years. This increase will be calculated by reducing the Community consumption threshold of 40 GWh, as mentioned in paragraph 1, from 40 GWh to a level of 20 GWh annual electricity consumption three years after the entry into force of this Directive and to a level of 9 GWh annual electricity consumption six years after the entry into force of this Directive.

3. Member States shall specify those customers inside their territory representing the shares as specified under paragraphs 1 and 2 which have the legal capacity to contract electricity in accordance with Articles 17 and 18, given that all final consumers consuming more than 100 Gwh per year (on a consumption site basis and including autoproduction) must be included in the above category.

Distribution companies, if not already specified as eligible customers under this paragraph, will have the legal capacity to contract under the conditions of Articles 17 and 18 for the volume of electricity being consumed by their customers designated as eligible within their distribution system, to supply those customers.

4. Member States shall publish by 30 January each year the criteria for the definition of eligible customers, which are able to conclude contracts under the conditions stated in Articles 17 and 18. This information, together with all other appropriate information to justify the fulfilment of market opening under paragraph 1, will be sent to the Commission to be published in the Official Journal of the European Communities. The Commission may request a Member State to modify its specifications, as mentioned in paragraph 3, if they create obstacles to the correct application of this Directive as regards the good functioning of the internal electricity market. If the Member State concerned does not follow this request within a period of three months, a final decision will be taken in accordance with procedure I of Article 2 of Council Decision 87/373/EEC of 13 July 1987 laying down the procedures for the exercise of implementing powers conferred on the Commission <sup>(10)</sup>.

5. To avoid imbalance in the opening of electricity markets during the period referred to in Article 26:

- (a) contracts for the supply of electricity under the provisions of Articles 17 and 18 with an eligible customer in the system of another Member State shall not be prohibited if the customer is considered as eligible in both systems involved;
- (b) in cases where transactions as described in subparagraph (a) are refused because of the customer being eligible only in one of the two systems, the Commission may oblige, taking into account the situation in the market and the common interest, the refusing party to execute the requested electricity supply at the request of the Member State where the eligible customer is located.

In parallel with the procedure and the timetable provided for in Article 26, and not later than after half of the period provided for in the same Article, the Commission will review the application of subparagraph (b) of the first subparagraph on the basis of market developments taking into account the common interest. In the light of experience gained, the Commission will evaluate this situation and report on possible imbalance in the opening of electricity markets with regard to this paragraph.

## Article 20

1. Member States shall take the necessary measures to enable:
  - (i) independent producers and autoproducers to negotiate access to the system so as to supply their own premises and subsidiaries in the same Member State or in another Member State by means of the interconnected system;
  - (ii) producers located outside the territory covered by the system to conclude a supply contract following a call for tender for new generating capacity, and to have access to the system to perform the contract.
2. Member States shall ensure that the parties negotiate in good faith and that none of them abuses its negotiating position by preventing the successful outcome of negotiations.
3. Member States shall designate a competent authority, which must be independent of the parties, to settle disputes relating to the contracts and negotiations in question. In particular, this authority must settle disputes concerning contracts, negotiations and refusal of access or refusal to purchase.
4. In the event of cross-border disputes, the dispute settlement authority shall be the dispute settlement authority covering the system of the single buyer or the system operator which refuses use of, or access to, the system.
5. Recourse to this authority shall be without prejudice to the exercise of rights of appeal under Community law.

## Article 21

1. Member States shall take measures under the procedures and rights referred to in Article 17 and 18 to enable:
  - all electricity producers and electricity supply undertakings, where Member States authorize their existence, established within their territory to supply their own premises, subsidiaries and eligible customers through a direct line;
  - any eligible customer within their territory to be supplied through a direct line by a producer and supply undertakings, where such suppliers are authorized by Member States.
2. Member States shall lay down the criteria for the grant of authorizations for the construction of direct lines in their territory. These criteria must be objective and non-discriminatory.
3. The supply possibilities through a direct line as referred to in paragraph 1 do not modify the possibilities to contract electricity in accordance with Articles 17 and 18.
4. Member States may make authorization to construct a direct line subject either to the refusal of system access on the basis, as appropriate, of Article 17(5) or Article 18(4) or to the opening of a dispute settlement procedure under Article 20.
5. Member States may refuse to authorize a direct line if the granting of such an authorization would obstruct the provisions of Article 3. Duly substantiated reasons must be given for such refusal.

## Article 22

Member States shall create appropriate and efficient mechanisms for regulation, control and transparency so as to avoid any abuse of dominant position, in particular to the detriment of consumers, and any predatory behaviour. These mechanisms shall take account of the provisions of the Treaty, and in particular Article 86 thereof.

## Chapter VIII

### Final provisions

## Article 23

In the event of a sudden crisis in the energy market and where the physical safety or security of persons, apparatus or installations or system integrity is threatened, a Member State may temporarily take the necessary safeguard measures.

Such measures must cause the least possible disturbance in the functioning of the internal market and must not be wider in scope than is strictly necessary to remedy the sudden difficulties which have arisen.

The Member State concerned shall without delay notify these measures to the other Member States, and to the Commission, which may decide that the Member State concerned must amend or abolish such measures, insofar as they distort competition and adversely affect trade in a manner which is at variance with the common interest.

## Article 24

1. Those Member States in which commitments or guarantees of operation given before the entry into force of this Directive may not be honoured on account of the provisions of this Directive may apply for a transitional regime which may be granted to them by the Commission, taking into account, amongst other things, the size of the system concerned, the level of interconnection of the system and the structure of its electricity industry. The Commission shall inform the Member States of those applications before it takes a decision, taking into account the respect of confidentiality. This decision shall be published in the Official Journal of the European Communities.

2. The transitional regime shall be of limited duration and shall be linked to expiry of the commitments or guarantees referred to in paragraph 1. The transitional regime may cover derogations from Chapters IV, VI and VII of this Directive. Applications for a transitional regime must be notified to the Commission no later than one year after the entry into force of this Directive.

3. Member States which can demonstrate, after the Directive has been brought into force, that there are substantial problems for the operation of their small isolated systems, may apply for derogations from the relevant provisions of Chapters IV, V, VI, VII, which may be granted to them by the Commission. The latter shall inform the Member States of those applications prior to taking a decision, taking into

account the respect of confidentiality. This decision shall be published in the Official Journal of the European Communities. This paragraph shall also be applicable to Luxembourg.

#### Article 25

1. The Commission shall submit a report to the Council and the European Parliament, before the end of the first year following entry into force of this Directive, on harmonization requirements which are not linked to the provisions of this Directive. If necessary, the Commission shall attach to the report any harmonization proposals necessary for the effective operation of the internal electricity market.

2. The Council and the European Parliament shall give their views on such proposals within two years of their submission.

#### Article 26

The Commission shall review the application of this Directive and submit a report on the experience gained on the functioning of the internal electricity market and the implementation of the general rules mentioned in Article 3 in order to allow the European Parliament and the Council, in the light of experience gained, to consider, in due time, the possibility of a further opening of the market which would be effective nine years after the entry into force of the Directive taking into account the coexistence of systems referred to in Articles 17 and 18.

#### Article 27

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than .....<sup>(\*)</sup>. They shall forthwith inform the Commission thereof.

2. Belgium, Greece and Ireland may, due to the technical specificities of their electricity systems, dispose of an additional period of respectively 1 year, 2 years and 1 year to apply the obligations ensuing from this Directive. These Member States, when making use of this option, shall inform the Commission thereof.

3. When Member States adopt these provisions, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

#### Article 28

This Directive shall enter into force on the twentieth day following that of its publication in the Official Journal of the European Communities.

Article 29

This Directive is addressed to the Member States.

Done at Brussels,

For the European Parliament  
The President

For the Council  
The President

**EUROPEAN UNION  
THE COUNCIL**

**Brussels, 26 July 1996**

**Interinstitutional  
File No 93/0384 (COD)**

**8811/2/96  
REV 2 ADD 1**

**LIMITE**

**ENER 105  
CODEC 441**

**COMMON POSITION OF THE COUNCIL  
OF 25 JULY 1996  
WITH A VIEW TO ADOPTING A DIRECTIVE  
OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
CONCERNING COMMON RULES FOR THE INTERNAL MARKET IN ELECTRICITY**

**THE COUNCIL'S REASONS**

## I. INTRODUCTION

1. On 24 February 1992 the Commission forwarded to the Council a proposal concerning common rules for the internal market in electricity based on Article 100a of the EC Treaty.
2. The Opinions of the Economic and Social Committee and the European Parliament were delivered on 27 January and 17 November 1993, respectively.
3. On 11 February 1994 the Commission forwarded an amended proposal to the Council and the European Parliament.
4. At its meeting on 25 July 1996, the Council adopted its common position pursuant to Article 189b of the Treaty.

## II. OBJECTIVES

5. The purpose of the proposal for a Directive is to take a further step towards the completion of the internal market in electricity by establishing common rules for the production, transmission and distribution of electricity. It lays down the rules relating to the organization and functioning of the electricity sector, access to the market, the criteria and procedures applicable to calls for tender and the granting of authorizations and the operation of systems.

## III. ANALYSIS OF THE COMMON POSITION

6. The Council reached an agreement on the text of the common position on the basis of the following general outline:
  - a) It has been agreed to pursue a Directive for the internal market in electricity separated from the internal market in gas;
  - b) The internal market in electricity shall initially be subject to a gradual market opening over 9 years;
  - c) Member States may invoke either a tendering procedure or an authorization procedure when granting licences to construct new generation capacity;
  - d) Member States may invoke either the "Negotiated Third Party Access" or the "Single Buyer" systems to grant access to the grids;
  - e) All issues related to Public Service Obligations have been referred to Article 3;
  - f) With due regard to the principle of subsidiarity, Member States have been given a larger role in the implementation provisions.
7. The Council has been able to adopt a large part of the amendments requested by the European Parliament.

- a) The Council has, verbatim or in substance, adopted amendments 3, 7, 11, 13, 14, 15, 16, 22, 24, 25, 28, 33, 34, 40, 41, 48, 51, 60, 62, 63, 64, 66, 76, 77, 79, 83, 85, 88, 89, 91, 92, 97, 236, 237 and 238 which were taken up by the Commission.
- b) The Council has, furthermore, been able to adopt verbatim or in substance, amendments N° 9, 10, 17, 20, 26, 45, 46, 55, 65, 68, 80, 81, 86, 96, 101, 222 and 231 which were not taken up by the Commission.
- c) The Council has not been able to adopt amendments N° 35, 43, 58, 61, 69, 71, 75, 78, 87, 90, 107 and 108 which were taken up by the Commission.
- d) The Council has finally followed the Commission's amended proposal by not adopting the other amendments proposed by the European Parliament.

## Notes

- (1) OJ No C 65, 14.3.1992, p. 4.
- (2) OJ No C 73, 15.3.1993, p. 31.
- (3) Opinion of the European Parliament of 17 November 1993 (OJ No C 329, 6.12.1993, p. 150). Council Common Position of 25 July 1996 (not yet published in the Official Journal) and Decision of the European Parliament of (not yet published in the Official Journal).
- (4) OJ No L 313, 13.11.1990, p. 30. Directive as last amended by Commission Decision 95/162/EC (OJ No L 107, 12.5.1995, p. 53).
- (5) OJ No L 185, 17.7.1990, p. 16. Directive as last amended by Commission Directive 93/87/EEC (OJ No L 277, 10.11.1993, p. 32).
- (6) OJ No L
- (7) OJ No L 109, 26.4.1983, p. 8. Directive as last amended by the 1994 Act of Accession.
- (8) OJ No L 222, 14.8.1978, p. 11. Directive as last amended by the 1994 Act of Accession.
- (9) OJ No L 193, 18.7.1983, p. 1. Directive as last amended by the 1994 Act of Accession.
- (10) OJ No L 197, 18.7.1987, p. 33.
- (\*) Two years after the date of entry into force of this Directive.

**ANNEXE**

**UNION EUROPEENNE  
LE CONSEIL**

**Bruxelles, le 25 juillet 1996**

**Dossier interinstitutionnel  
n° 00/0384 (COD)**

**8811/2/96  
REV 2**

**LIMITE**

**ENER 105  
CODEC 441**

**POSITION COMMUNE (CE) N° /96  
ARRETEE PAR LE CONSEIL LE 25 JUILLET 1996  
EN VUE DE L'ADOPTION  
DE LA DIRECTIVE 96/ /CE DU PARLEMENT EUROPEEN ET DU CONSEIL  
CONCERNANT DES REGLES COMMUNES  
POUR LE MARCHÉ INTERIEUR DE L'ELECTRICITE**

**DIRECTIVE 96/ /CE DU PARLEMENT EUROPEEN ET DU CONSEIL**  
**du**

concernant des règles communes  
pour le marché intérieur de l'électricité

LE PARLEMENT EUROPEEN ET LE CONSEIL DE L'UNION EUROPEENNE,

vu le traité instituant la Communauté européenne, et notamment son article 57 paragraphe 2, son article 66 et son article 100 A,

vu la proposition de la Commission <sup>(1)</sup>,

vu l'avis du Comité économique et social <sup>(2)</sup>,

statuant conformément à la procédure visée à l'article 189B du traité <sup>(3)</sup>,

- (1) considérant qu'il importe d'adopter des mesures visant à assurer le bon fonctionnement du marché intérieur ; que ce marché comporte un espace sans frontières intérieures où la libre circulation des marchandises, des personnes, des services et des capitaux est assurée ;
- (2) considérant que l'achèvement d'un marché de l'électricité concurrentiel est un pas important vers l'achèvement du marché intérieur de l'énergie ;
- (3) considérant que les dispositions de la présente directive n'affectent en rien l'application du traité CE, et notamment de ses dispositions relatives au marché intérieur et à la concurrence ;
- (4) considérant que l'établissement du marché intérieur de l'électricité s'avère particulièrement important pour rationaliser la production, le transport et la distribution de l'électricité tout en renforçant la sécurité d'approvisionnement et la compétitivité de l'économie européenne et en respectant la protection de l'environnement ;
- (5) considérant que le marché intérieur de l'électricité doit être mis en place progressivement pour que l'industrie électrique puisse s'adapter à son nouvel environnement de manière souple et rationnelle et pour tenir compte de la diversité actuelle de l'organisation des réseaux électriques ;
- (6) considérant que l'établissement du marché intérieur dans le secteur de l'électricité doit favoriser l'interconnexion et l'interopérabilité des réseaux ;
- (7) considérant que la directive 90/547/CEE du Conseil, du 29 octobre 1990, relative au transit d'électricité sur les grands réseaux <sup>(4)</sup> et la directive 90/377/CEE du Conseil, du 29 juin 1990, instaurant une procédure communautaire assurant la transparence des prix au consommateur final industriel de gaz et d'électricité <sup>(5)</sup> ont constitué une première phase de l'établissement du marché intérieur de l'électricité ;

- (8) considérant que l'établissement du marché intérieur de l'électricité exige désormais des mesures supplémentaires ;
- (9) considérant que, dans le marché intérieur, les entreprises du secteur de l'électricité doivent pouvoir agir, sans préjudice du respect des obligations de service public, dans la perspective d'un marché de l'électricité qui soit concurrentiel et compétitif ;
- (10) considérant qu'il existe actuellement, en raison des différences structurelles dans les Etats membres, des systèmes différents de régulation du secteur de l'électricité ;
- (11) considérant que, conformément au principe de subsidiarité, un cadre de principes généraux doit être établi au niveau communautaire, mais que la fixation des modalités d'application doit incomber aux Etats membres, qui pourront choisir le régime le mieux adapté à leur situation propre ;
- (12) considérant que, quel que soit le mode d'organisation du marché en vigueur, l'accès au réseau doit être ouvert conformément à la présente directive et doit aboutir à des résultats économiques équivalents dans les Etats membres et, par conséquent, à un niveau directement comparable d'ouverture des marchés et à un degré directement comparable d'accès aux marchés de l'électricité ;
- (13) considérant que, pour certains Etats membres, l'imposition d'obligations de service public peut être nécessaire pour assurer la sécurité d'approvisionnement, la protection du consommateur et la protection de l'environnement que, selon eux, la libre concurrence, à elle seule, ne peut pas nécessairement garantir ;
- (14) considérant que la planification à long terme peut être un des moyens de réaliser lesdites obligations de service public ;
- (15) considérant que le traité prévoit des règles particulières en ce qui concerne les restrictions à la libre circulation des marchandises et à la concurrence ;
- (16) considérant que l'article 90 paragraphe 1 dudit traité oblige notamment les Etats membres à respecter ces règles en ce qui concerne les entreprises publiques et les entreprises auxquelles ils ont accordé des droits spéciaux ou exclusifs ;
- (17) considérant qu'en vertu de l'article 90 paragraphe 2 du traité, les entreprises chargées de la gestion de services d'intérêt économique général sont soumises auxdites règles dans des conditions particulières ;
- (18) considérant que la mise en oeuvre de la présente directive aura des répercussions sur les activités de ces entreprises ;
- (19) considérant que les Etats membres, lorsqu'ils imposent des obligations de service public aux entreprises du secteur de l'électricité, doivent donc respecter les règles pertinentes du traité dans l'interprétation qu'en donne la Cour de justice ;
- (20) considérant que, dans l'établissement du marché intérieur de l'électricité, il doit être pleinement tenu compte de l'objectif communautaire de la cohésion économique et sociale, notamment dans

des secteurs comme les infrastructures, nationales ou intracommunautaires, qui servent au transport de l'électricité ;

- (21) considérant la contribution qu'apporte la décision du Parlement européen et du Conseil, du ....., arrêtant un ensemble d'orientations pour les réseaux transeuropéens de l'énergie <sup>(6)</sup> au développement d'infrastructures intégrées de transport d'électricité ;
- (22) considérant qu'il faut en conséquence établir des règles communes pour la production d'électricité et l'exploitation des réseaux de transport et de distribution d'électricité ;
- (23) considérant que l'ouverture du marché de la production peut se faire sur la base de deux systèmes qui font référence à la procédure de l'autorisation et à celle de l'appel d'offres, qui doivent opérer suivant des critères objectifs, transparents et non discriminatoires ;
- (24) considérant que, dans ce cadre, il faut prendre en considération la situation des autoproducteurs et des producteurs indépendants ;
- (25) considérant que chaque réseau de transmission doit être géré et contrôlé d'une manière centralisée afin d'en assurer la sécurité, la fiabilité et l'efficacité, dans l'intérêt des producteurs et de leurs clients ; qu'en conséquence, il convient de désigner un gestionnaire du réseau de transport qui en assurera l'exploitation, l'entretien et, le cas échéant, le développement ; que l'action de ce gestionnaire doit être objective, transparente et non discriminatoire ;
- (26) considérant que les règles techniques pour le fonctionnement des réseaux de transport et des lignes directes doivent être transparentes et doivent assurer l'interopérabilité des réseaux ;
- (27) considérant qu'il convient de déterminer des critères objectifs et non discriminatoires pour l'appel des centrales ;
- (28) considérant que, pour des raisons de protection de l'environnement, priorité peut être donnée à la production d'électricité à partir de sources d'énergie renouvelables ;
- (29) considérant qu'au niveau de la distribution, des droits d'approvisionnement peuvent être octroyés à des clients situés dans une zone donnée et qu'un gestionnaire doit être désigné pour exploiter, entretenir et, le cas échéant, développer chaque réseau de distribution ;
- (30) considérant que la transparence et la non-discrimination supposent que la fonction de transport des entreprises intégrées verticalement soit gérée de façon indépendante des autres activités ;
- (31) considérant que l'activité de l'acheteur unique doit être gérée séparément des activités de production et de distribution des entreprises verticalement intégrées ; qu'il faut limiter le flux d'information entre les activités d'acheteur unique et ces activités de production et de distribution ;
- (32) considérant que les comptes de toutes les entreprises intégrées du secteur de l'électricité doivent présenter un maximum de transparence, en vue notamment de déceler d'éventuels abus de position dominante, tels que des tarifs anormalement bas ou élevés, ou des pratiques discriminatoires pour des prestations équivalentes ; qu'à cette fin, les comptes doivent être séparés pour chaque activité ;

- (33) considérant qu'il convient également de prévoir pour les autorités compétentes un accès à la comptabilité interne des entreprises en respectant la confidentialité ;
- (34) considérant qu'en raison de la diversité des structures et de la spécificité des systèmes dans les Etats membres, il convient de prévoir des options différentes d'accès au réseau qui seront gérées conformément à des critères objectifs, transparents et non discriminatoires ;
- (35) considérant qu'il convient de prévoir la possibilité d'autoriser la construction et l'utilisation de lignes directes ;
- (36) considérant qu'il y a lieu de prévoir des clauses de sauvegarde et des procédures de règlement des litiges ;
- (37) considérant qu'il convient d'éviter tout abus de position dominante et tout comportement prédatore ;
- (38) considérant qu'en raison du risque de difficultés particulières d'adaptation de leurs réseaux dans certains Etats membres, la possibilité de recourir à des régimes transitoires ou à des dérogations doit être prévue, notamment pour le fonctionnement des petits réseaux isolés ;
- (39) considérant que la présente directive constitue une autre phase de la libéralisation ; que sa mise en application laissera cependant subsister des entraves aux échanges d'électricité entre Etats membres ; qu'en conséquence des propositions en vue d'améliorer le fonctionnement du marché intérieur de l'électricité pourront être faites à la lumière de l'expérience acquise ; que la Commission doit donc faire rapport au Conseil et au Parlement européen sur l'application de la présente directive,

ONT ARRETE LA PRESENTE DIRECTIVE :

## Chapitre I

### Champ d'application et définitions

#### Article premier

La présente directive établit des règles communes concernant la production, le transport et la distribution d'électricité. Elle définit les modalités d'organisation et de fonctionnement du secteur de l'électricité, l'accès au marché, les critères et procédures applicables en ce qui concerne les appels d'offres et l'octroi des autorisations ainsi que l'exploitation des réseaux.

#### Article 2

Aux fins de la présente directive, on entend par :

- 1) "production", la production d'électricité ;
- 2) "producteur", toute personne physique ou morale produisant de l'électricité ;
- 3) "autoproducteur", toute personne physique ou morale produisant de l'électricité essentiellement pour son propre usage ;
- 4) "producteur indépendant"
  - (a) un producteur qui n'assume pas des fonctions de transport ou de distribution d'électricité sur le territoire couvert par le réseau où il est installé ;
  - (b) dans les Etats membres où il n'existe pas d'entreprises verticalement intégrées et qui ont recours à une procédure d'appel d'offres, un producteur au sens du point a) qui peut ne pas être assujéti exclusivement à l'ordre de préséance économique du réseau interconnecté ;
- 5) "transport", le transport d'électricité sur le réseau à haute tension interconnecté aux fins de fourniture à des clients finals ou à des distributeurs ;
- 6) "distribution", le transport d'électricité sur des réseaux de distribution à moyenne et à basse tension aux fins de fourniture à des clients ;
- 7) "clients", les clients grossistes ou finals d'électricité et les compagnies de distribution ;
- 8) "clients grossistes", toute personne physique ou morale, si son existence est reconnue par les Etats membres, qui achète ou vend de l'électricité et qui n'assume pas de fonctions de transport, de production ou de distribution à l'intérieur ou à l'extérieur du réseau où elle est installée ;
- 9) "client final", le client achetant de l'électricité pour sa consommation propre ;
- 10) "interconnexions", les équipements utilisés pour interconnecter les réseaux électriques ;
- 11) "réseau interconnecté", réseau constitué de plusieurs réseaux de transport et de distribution reliés entre eux par une ou plusieurs interconnexions ;

- 12) "ligne directe", une ligne d'électricité complémentaire au réseau interconnecté ;
- 13) "ordre de préséance économique", le classement de sources de production d'électricité selon des critères économiques ;
- 14) "services auxiliaires", tous les services nécessaires à l'exploitation d'un réseau de transport ou de distribution ;
- 15) "utilisateur du réseau", toute personne physique ou morale alimentant un réseau de transport ou de distribution ou desservie par un de ces réseaux ;
- 16) "fourniture", la livraison et/ou la vente d'électricité à des clients ;
- 17) "entreprise d'électricité intégrée", une entreprise verticalement ou horizontalement intégrée ;
- 18) "entreprise verticalement intégrée", une entreprise assurant au moins deux des fonctions suivantes : production, transport ou distribution d'électricité ;
- 19) "entreprise horizontalement intégrée", une entreprise assurant au moins une des fonctions de production pour la vente ou de transport ou de distribution d'électricité, ainsi qu'une autre activité en dehors du secteur de l'électricité ;
- 20) "procédure d'appel d'offres", la procédure par laquelle des besoins additionnels et des capacités de renouvellement planifiés sont couverts par des fournitures en provenance d'installations de production nouvelles ou existantes ;
- 21) "planification à long terme", la planification des besoins d'investissement en capacité de production et de transport dans une perspective à long terme, en vue de satisfaire la demande en électricité du réseau et d'assurer l'approvisionnement des clients ;
- 22) "acheteur unique", toute personne morale qui, dans le réseau dans lequel elle est établie, est responsable de la gestion unifiée du système de transport et/ou de l'achat et de la vente centralisés de l'électricité ;
- 23) "petit réseau isolé", tout réseau qui a une consommation inférieure à 2500 GWh en 1996, et qui peut être interconnecté avec d'autres réseaux pour une quantité inférieure à 5 % de sa consommation annuelle.

## Chapitre II

### Règles générales d'organisation du secteur

#### Article 3

1. Les Etats membres, sur la base de leur organisation institutionnelle et dans le respect du principe de subsidiarité, veillent à ce que les entreprises d'électricité, sans préjudice du paragraphe 2, soient exploitées conformément aux principes de la présente directive, dans la perspective d'un marché de l'électricité concurrentiel et compétitif et s'abstiennent de toute discrimination pour ce qui est des droits et obligations de ces entreprises. Les deux approches d'accès aux réseaux mentionnées aux articles 17 et 18 doivent aboutir à des résultats économiques équivalents et, par conséquent, à un niveau directement comparable d'ouverture des marchés et à un degré directement comparable d'accès aux marchés de l'électricité.

2. En tenant pleinement compte des dispositions pertinentes du traité, en particulier de son article 90, les Etats membres peuvent imposer aux entreprises du secteur de l'électricité des obligations de service public dans l'intérêt économique général, qui peuvent porter sur la sécurité, y compris la sécurité d'approvisionnement, la régularité, la qualité et le prix de la fourniture, ainsi que la protection de l'environnement. Ces obligations doivent être clairement définies, transparentes, non discriminatoires et contrôlables ; celles-ci, ainsi que leurs révisions éventuelles, sont publiées et communiquées sans tarder à la Commission par les Etats membres. Comme moyen pour réaliser les obligations de service public précitées, les Etats membres qui le souhaitent peuvent mettre en oeuvre une planification à long terme.

3. Les Etats membres peuvent décider de ne pas appliquer les dispositions des articles 5, 6, 17, 18 et 21 dans la mesure où l'application de ces dispositions entraverait l'accomplissement, en droit ou en fait, des obligations imposées aux entreprises d'électricité dans l'intérêt économique général et dans la mesure où le développement des échanges n'en serait pas affecté dans une mesure qui serait contraire aux intérêts de la Communauté. L'intérêt de la Communauté comprend, entre autres, la concurrence en ce qui concerne les clients éligibles conformément à la présente directive et à l'article 90 du traité.

## Chapitre III

### Production

#### Article 4

Pour la construction de nouvelles installations de production, les Etats membres peuvent choisir entre un système d'autorisation et/ou un système d'appel d'offres. Les autorisations ainsi que les appels d'offres devront s'opérer suivant des critères objectifs, transparents et non discriminatoires.

## Article 5

1. Lorsqu'ils choisissent la procédure d'autorisation, les Etats membres fixent les critères pour l'octroi des autorisations de construction d'installations de production sur leur territoire. Les critères peuvent porter sur :

- (a) la sécurité et la sûreté des réseaux électriques, des installations et des équipements associés ;
- (b) la protection de l'environnement ;
- (c) l'occupation des sols et le choix des sites ;
- (d) l'utilisation du domaine public ;
- (e) l'efficacité énergétique ;
- (f) la nature des sources primaires ;
- (g) les caractéristiques particulières du demandeur, telles que : capacités techniques, économiques et financières ;
- (h) les dispositions de l'article 3.

2. Les critères détaillés et les procédures sont rendus publics.

3. Les raisons d'un refus d'autorisation doivent être objectives et non discriminatoires ; elles sont dûment motivées et justifiées et elles sont communiquées au demandeur et, pour information, à la Commission. Des voies de recours doivent être ouvertes au demandeur.

## Article 6

1. Lorsqu'ils choisissent la procédure d'appel d'offres, les Etats membres ou tout autre organisme compétent désigné par l'Etat membre concerné dressent l'inventaire des nouveaux moyens de production, y compris des capacités de renouvellement, sur la base du bilan prévisionnel régulier visé au paragraphe 2. L'inventaire tient compte des besoins d'interconnexion des réseaux. Les capacités requises sont attribuées par procédure d'appel d'offres selon les modalités définies au présent article.

2. Le gestionnaire du réseau de transport ou toute autre autorité compétente désignée par l'Etat membre concerné élabore et publie sous le contrôle de l'Etat, au moins tous les deux ans, un bilan prévisionnel régulier sur les capacités de production et de transport susceptibles d'être raccordées au réseau, sur les besoins d'interconnexions avec d'autres réseaux et les capacités de transport potentielles ainsi que sur la demande d'électricité. Ce bilan prévisionnel couvre une période définie par chaque Etat membre.

3. La procédure d'appel d'offres pour les moyens de production fait l'objet d'une publication au Journal officiel des Communautés européennes au moins six mois avant la date de clôture de l'appel d'offres.

Le cahier des charges est mis à la disposition de toute entreprise intéressée, installée sur le territoire d'un Etat membre, de sorte que celle-ci puisse disposer d'un délai suffisant pour y répondre.

Le cahier des charges contient la description détaillée des spécifications du marché, de la procédure à suivre par tous les soumissionnaires, de même que la liste exhaustive des critères qui déterminent la sélection des soumissionnaires et l'attribution du marché. Ces spécifications peuvent concerner également les domaines visés à l'article 5 paragraphe 1.

4. Lorsque l'appel d'offres porte sur les capacités de production requises, il doit prendre en considération également les offres de fourniture d'électricité garanties à long terme émanant d'unités de production existantes, à condition qu'elles permettent de couvrir les besoins supplémentaires.

5. Les Etats membres désignent une autorité ou un organisme public ou un organisme privé indépendant des activités de production, de transport et de distribution d'électricité qui sera responsable de l'organisation, du suivi et du contrôle de la procédure d'appel d'offres. Cette autorité ou cet organisme prend toutes les mesures nécessaires pour que la confidentialité de l'information contenue dans les offres soit garantie.

6. Cependant, dans les Etats membres qui ont opté pour la procédure d'appel d'offres, il doit être possible aux autoproducteurs et aux producteurs indépendants d'obtenir une autorisation sur la base de critères objectifs, transparents et non discriminatoires conformément aux articles 4 et 5.

## Chapitre IV

### Exploitation du réseau de transport

#### Article 7

1. Les Etats membres désignent, ou demandent aux entreprises propriétaires de réseaux de transport de désigner, pour une durée à déterminer par les Etats membres en fonction de considérations d'efficacité et d'équilibre économique, un gestionnaire du réseau responsable de l'exploitation, de l'entretien et, le cas échéant, du développement du réseau de transport dans une zone donnée, ainsi que de ses interconnexions avec d'autres réseaux, pour garantir la sécurité d'approvisionnement.

2. Les Etats membres veillent à ce que soient élaborées et publiées des prescriptions techniques fixant les exigences techniques minimales de conception et de fonctionnement en matière de raccordement aux réseaux d'installations de production, de réseaux de distribution, d'équipements de clients directement connectés, de circuits d'interconnexions et de lignes directes. Ces exigences doivent assurer l'interopérabilité des réseaux, être objectives et non discriminatoires. Elles sont notifiées à la Commission, conformément à l'article 8 de la directive 83/189/CEE du Conseil, du 28 mars 1983, prévoyant une procédure d'information dans le domaine des normes et réglementations techniques <sup>(7)</sup>.

3. Le gestionnaire du réseau est chargé de gérer le flux d'énergie sur le réseau en tenant compte des échanges avec d'autres réseaux interconnectés. A cette fin, le gestionnaire du réseau est chargé d'assurer la sécurité du réseau d'électricité, sa fiabilité et son efficacité et, dans ce contexte, de veiller à la disponibilité des services auxiliaires indispensables.

4. Le gestionnaire du réseau fournit au gestionnaire de tout autre réseau avec lequel son réseau est interconnecté des informations suffisantes pour garantir un fonctionnement sûr et efficace, un développement coordonné et l'interopérabilité du réseau interconnecté.

5. Le gestionnaire du réseau s'abstient de toute discrimination entre les utilisateurs du réseau ou les catégories d'utilisateurs du réseau, notamment en faveur de ses filiales ou actionnaires.

6. A moins que le réseau de transport ne soit déjà indépendant des activités de production et distribution, le gestionnaire du réseau doit être indépendant, au moins sur le plan de la gestion, des autres activités non liées au réseau de transport.

#### Article 8

1. Le gestionnaire du réseau de transport est responsable de l'appel des installations de production situées dans sa zone et de l'utilisation des interconnexions avec les autres réseaux.

2. Sans préjudice de la fourniture d'électricité sur la base d'obligations contractuelles, y compris celles qui découlent des spécifications de l'appel d'offres, l'appel des installations de production et l'utilisation des interconnexions sont faits sur la base de critères qui peuvent être approuvés par l'Etat membre, et qui doivent être objectifs, publiés et appliqués de manière non discriminatoire, afin d'assurer un bon fonctionnement du marché intérieur de l'électricité. Ils tiennent compte de l'ordre de préséance économique de l'électricité provenant des installations de production disponibles ou de transferts par interconnexion, ainsi que des contraintes techniques pesant sur le réseau.

3. Un Etat membre peut imposer au gestionnaire du réseau, lorsqu'il appelle les installations de production, de donner la priorité à celles qui utilisent des sources d'énergie renouvelables ou des déchets ou qui exploitent un procédé de production combinant chaleur et électricité.

4. Un Etat membre peut, pour des raisons de sécurité d'approvisionnement, ordonner que les installations de production utilisant des sources d'énergie combustible primaires indigènes soient appelées en priorité, dans une proportion n'excédant pas, au cours d'une année civile, 15% de la quantité totale d'énergie primaire nécessaire pour produire l'électricité consommée dans l'Etat membre concerné.

#### Article 9

Le gestionnaire du réseau de transport doit préserver la confidentialité des informations commercialement sensibles dont il a connaissance au cours de l'exécution de ses tâches.

## Chapitre V

### Exploitation du réseau de distribution

#### Article 10

1. Les Etats membres peuvent obliger les compagnies de distribution à approvisionner des clients situés dans une zone donnée. La tarification de ces fournitures peut être réglementée, par exemple pour assurer l'égalité de traitement des clients en cause.
2. Les Etats membres désignent ou demandent aux entreprises propriétaires ou responsables de réseaux de distribution de désigner un gestionnaire du réseau chargé d'exploiter, d'entretenir et, le cas échéant, de développer le réseau de distribution dans une zone donnée, ainsi que ses interconnexions avec d'autres réseaux.
3. Les Etats membres veillent à ce que le gestionnaire du réseau agisse conformément aux articles 11 et 12.

#### Article 11

1. Le gestionnaire du réseau de distribution veille à assurer la sécurité du réseau de distribution d'électricité, sa fiabilité et son efficacité dans la zone qu'il couvre, dans le respect de l'environnement.
2. En tout état de cause, il doit s'abstenir de toute discrimination entre les utilisateurs du réseau ou les catégories d'utilisateurs du réseau, notamment en faveur de ses filiales ou actionnaires.
3. Un Etat membre peut imposer au gestionnaire du réseau de distribution, lorsqu'il appelle les installations de production, de donner la priorité à celles qui utilisent des sources d'énergie renouvelables ou des déchets ou qui exploitent un procédé de production combinant chaleur et électricité.

#### Article 12

Le gestionnaire du réseau de distribution doit préserver la confidentialité des informations commercialement sensibles dont il a connaissance au cours de l'exécution de ses tâches.

## Chapitre VI

### Dissociation comptable et transparence de la comptabilité

#### Article 13

Les Etats membres ou toute autorité compétente qu'ils désignent ou les autorités de règlement des litiges visées à l'article 20 paragraphe 3 ont le droit d'accès à la comptabilité des entreprises de production, de transport ou de distribution dont la consultation est nécessaire à leur mission de contrôle.

## Article 14

1. Les Etats membres prennent les mesures nécessaires pour garantir une tenue de la comptabilité des entreprises du secteur de l'électricité qui soit conforme aux dispositions des paragraphes 2 à 5.
2. Indépendamment du régime de propriété qui leur est applicable et de leur forme juridique, les entreprises d'électricité établissent, font contrôler et publient leurs comptes annuels conformément aux règles nationales relatives aux comptes annuels des sociétés de capitaux, adoptées conformément à la quatrième directive, 78/660/CEE, du Conseil, du 25 juillet 1978, fondée sur l'article 54 paragraphe 3 sous g) du traité et concernant les comptes annuels de certaines formes de sociétés<sup>(8)</sup>. Les entreprises qui ne sont pas tenues légalement de publier leurs comptes annuels tiennent un exemplaire de ceux-ci à la disposition du public à leur siège social.
3. Les entreprises d'électricité intégrées tiennent, dans leur comptabilité interne, des comptes séparés pour leurs activités de production, de transport et de distribution et, le cas échéant, des comptes consolidés pour d'autres activités en dehors du secteur de l'électricité, comme elles devraient le faire si les activités en question étaient exercées par des entreprises distinctes, en vue d'éviter les discriminations, les subventions croisées et les distorsions de concurrence. Elles font figurer dans l'annexe de leurs comptes un bilan et un compte de résultats pour chaque activité.
4. Les entreprises précisent en annexe de leurs comptes annuels les règles d'imputation des postes d'actif et de passif et des charges et recettes qu'elles appliquent pour établir les comptes séparés visés au paragraphe 3. Ces règles ne peuvent être modifiées qu'à titre exceptionnel. Ces modifications doivent être indiquées dans l'annexe et doivent être dûment motivées.
5. Les comptes annuels indiquent, dans l'annexe, toute opération d'une certaine importance effectuée avec les entreprises liées, au sens de l'article 41 de la septième directive, 83/349/CEE, du Conseil, du 13 juin 1983, fondée sur l'article 54 paragraphe 3 point g) du traité, concernant les comptes consolidés<sup>(9)</sup> ou avec les entreprises associées, au sens de l'article 33 paragraphe 1 de la même directive, ou avec les entreprises appartenant aux mêmes actionnaires.

## Article 15

1. Les Etats membres qui désignent comme acheteur unique une entreprise d'électricité verticalement intégrée ou une partie d'une entreprise d'électricité verticalement intégrée établissent des dispositions requérant que l'activité de l'acheteur unique soit gérée séparément des activités de production et de distribution de l'entreprise intégrée.
2. Les Etats membres s'assurent qu'il n'y a pas de flux d'information entre les activités d'acheteur unique des entreprises d'électricité verticalement intégrées et leurs activités de production et de distribution, excepté l'information nécessaire pour mener à bien les responsabilités d'acheteur unique.

## Chapitre VII

### L'organisation de l'accès au réseau

#### Article 16

Pour l'organisation de l'accès au réseau, les Etats membres peuvent choisir entre les formules visées à l'article 17 et/ou à l'article 18. Ces deux formules sont mises en oeuvre conformément à des critères objectifs, transparents et non discriminatoires.

#### Article 17

1. Dans le cas de l'accès négocié au réseau, les Etats membres prennent les mesures nécessaires pour que les producteurs d'électricité et, lorsque leur existence est autorisée par les Etats membres, les entreprises de fourniture d'électricité ainsi que les clients éligibles, intérieurs ou extérieurs au territoire couvert par le réseau, puissent négocier un accès au réseau pour conclure des contrats de fourniture entre eux sur la base d'accords commerciaux volontaires.

2. Dans le cas où un client éligible est raccordé aux réseaux de distribution, l'accès au réseau doit faire l'objet d'une négociation avec le gestionnaire du réseau de distribution concerné et, si nécessaire, avec le gestionnaire du réseau de transport concerné.

3. Pour promouvoir la transparence et pour faciliter les négociations d'accès au réseau, les gestionnaires de réseau doivent publier au cours de la première année après la mise en application de la présente directive, une fourchette indicative des prix pour l'utilisation des réseaux de transport et de distribution. Dans la mesure du possible, pour les années suivantes, les prix indicatifs publiés doivent se fonder sur les prix moyens négociés et arrêtés pour la période précédente de douze mois.

4. Les Etats membres peuvent également opter pour un système d'accès au réseau réglementé donnant aux clients éligibles un droit d'accès, sur la base de tarifs publiés pour l'utilisation des réseaux de transport et de distribution, au moins équivalent, en termes d'accès au réseau, aux autres systèmes d'accès visés dans le présent chapitre.

5. Le gestionnaire du réseau de transport ou de distribution concerné peut refuser l'accès s'il ne dispose pas de la capacité nécessaire. Le refus doit être dûment motivé et justifié, en particulier en ce qui concerne l'article 3.

#### Article 18

1. Dans le cas de la formule de l'acheteur unique, les Etats membres désignent une personne morale comme acheteur unique à l'intérieur du territoire couvert par le gestionnaire du réseau. Les Etats membres prennent les mesures nécessaires pour que :

- (i) un tarif non discriminatoire pour l'utilisation du réseau de transport et de distribution soit publié ;
- (ii) les clients éligibles aient, pour couvrir leurs propres besoins, la possibilité de conclure des contrats de fourniture avec des producteurs et, lorsque leur existence est autorisée par les Etats membres, avec des entreprises de fourniture en dehors du territoire couvert par le réseau ;

- (iii) les clients éligibles aient, pour couvrir leurs propres besoins, la possibilité de conclure des contrats de fourniture avec des producteurs à l'intérieur du territoire couvert par le réseau ;
- (iv) les producteurs indépendants négocient l'accès au réseau avec les opérateurs des réseaux de transport et de distribution en vue de conclure des contrats de fourniture avec des clients éligibles en dehors du réseau, sur la base d'un accord commercial volontaire.

2. L'acheteur unique peut être tenu d'acheter l'électricité ayant fait l'objet d'un contrat entre un client éligible et un producteur situé à l'intérieur ou à l'extérieur du territoire couvert par le réseau à un prix égal au prix de vente offert par l'acheteur unique aux clients éligibles moins le prix du tarif publié, mentionné au paragraphe 1 point i).

3. Si l'obligation d'achat visée au paragraphe 2 n'est pas imposée à l'acheteur unique, les Etats membres prennent les mesures nécessaires pour que les contrats de fourniture mentionnés au paragraphe 1 points ii) et iii) soient réalisés soit par l'accès au réseau sur la base du tarif publié mentionné au paragraphe 1 point i), soit par un accès négocié au réseau selon les conditions définies à l'article 17. Dans ce dernier cas, l'acheteur unique ne serait pas tenu de publier un tarif non discriminatoire à l'usage du réseau de transport et de distribution.

4. L'acheteur unique peut refuser l'accès au réseau et peut refuser d'acheter l'électricité aux clients éligibles s'il ne dispose pas de la capacité de transport ou de distribution nécessaire. Le refus doit être dûment motivé et justifié, en particulier en ce qui concerne l'article 3.

#### Article 19

1. Les Etats membres prennent les mesures nécessaires pour garantir une ouverture de leurs marchés de l'électricité, de sorte que des contrats soumis aux conditions visées aux articles 17 et 18 puissent être conclus au moins jusqu'à un niveau significatif qui doit être communiqué annuellement à la Commission.

La part du marché national est calculée sur la base de la part communautaire d'électricité consommée par les consommateurs finals dont la consommation est supérieure à 40 GWh par an (par site de consommation et y compris l'autoproduction).

La part communautaire moyenne est calculée par la Commission sur la base des informations qui lui sont communiquées régulièrement par les Etats membres. La Commission publie au Journal officiel des Communautés européennes, avant le 1<sup>er</sup> novembre de chaque année, cette part communautaire moyenne, qui définit le degré d'ouverture du marché, ainsi que toutes les informations requises pour la compréhension du calcul.

2. La part du marché national visée au paragraphe 1 sera progressivement augmentée sur une période de six ans. Cette augmentation sera calculée en réduisant le seuil de la consommation communautaire de 40 GWh, mentionné au paragraphe 1, à un niveau de consommation annuelle d'électricité de 20 GWh trois ans après l'entrée en vigueur de la présente directive et à un niveau de 9 GWh de consommation annuelle d'électricité six ans après l'entrée en vigueur de la présente directive.

3. Les Etats membres indiquent ceux des clients établis sur leur territoire représentant les parts visées aux paragraphes 1 et 2 qui ont la capacité juridique de passer des contrats de fourniture d'électricité conformément aux articles 17 et 18, étant entendu que tous les consommateurs finals consommant plus de

100 GWh par an (par site de consommation et autoproduction comprise) doivent faire partie de cette catégorie.

Les entreprises de distribution, si elles ne sont pas déjà désignées comme clients éligibles en vertu du présent paragraphe, auront la capacité juridique de passer des contrats dans les conditions prévues aux articles 17 et 18 pour le volume d'électricité consommé par leurs clients désignés comme éligibles dans leur réseau de distribution en vue d'approvisionner ces clients.

4. Les Etats membres publient, avant le 30 janvier de chaque année, les critères de définition des clients éligibles ayant la capacité de conclure des contrats dans les conditions énoncées aux articles 17 et 18. Cette information est envoyée à la Commission, pour publication au Journal officiel des Communautés européennes, accompagnée de toute autre information appropriée pour justifier de la réalisation de l'ouverture de marché prévue au paragraphe 1. La Commission peut demander à un Etat membre de modifier ses indications visées au paragraphe 3 si elles font obstacle à l'application correcte de la présente directive en ce qui concerne le bon fonctionnement du marché intérieur de l'électricité. Si l'Etat membre concerné ne donne pas suite à cette demande dans un délai de trois mois, une décision définitive est prise conformément à la procédure I décrite à l'article 2 de la décision 83/373/CEE du Conseil, du 13 juillet 1987, fixant les modalités de l'exercice des compétences d'exécution conférées à la Commission <sup>(10)</sup>.

5. Pour éviter un déséquilibre dans l'ouverture des marchés de l'électricité durant la période visée à l'article 26 :

- (a) des contrats pour la fourniture d'électricité conclus aux termes des dispositions des articles 17 et 18 avec un client éligible du réseau d'un autre Etat membre ne peuvent être interdits si le client est considéré comme éligible dans les deux réseaux concernés ;
- (b) dans les cas où les opérations visées au point a) sont refusées du fait que le client n'est éligible que dans l'un des deux réseaux, la Commission peut obliger, compte tenu de la situation du marché et de l'intérêt commun, la partie refusante à exécuter la fourniture d'électricité réclamée à la demande de l'Etat membre où le client éligible est établi.

Parallèlement à la procédure et au calendrier prévus à l'article 26, et au plus tard après la moitié de la période prévue audit article, la Commission revoit l'application du premier alinéa point b) sur la base de l'évolution du marché en tenant compte de l'intérêt commun. A la lumière de l'expérience acquise, la Commission évalue la situation et présente un rapport sur un déséquilibre éventuel dans l'ouverture des marchés de l'électricité au regard du présent paragraphe.

#### Article 20

1. Les Etats membres prennent les mesures nécessaires pour permettre :

- (i) aux producteurs indépendants et aux autoproducteurs de négocier un accès au réseau pour approvisionner leurs propres établissements et filiales établis dans le même Etat membre ou dans un autre Etat membre, au moyen du réseau interconnecté ;
- (ii) aux producteurs extérieurs au territoire couvert par le réseau de conclure un contrat de fourniture qui ferait suite à un appel d'offres pour de nouvelles capacités de production et d'avoir un accès au réseau pour exécuter ce contrat.

2. Les Etats membres veillent à ce que les parties négocient de bonne foi et qu'aucune d'entre elles n'abuse de sa position de négociation en entravant la bonne fin des négociations.

3. Les Etats membres désignent une autorité compétente, qui doit être indépendante des parties, pour régler les litiges relatifs aux contrats et aux négociations en question. Cette autorité doit notamment régler les litiges concernant les contrats, les négociations et le refus de l'accès et d'achat.

4. En cas de litige transfrontalier, l'autorité de règlement du litige sera l'autorité de règlement du litige couvrant le réseau de l'acheteur unique ou du gestionnaire de réseau qui refuse l'utilisation ou l'accès au réseau.

5. Le recours à cette autorité se fait sans préjudice de l'exercice des voies de recours du droit communautaire.

#### Article 21

1. Les Etats membres prennent des mesures selon les formules et droits visés aux articles 17 et 18 pour permettre :

- à tous les producteurs d'électricité et à toutes les entreprises de fourniture d'électricité, lorsque les Etats membres en autorisent l'existence, établis sur leur territoire d'approvisionner par une ligne directe leurs propres établissements, filiales et clients éligibles ;
- à tout client éligible établi sur leur territoire d'être approvisionné en électricité par une ligne directe par un producteur et des entreprises de fourniture, lorsque de tels fournisseurs sont autorisés par les Etats membres.

2. Les Etats membres fixent les critères relatifs à l'octroi des autorisations de construction de lignes directes sur leur territoire. Ces critères doivent être objectifs et non discriminatoires.

3. Les possibilités de fourniture par ligne directe visées au paragraphe 1 n'affectent pas la possibilité de conclure des contrats de fourniture d'électricité conformément aux articles 17 et 18.

4. Les Etats membres peuvent subordonner l'autorisation de construire une ligne directe soit à un refus d'accès aux réseaux sur la base, selon le cas, de l'article 17 paragraphe 5 ou de l'article 18 paragraphe 4, soit à l'ouverture d'une procédure de règlement des litiges conformément à l'article 20.

5. Les Etats membres peuvent refuser l'autorisation d'une ligne directe si l'octroi d'une telle autorisation va à l'encontre des dispositions de l'article 3. Le refus doit être dûment motivé et justifié.

#### Article 22

Les Etats membres créent des mécanismes appropriés et efficaces de régulation, de contrôle et de transparence afin d'éviter tout abus de position dominante, au détriment notamment des consommateurs, et tout comportement prédateur. Ces mécanismes tiennent compte des dispositions du traité et plus particulièrement de son article 86.

## Chapitre VIII

### Dispositions finales

#### Article 23

En cas de crise soudaine sur le marché de l'énergie ou de menace pour la sécurité physique ou la sûreté des personnes, des appareils ou installations, ou encore l'intégrité du réseau, un Etat membre peut prendre temporairement les mesures de sauvegarde nécessaires.

Ces mesures doivent provoquer le moins de perturbations possibles pour le fonctionnement du marché intérieur et ne doivent pas excéder la portée strictement indispensable pour remédier aux difficultés soudaines qui se sont manifestées.

L'Etat membre en question notifie immédiatement ces mesures aux autres Etats membres et à la Commission, qui peut décider qu'il doit les modifier ou les supprimer, dans la mesure où elles provoquent des distorsions de concurrence et perturbent les échanges d'une manière incompatible avec l'intérêt commun.

#### Article 24

1. Les Etats Membres où des engagements ou des garanties de fonctionnement, accordés avant l'entrée en vigueur de la présente directive, risquent de ne pas pouvoir être honorés en raison des dispositions de la présente directive pourront demander à bénéficier d'un régime transitoire ; celui-ci pourra leur être accordé par la Commission, en tenant compte, entre autres, de la taille du réseau concerné, du niveau d'interconnexion du réseau et de la structure de son industrie de l'électricité. La Commission informe les Etats membres de ces demandes avant de prendre une décision, dans le respect de la confidentialité. Cette décision est publiée au Journal officiel des Communautés européennes.

2. Le régime transitoire est limité dans le temps et il est lié à l'expiration des engagements ou des garanties mentionnés au paragraphe 1. Le régime transitoire peut comporter des dérogations aux chapitres IV, VI et VII de la présente directive. Les demandes de régime transitoire doivent être notifiées à la Commission au plus tard un an après l'entrée en vigueur de la présente directive.

3. Les Etats membres qui, après l'entrée en vigueur de la présente directive, peuvent prouver que des problèmes importants se posent pour l'exploitation de leurs petits réseaux isolés peuvent demander à bénéficier de dérogations aux dispositions pertinentes des chapitres IV, V, VI et VII, qui pourront leur être accordées par la Commission. Celle-ci informe les Etats membres de ces demandes avant de prendre une décision, dans le respect de la confidentialité. Cette décision est publiée au Journal officiel des Communautés européennes. Le présent paragraphe est aussi applicable au Luxembourg.

#### Article 25

1. La Commission présente au Conseil et au Parlement européen, avant la fin de la première année suivant l'entrée en vigueur de la présente directive, un rapport sur les mesures d'harmonisation nécessaires non liées aux dispositions de la présente directive. Le cas échéant, la Commission joint à ce rapport toute proposition d'harmonisation nécessaire au bon fonctionnement du marché intérieur de l'électricité.

2. Le Conseil et le Parlement européen se prononcent sur lesdites propositions dans un délai de deux ans à compter de la présentation de celles-ci.

#### Article 26

La Commission réexamine l'application de la présente directive et soumet un rapport sur l'expérience acquise dans le fonctionnement du marché intérieur de l'électricité et l'application des règles générales mentionnées à l'article 3, ceci afin de permettre au Parlement européen et au Conseil, à la lumière de l'expérience acquise, d'examiner, en temps utile, la possibilité d'une nouvelle ouverture du marché, qui deviendrait effective neuf ans après l'entrée en vigueur de la présente directive, en tenant compte de la coexistence des systèmes visés aux articles 17 et 18.

#### Article 27

1. Les Etats membres mettent en vigueur les dispositions législatives, réglementaires et administratives nécessaires pour se conformer à la présente directive au plus tard le .....<sup>(\*)</sup>. Ils en informent immédiatement la Commission.

2. En raison des spécificités techniques de leur réseau d'électricité, la Belgique, la Grèce et l'Irlande peuvent disposer d'un délai supplémentaire, respectivement d'un an, de deux ans et d'un an, pour mettre en application les obligations résultant de la présente directive. Lorsqu'ils ont recours à cette option, ces Etats membres en informent la Commission.

3. Lorsque les Etats membres adoptent ces dispositions, celles-ci contiennent une référence à la présente directive ou sont accompagnées d'une telle référence lors de leur publication officielle. Les modalités de cette référence sont arrêtées par les Etats membres.

#### Article 28

La présente directive entre en vigueur le vingtième jour suivant celui de sa publication au Journal officiel des Communautés européennes.

#### Article 29

Les Etats membres sont destinataires de la présente directive.

Fait à Bruxelles, le

Par le Parlement européen  
Le président

Par le Conseil  
Le président

**Dossier interinstitutionnel  
n° 93/0384 (COD)**

**8811/2/96  
REV 2 ADD 1**

**LIMITE**

**ENER 105  
CODEC 441**

**POSITION COMMUNE ARRETEE PAR LE CONSEIL  
LE 25 JUILLET 1996  
EN VUE DE L'ADOPTION DE LA DIRECTIVE  
DU PARLEMENT EUROPEEN ET DU CONSEIL  
CONCERNANT DES REGLES COMMUNES POUR LE MARCHE INTERIEUR DE  
L'ELECTRICITE**

**EXPOSE DES MOTIFS DU CONSEIL**

## I. INTRODUCTION

1. Le 24 février 1992, la Commission a transmis au Conseil une proposition concernant des règles communes pour le marché intérieur de l'électricité, fondée sur l'article 100 A du traité CE.
2. Le Comité économique et social et le Parlement européen ont rendu leurs avis respectivement le 27 janvier et le 17 novembre 1993.
3. Le 11 février 1994, la Commission a transmis une proposition modifiée au Conseil et au Parlement européen.
4. Lors de sa session du 25 juillet 1996, le Conseil a arrêté sa position commune conformément à l'article 189 B du traité.

## II. OBJECTIFS

5. La proposition de directive a pour objet de franchir une nouvelle étape sur la voie de l'achèvement du marché intérieur de l'électricité en établissant des règles communes concernant la production, le transport et la distribution d'électricité. Elle définit les modalités d'organisation et de fonctionnement du secteur de l'électricité, l'accès au marché, les critères et procédures applicables en ce qui concerne les appels d'offres et l'octroi d'autorisations ainsi que l'exploitation des réseaux.

## III. ANALYSE DE LA POSITION COMMUNE

6. Le Conseil est parvenu à un accord sur le texte de la position commune sur la base du cadre général suivant :
  - a) il a été décidé de séparer la directive sur le marché intérieur de l'électricité de celle sur le marché intérieur du gaz ;
  - b) le marché intérieur de l'électricité fera, dans un premier temps, l'objet d'une ouverture progressive étalée sur neuf ans ;
  - c) pour la construction de nouvelles installations de production, les Etats membres ont le choix entre une procédure d'appel d'offres et une procédure d'autorisation ;
  - d) pour accorder l'accès aux réseaux, les Etats membres ont le choix entre le système de l'"accès négocié de tiers" et celui "de l'acheteur unique" ;
  - e) toutes les questions liées aux obligations de service public sont traitées à l'article 3 ;
  - f) compte tenu du principe de subsidiarité, les Etats membres se sont vu conférer un rôle plus étendu en ce qui concerne les dispositions d'application.
7. Le Conseil a été en mesure d'approuver une grande partie des amendements suggérés par le Parlement européen.

- a) Le Conseil a adopté, mot pour mot ou en substance, les amendements n°s 3, 7, 11, 13, 14, 15, 16, 22, 24, 25, 28, 33, 34, 40, 41, 48, 51, 60, 62, 63, 64, 66, 76, 77, 79, 83, 85, 88, 89, 91, 92, 97, 236, 237 et 238, qui avaient été repris par la Commission.
- b) Le Conseil a en outre été en mesure d'adopter, mot pour mot ou en substance, les amendements n°s 9, 10, 17, 20, 26, 45, 46, 55, 65, 68, 80, 81, 86, 96, 101, 222 et 231, qui n'avaient pas été repris par la Commission.
- c) Le Conseil n'a pas été en mesure d'adopter les amendements n°s 35, 43, 58, 61, 69, 71, 75, 78, 87, 90, 107 et 108, qui avaient été repris par la Commission.
- d) Enfin, le Conseil a suivi la proposition modifiée de la Commission en n'adoptant pas les autres amendements proposés par le Parlement européen.

## Notes

- (1) JO n° C 65 du 14.3.1992, p. 4.
- (2) JO n° C 73 du 15.3.1992, p. 4.
- (3) Avis du Parlement européen du 17 novembre 1993 (JO n° C 329 du 6.12.1993, p. 150), position commune du Conseil du 25 juillet 1996 (non encore parue au Journal officiel) et décision du Parlement européen du (non encore parue au Journal officiel).
- (4) JO n° L 313 du 13.11.1990, p. 30. Directive modifiée en dernier lieu par la décision de la Commission 95/162/CE (JO n° L 107 du 12.5.1995, p. 53).
- (5) JO n° L 185 du 17.7.1990, p. 16. Directive modifiée en dernier lieu par la directive 93/87/CEE de la Commission (JO n° L 277 du 10.11.1993, p. 32).
- (6) JO n° L ..., p. .
- (7) JO n° L 109 du 26.4.1983, p. 8. Directive modifiée en dernier lieu par l'acte d'adhésion de 1994.
- (8) JO n° L 222 du 14.8.1978, p. 11. Directive modifiée en dernier lieu par l'acte d'adhésion de 1994.
- (9) JO n° L 193 du 18.7.1983, p. 1. Directive modifiée en dernier lieu par l'acte d'adhésion de 1994.
- (10) JO n° L 197 du 18.7.1987, p. 33.
- (\*) Deux ans après la date d'entrée en vigueur de la présente directive.



# AIDE-MEMOIRE OF THE DISCUSSION

## Note by the Secretariat

The Chairman (Mr. Heimler) noted that the country written contributions show that liberalisation, now underway in many Member countries, can have significant effects including consumer benefits. The contributions addressed several questions:

- Is structural change—splitting firms, vertical dis-integration—necessary for liberalisation?
- Is privatisation an important step for the introduction of competition, or is corporatisation sufficient?
- Have the lower prices, in real terms, in those countries that have introduced competition resulted from competition or from better regulation?
- How should stranded costs be treated?

Five initial presentations by delegates from the United Kingdom, Norway, New Zealand and DG-IV of the European Commission, and by a representative of Enron Corporation, were followed by general discussion.

The Delegate from the United Kingdom said that the restructuring of the UK electricity supply industry (ESI) began in 1988 when the Government issued a White Paper “Privatising Electricity” which proposed two distinct concepts: privatisation and the introduction of competition. The Electricity Act was passed in 1989.

The Government felt that the major benefits from the restructuring of the ESI would flow from the introduction of competition and management freedom, subject to market opportunities and disciplines. The Government felt that a necessary condition for getting the full benefits from competition was the depolitization of the sector, and that privatisation was a necessary condition for such depolitization.

The Government, having privatised the gas sector in 1986 as a monopoly, wished to introduce competition and arrangements to ensure its further development into the ESI at privatisation. A structure more conducive to competition was introduced in generation through splitting the government assets in generation into three parts, Nuclear Electric, National Power and PowerGen, and privatising the latter two to separate owners in spring 1991. (Subsequently, in July 1996, the more modern nuclear generating stations were privatised, leaving the more elderly nuclear stations in the public sector.) Competition to supply large users was introduced. However, the electric supply companies were provided with limited-term monopolies, with a pre-announced phase-out schedule. They were privatised in autumn 1990 with a limited-term anti-take-over government share (which expired in March 1995).

Competition was not introduced in the national grid, as it was considered to be a natural monopoly, but arrangements were made to ensure non-discriminatory access to it.

The regulator, OFFER, is a quango (quasi-autonomous non-government organisation). The regulator is a government official, appointed by the Secretary of State, with tenure for five years, renewable for another five years, who cannot be dismissed arbitrarily. The regulator has two main duties,

the promotion of competition and the protection of consumers' interests in areas of natural monopoly and where competition is not yet fully introduced.

Consumer benefits have been lower prices and higher standards of service. Industrial electricity prices are about 10 percent lower in real terms than they were immediately prior to privatisation in 1990 and real pre-tax domestic prices are about 8 percent lower. (The imposition of value added tax essentially eliminated these gains on an after-tax basis.) National Power and Power Gen have approximately doubled their labour productivity since privatisation. Privatisation has *inter alia* made contracts more transparent: In 1992/1993, National Power and Power Gen reviewed their contracts with the coal industry. They could source coal at lower prices from elsewhere. The price of coal has subsequently fallen and the resulting cost savings have largely been passed through to users as lower electricity prices.

Since the expiration of the anti-take-over government shares in the twelve regional electric companies (RECs), more than half have been taken over, several by foreign companies. Such take-overs are considered under the ordinary competition legislation; Regional Electric Companies have been asked to give assurances that the regulator's powers, such as access to accounting data, are not weakened. There is no discrimination between take-overs by domestic and foreign owners.

The Delegate from Norway said that the sector was reorganised on the basis of the Energy Act of 1990. The consensus in Norway is that the reform, "an experiment on a grand scale," has been generally successful both from a market and an economic efficiency perspective.

The reform was introduced because:

- there was considerable excess capacity (partly due to special hydrological conditions at the time)
- there were significant price differences for electricity across regions
- prices were set not for efficiency reasons but for other, primarily income redistribution, reasons
- there were potential efficiency gains from the restructuring of the industry (e.g., there were about 200 distribution companies; the population of Norway is about 4 million persons)

The basic elements of the Norwegian reforms were:

- the existing producers' market for interruptible power (transactions on which accounted for about 10 percent of total annual supply) was turned into a spot market for physical deliveries, at the same time broadening the scope of the market and refining the procedures for pricing and settlement
  - access to the grid was opened up for common carriage
  - the formerly vertically integrated Statkraft was split into a generating company and an independent grid company
  - a split was introduced between generation, wholesale activities and grid services in vertically integrated power companies (these were splits into separate divisions of the same companies, not a split into distinct legal persons as in Sweden)
  - design of a competition policy for the market parts of the sector
  - design of a regulatory machinery for the natural monopoly parts.
- No consideration was given to privatisation. Rather, competition was introduced while retaining public ownership.

Gains from the reform include: considerable efficiency gains both in terms of a reduction in the general price level of electricity and in the absorption of the then-existing excess capacity through expansion of demand; absence of new investment in the sector since 1990/1991; greater demand side flexibility and greater understanding of and adaptation to consumer needs.

Generation in Norway, almost exclusively hydro, is provided by about 70 independent generators, the largest, Statkraft, accounting for about one-third of total generating capacity. The capacity to exchange power with other Scandinavian countries is about 20 percent of domestic generation capacity. About 75 percent of generation and distribution is under public ownership (national, regional, county and municipal). The entities are predominantly vertically integrated.

A reform of the electricity supply sector must have a comprehensive perspective on the entire sector. It is important not to focus too narrowly on the organisation of markets, but rather to consider also *inter alia* the organisation of the transmission system, corporatisation of publicly-owned companies, security of supply, and the design of a competition policy and the regulatory machinery for the sector.

A market-based system for electricity should provide facilities: *i*) to provide capacity and to handle capacity constraints in the system, *ii*) for the physical delivery of power, and *iii*) for risk hedging. In Norway, the regulation market handles the capacity issues, the spot market handles the delivery of physical power, the weekly market (a financial futures market) handles risk-hedging. The basic structure of all the markets is bidding into a pool. Participants bid every day (or other time unit). Supply and demand curves are derived from the bids, in the spot market by the hour, in the regulation market by the quarter hour, and so on. (Continuous price formation/market-clearing was being experimented with in autumn 1996.) The three organised markets—regulation, spot and financial—account for about 30 percent of the total volume of transactions at a given time; bilateral contracts account for the remaining 70 percent. One issue is whether the organised markets are sufficiently liquid to function efficiently.

The transportation of electric power has three levels in Norway, respectively, the transmission, regional, and local grids. In thinking about the organisation of the grid, the following issues should be addressed:

- the demarcation of natural monopoly activities from competitive activities
- the extent of natural monopoly (Is there one? Is there a hierarchy of natural monopolies?)
- actual costs of the various activities
- optimal pricing of the grid.

A system of point tariffs was introduced in Norway in order to facilitate but not over-steer the operation of the market. The Delegate felt that there were still large efficiency gains to be found in the grid, especially at the distribution level. A new regulatory system to tap those gains is currently (autumn 1996) being designed.

In Norway, corporatisation is more important at the municipal level because the political bodies at that level tend to make, e.g., pricing decisions on grounds other than efficiency. At the state level, it seems that the organisational forms have sufficiently separated the political bodies from the companies so that the companies have sufficient leeway to operate commercially in the market.

Competition policy issues include vertical integration. As noted above, in Norway generation, wholesale activities and grid services were put into separate divisions in vertically integrated power companies. There is a question whether this is sufficient to prevent, e.g., cross-subsidisation from the natural monopoly parts to the parts exposed to competition. Another issue is consumer price information:

For a market-based system to work, consumers must be able to make rational decisions regarding suppliers. Concentration is a third issue which is important in the integrated Swedish-Norwegian market.

The Delegate from New Zealand provided first an overview of the reform in New Zealand, then focused on the just-established wholesale electricity market.

The reforms over the past decade have been aimed at increasing industry performance. Before the reforms, the ESI was entirely in public ownership. The main generating and transmission entity was not a company but a division of a government ministry. It operated inefficiently with poor incentives for efficient pricing or for the expansion of generation capacity. In 1985 there were 61 elected electric power boards (for a population of slightly over 3 million).

A description of the main reforms are in the paper provided. Commercialisation was the largest change: Much of the ESI remains government-owned (either national or local) but is “ring-fenced” as commercial operations. Privatisation was not considered by the New Zealand Government. Structural changes consisted of the separation of transmission from generation and the split of generation capacity (from 96 percent of total capacity in one company into two, each getting 72 percent and 28 percent of the original). While the asset split retained economies of scope, it also ensured competition between the daughter companies.

In New Zealand, generation is predominately by cheap hydro-power at an average cost of about 1.5 US cents per unit. The next-cheapest source of energy is a small amount of geothermal energy. To meet demand beyond that level, coal and oil-fired generators are used. The next tranche of capacity that comes on stream has an average cost of about 4.5 US cents per unit. Hence, the incumbent could have blockaded entry and covered all its costs. The Government felt that it was very important to provide correct investment signals in order to induce entry by generators—there was a risk that demand would soon exceed supply—which is why the wholesale electricity market was established.

There are two markets, a day ahead *ex ante* financial commitment market and a real time physical market. Suppliers and demanders place (quantity, price) bids for half-hour periods in the following day. The operator of the market constructs supply and demand curves based on those bids. The market clearing (price, quantity) establishes the price for that half hour.

Most large industrial users and power companies continue to buy most of their power through long-term bilateral contracts, which provide them with secure supply at stable albeit higher average prices. The Government has insisted that the dominant generating company continue to sell most of its power through long-term contracts in order to prevent it from manipulating the spot market. Power supply companies can reduce their price risk through the use of hedging contracts and through “ripple control,” i.e., contracts with customers for interruptible power supply.

The increasing incidence of wheeling indicates some competitive pressure on the remaining forty retailers. Any retailer can supply to any part of the country.

Since the reform, domestic prices have not changed much. Industrial prices have fallen about 25 percent. There has been significant new investment: Current new generation projects will bring on stream capacity equal to about 10 percent of current capacity. This was desperately needed as demand was dangerously close to supply capacity. A major part of this new investment has been by foreign firms.

In lieu of a presentation by BIAC, a representative of Enron Corporation presented Enron’s view. He focused on developments in the United States, noting that the liberalisation of the electricity sector,

being informed by the earlier liberalisation of the natural gas sector, is occurring at a higher pace. The Energy Policy Act of 1992 mandated transmission access for “wholesale” (sale for resale) transactions. Under the Act, monopoly providers of transmission services must provide “comparable” service to others seeking access to retail and wholesale markets. In its rule-making, the regulator (Federal Energy Regulatory Commission) has been aggressive in defining “comparable.” In Order Nos. 888 and 889, FERC has ruled that transmission and ancillary services must be unbundled from commodity sale, access to transmission must be on an equal basis, and the utility monopoly function must be separated from the merchant function. Enron identified outstanding issues to include the treatment of stranded costs such as nuclear assets and above-market contracts with independent power providers; the pricing and structure of transmission services in view of parallel path and loop flows; and the pricing and responsibility for system reliability.

Developments in the United States include: wholesale open access to transmission; the unbundling of generation, transmission and distribution; the development of new market-based electricity products and services, both physical and financial; the development of competition and the emergence of power marketers. Total megawatt-hours sold is increasing dramatically, from 2 000 in second quarter 1994 to 1 603 000 in second quarter 1995 to 10 160 000 in first quarter 1996. Enron believes that significant savings in the cost of power in the United States can be made purely through the increased use of markets including forward power markets.

Enron sees, as likely outcomes of liberalisation in the United States, the de-integration of existing utility companies, the restructuring of generation assets, continued regulation of transmission and distribution wires but deregulated generation and wholesale and retail supply, and a convergence of gas and electricity markets. It anticipates wholesale supply as involving the purchase and sale of the commodity, logistics and grid management, trading, risk management and finance. Retail supply is anticipated to include customer service and support, retail logistics, energy management, bundled energy/finance products, custom billing and payment options, facilities operations and customer loyalty programs.

As an illustration of how the new markets work, the representative provided an example of a transaction in which unexpectedly high demand for gas in Chicago was met through diverting gas from an electric power generating plant in New York, shutting down that generating plant, and providing electricity—at below contract price—by another generating plant.

Benefits from liberalisation include lower prices. These may come about through pressure to reduce costs and to make technological advances. Power marketers or arbitrageurs may find paths between suppliers and customers that would not be discovered or utilised under the former system. Capital investments may be made on a more efficient basis. Reliability may be enhanced through the provision of better information by system users and more extensive use of interruptible supply contracts. Risk can be shifted away from the more risk-averse users. Differentiated products may allow consumers a choice of types or quality of service.

Enron feels that regulators should:

- require non-discriminatory open access at the beginning of liberalisation
- require unbundled services and accounts
- require merchant activity to ring-fence information from the monopoly operations
- define from the outset the path to the recovery of stranded investments
- prohibit predatory pricing
- ensure comparable access to customer lists

- ensure comparable ease of switching suppliers
- ensure that metering costs are not borne entirely by new entrants.

The Delegate from the Commission of the European Union described current work toward liberalisation. In 1988/89 DG-IV proposed a set of common rules (i.e., a directive, which would be adopted at Community level and implemented in the Member States through national legislation) for the liberalisation of wholesale electricity trade in the Community. The system was based on licensing of generation capacity, so the market would determine what capacity would be required, and there would be rules about security of supply, planning, meeting environmental objectives, etc. Under this proposal, there would have been regulated access to the high-voltage transmission grid, with a right of access, an independent regulator setting the tariff, etc. Large industrial customers and distributors (resellers to consumers and small industrial customers) would have been operating on the demand side. No rules were proposed regarding the retail level.

These proposals met with great opposition, but stimulated discussion in the European Parliament and Member States. In June 1996 the Council adopted a Common Position, which is a compromise reflecting various political, social and industrial policy considerations of the various Member States. Public service obligations are an important part of but not an obstacle to liberalisation. The European Parliament is currently reviewing the Common Position of the Council and, barring a decision to modify it, it is anticipated to be adopted as a Directive in early 1997.

According to the Common Position, access to the grid can be effected in one of three ways. The *negotiated third party access system* requires publication of indicative negotiated access tariffs. This system is less strong than the initially proposed regulated third party access system. However, Member States can opt for a *regulated third party access regime*, provided it grants at least equivalent access as that provided by the other two procedures. The alternative *single buyer system* enables those who may benefit from the market mechanism to arbitrage price differences between “their” supplier and other domestic suppliers or suppliers located in other Member States. Such customers remain entirely a customer of “their” supplier—with the same tariffs, same product offer, etc.—but with the opportunity to receive payments through arbitrage. Hence, this is less an access regime and more a mechanism to permit financial transactions to arbitrage price differences.

Under the Common Position, there are two mechanisms for entering the generation business. Under the *licensing* option, proposed initially by the Commission in 1988/89, the market would determine capacity augmentations (how much, where, what type) because any company fulfilling basic requirements would be granted a license. Under the *invitation to tender* system, the monopoly invites undertakings established in the territory of a Member State to tender to build, operate and sell electric power to the monopolist at the price specified in the tender. Under this system, the monopolist determines capacity augmentation according to its central plan and competition in the generation market occurs only at the initial, tendering stage.

The Common Position provides for a phased, partial opening of the internal market for electric power. While all details have not been worked out, by about 1 January 2000 Member States will have to permit users representing about 23 percent of total usage to be free to buy from an alternative (domestic or foreign) supplier. The Member States must specify those users who have the legal capacity to buy from the market, but at minimum all customers with final consumption larger than 100 gigawatt-hours per annum must be included. (Examples of types of customers who would use more than 100 gigawatt-hours per annum are automakers, glassworks and chemical plants.) As the structure of demand differs from one Member State to another, the marginal user subject to this liberalisation will also differ from one Member State to another. Also, Member States may choose to extend this liberalisation to distribution companies.

Six years after adoption of the Directive, about 33 to 35 percent of total usage would be free to buy from an alternative supplier.

The Common Position explicitly states that the competition rules continue to apply to the electricity sector.

In telecommunications, the deliberate schedule of liberalisation at the Community level was overtaken by events in the market. The representative of the Commission expressed hope that Member States would not limit themselves to the minimal liberalisation specified in the Common Position but rather would set out to perform a broader liberalisation, and that the liberalisation specified in the Common Position would initiate a dynamic process so that, in the long run, market events would overtake it.

### **General Discussion**

The Chairman agreed that Member States may have to go beyond the Common Position in order to introduce effective competition. He noted that stranded costs are not an obstacle to the introduction of competition, that transmission pricing is a key element in setting up effective competition. He further noted that structural change has been an important element of the promotion of competition in the ESI in liberalising countries.

The Delegate from Finland described the 1995 reform of the electricity sector in Finland. The reform involved no change in ownership because the starting point was different: ownership of generation was divided among state companies, energy-intensive industry and municipalities. There were two national grid companies that could, to a limited extent, compete. Distribution (and retail supply) companies were municipally-owned. The objective of the reform was to introduce competition into generation, wholesale and retail supply and foreign trade. Access to the transmission grid is being opened up in phases, with the first tranche of largest customers (constituting about 2 000 customers) granted access in 1996 and the last tranche, of small customers, granted access on 1 January 1997. Of customers in the first tranche, less than 10 percent have actually changed suppliers and they have experienced a price decrease. Small customers have experienced price increases. This raises the question of whether the whole market should be opened to competition at one time to reduce the opportunity for cross-subsidisation.

Many further minor reforms are under consideration. Among these is a search for a way to avoid requiring the smallest customers to buy (very expensive) hourly meters before they can switch suppliers. If they must buy such meters, then the competitive market would not work effectively for small customers.

The two national grids are owned by different companies. A merger between these companies has been proposed. There is also a proposal to broaden ownership of the proposed merged company to include, e.g., the Finnish state and others, as well as the generators.

The competition effects of vertical integration between generation and distribution (and supply) companies is also under study as there has been substantial take-over activity by the main generators of distributors.

The Delegate from Sweden reported on the review of the first half year of the reform of the electricity sector. The national grid had been separated before the decision to deregulate was made. The

deregulation plan had been prepared for several years, but Parliament acted only in October 1995. The deregulation entered into force on 1 January 1996.

The Delegate noted that whereas Norway and Sweden had very similar rules, he would focus on two significant differences. In Norway, an hourly meter is not required for customers to switch suppliers: The Delegate felt that such a requirement would prevent the development of competition. In Norway, there are no special rules for the separation of network and selling activities whereas in Sweden network activities must be separated from the generation and selling of electricity. In Sweden, there are nearly 100 sellers of electricity, but they are merely separate legal persons, without employees, and in practice the network and selling activities are performed jointly. This illustrates the need to set up carefully the accounting separation rules.

The main current issue facing Sweden is setting the “right” price for network activities.

The Delegate from Australia said that there are now competitive electricity markets in the two states with the largest populations, New South Wales and Victoria. Australia is in the process of linking those markets and the adjacent states. This is proving to be difficult due to geographic separation and transmission capacity constraints. Hence, a hedging market both across time and across regions is being developed. (Generators selling to consumers in another region can hedge price differences between those regions.) He noted that Australia provides side-by-side examples of the privatisation and corporatisation models as Victoria is privatising the electricity industry whereas New South Wales has announced that it will incorporate but not privatise. By about February 1997 there will be inter-state trading.

Among the lessons learned in Australia is that it is important to get market structure “right” from the start in order to get the maximum benefit from competition. As a minimum this implies separating the transmission grid from generation and having a sufficient number of competing, independent generators. In a system of ordered dispatch, as operates in the United Kingdom, New Zealand and in the competitive markets in Australia, where the marginal bidders effectively determine the market price, if there are relatively few independent generators and if some of those are baseload, low-cost generators, then it may be the case that only one or two generators actually determine market price. This is not a truly competitive market.

Another important lesson learned is that the transition from a vertically integrated monopoly takes time. There are various elements to be worked out—contractual arrangements, stranded capital issue, restructuring—so Australia is allowing a three to four year transition period. The United Kingdom and other countries have also allowed a substantial transition period.

The Delegate from the Commission of the European Union said that a transition from a monopolised system to a market system is liable to give rise to stranded assets, i.e., contracts or other assets that are no longer economic but which would have been economic had the previous regime continued. (Note that this definition is broader than that usually used in the United States context. *Ed.*) If one sets up a transition to prevent stranded costs from arising, then competition will not develop or will only develop only a very long period as those assets are worked out of the system. It is important to have market mechanisms and set up other mechanisms to handle stranded costs. DG-IV is dealing with the lock-in of existing customers through contracts which would have the effect of postponing liberalisation.

The Commission had proposed management separation of generation, high voltage transmission and local distribution. The Common Position requires accounting separation of those three functions, that is, vertically integrated companies must present a balance sheet and profit and loss statement separately for these three functions. Where there are significant economies of vertical integration (perhaps through

information economies), there may need to be wider integration, such as ownership of the transmission grid by all the generators.

Pricing of access charges is a regulatory function since price regulation is not generally a function of competition authorities, and certainly is not a function of DG-IV, but of course access pricing issues will fall to be considered in individual cases where those prices are not regulated, and Community law will apply to regulatory measures which may hinder trade between Member States in the same way as to other actions of Member States.

The Delegate from the Netherlands said that planning for liberalisation in the electricity sector was advancing rapidly in his country. He expects (in autumn 1996) the Government to soon present a bill to Parliament. When the European Commission initially proposed liberalisation of the electricity market, the Netherlands was among the more conservative countries; now the Netherlands is proposing change like that undertaken in the United Kingdom and the Scandinavian countries.

It will be proposed that the market will be liberalised in three stages, with largest customers free to choose suppliers in the first stage, medium-sized customers five years later and all consumers five years afterwards. The management of the high and low voltage network will be separated both from generation and distribution. Tariffs and conditions of access to the networks will be transparent. A system of point tariffs is being considered. Generation will be free, i.e., not subject to central planning. The introduction of an electricity pool on the Scandinavian model is being considered. There will be a new regulatory authority for *inter alia* regulation of network tariffs and, while they persist, prices for captive customers. There is currently substantial discussion on privatisation but it is expected that liberalisation should be completed before privatisation but, after that, there does not seem to be objection to privatisation.

The Netherlands is less of an electricity island than the Scandinavian countries or the United Kingdom: There are very high capacity connections to Germany and Belgium, so more than 50 percent of demand could be imported. A policy objective is to open the Netherlands market further than required by the Common Position and to liberalise the international market as much as the domestic market, but the Netherlands will do that only after the countries to which it would be open have more or less equal terms of access to their electricity markets.

The Delegate from Japan described the situation in Japan. Japan is divided into ten regions, each with a vertically integrated, private monopoly providing generation, transmission, distribution and supply. The recent reform had three main parts. The first part was the liberalisation of the wholesale electric supply business, i.e., the business of supplying electric power to those ten utility companies with generation capacity less than two million kilowatts. Entry into this business is open to everybody; if the tariff is determined by tender, then it must only be notified to (i.e., not approved by) the regulator, the Ministry of International Trade and Industry. Six utility companies have held tenders. The total amount purchased to date (autumn 1996) is about 2.6 million kilowatts, or about one percent of the existing generating capacity in Japan.

The second main part of the reform was the introduction of the transfer supply system. This was intended to facilitate entry into generation. The utilities must formulate provisions for the transmission of electricity, including tariffs, and inform the regulator. The regulator can, under some circumstances, order changes in the provisions. Further, the regulator can order the utility to transmit electricity. The third main element was the introduction of a form of yardstick competition in the regulator's assessment of the utilities' tariffs and efficiencies. This system was first applied in December 1995.

The Delegate from Norway said that the choice between a single or a sector-specific regulator depended on whether one was thinking about technical or economic regulation and whether direct or incentive-based economic regulation is used. The introduction of financial markets implied the need to involve financial market regulators.

Norway has favoured corporatisation through the creation of ordinary stock companies, with public entities (state, counties or municipalities) as sole shareholders, in order to limit financial exposure. There are instances in Norway where publicly owned companies exposed themselves to excessive financial risk and indeed some have faced bankruptcies, forcing the municipal owners to pay the debtholders, but of course access pricing issues will fail to be considered in individual cases where these prices are not regulated, and Community law will apply to regulatory measures which may hinder trade between Member states in the same way as to other actions of Member states.

The Delegate from Canada asked about “stranded rent or profit,” i.e., the inverse of stranded costs. In Alberta and British Columbia, which are liberalising their electricity sector, prices have increased since the marginal costs of supply from new facilities are higher than average costs from existing facilities.

The Delegate from Italy said that, independent of ownership, there is little doubt that liberalisation required vertical dis-integration and the breaking up of distribution. There would be no competition in the market if there is not a plurality of buyers (distributors for resale or end-users) on the demand side.

Stranded costs arise not only in privately owned, regulated firms but also private, unregulated firms that operate where there is a regulated incumbent. In Italy, free entry into generation by renewable energy and co-generation was permitted in 1991. When generation is fully liberalised, these will become stranded costs. The Chairman warned against letting stranded costs become an obstacle to reform, and said that stranded costs should be strictly defined, as suggested in a paper by the United States.

The Delegate from the United Kingdom said that the British Government’s view is that privatisation is necessary to remove the temptation to intervene even where there is an arms’ length relationship. Structural change in Britain’s ESI involved as much horizontal dis-integration as was felt possible at the time. The absence of absolute vertical dis-integration—permitting large generators to supply directly large end users and local area supply companies to generate some of their own power—at privatisation was deliberate.

With respect to further structural change, in August 1995 the President of the Board of Trade said that, when making a decision about whether to refer take-overs in the electricity sector to the Mergers and Monopolies Commission, he would make his decision primarily on competition grounds but also on the basis of four further factors: the extent to which the powers of the regulator would be affected through *i)* the reduction in the availability of information and *ii)* of comparands for yardstick competition regulation, *iii)* the extent to which adverse effects may follow from vertical integration and *iv)* the extent to which these adverse effects might be remedied or attenuated.

The Delegate from Australia said that a completely separate management structure, with its own incentives structure, is required where there is continuing public sector ownership. In Australia, corporatisation involves the entity having its own, separate decision-making process where the shareholder (the owning government) places requirements on, e.g., rates of return and dividend policies, and where the management is held responsible for meeting those requirements and can be replaced. The Chairman

recalled that the market for corporate management often brings in non-market factors. The Delegate from Australia added that, in Victoria, temporary restrictions were imposed to prevent reintegration either horizontal or vertical.

The Delegate from the United States warned that one should avoid blanket statements about what is and is not a natural monopoly to avoid hindering later extensions of competition. He further noted that, even where there is natural monopoly, there can be competition among partial owners of natural monopoly assets, such as in natural gas pipelines, depending on the structures of ownership and control. He said that an independent system operator is an alternative possible solution to the problem of ownership.

Summarising, the Chairman noted that there was important reform of the electricity sector going on throughout the OECD area. He noted that there were many instances of structural reform, notably of vertical dis-integration. An important lesson of the roundtable was the need for structural separation at least of the transmission grid from generation. He noted that competition issues are being raised throughout public utilities and other regulated sectors as it is increasingly recognised that competition can increase efficiency of the sector and benefit consumers.



# AIDE-MEMOIRE DE LA DISCUSSION

## Note du Secrétariat

Le Président (M. Heimler) a noté que les contributions écrites des pays révèlent que la libéralisation en cours dans bon nombre de pays Membres peut avoir des effets importants, et notamment des avantages pour les consommateurs. Plusieurs questions sont traitées dans ces contributions :

- un changement structurel -- fractionnement des entreprises, désintégration verticale -- est-il nécessaire pour la libéralisation ?
- La privatisation est-elle une étape importante dans l'introduction de la concurrence, ou la transformation des entreprises publiques en sociétés est-elle suffisante ?
- La baisse des prix en termes réels dans les pays qui ont introduit la concurrence résulte-t-elle de la concurrence ou d'une meilleure réglementation ?
- Comment traiter les coûts "échoués" ?

Les cinq premières communications présentées par les délégués du Royaume-Uni, de la Norvège, de la Nouvelle-Zélande, de la DG-4 de la Commission européenne ainsi que par un représentant d'Enron Corporation, sont suivies d'un débat général.

Le délégué du Royaume-Uni a déclaré que la restructuration du secteur de l'électricité au Royaume-Uni a commencé en 1988 avec la publication par le gouvernement d'un livre blanc intitulé "Privatisation de l'électricité", dans lequel étaient proposés deux concepts distincts : la privatisation et l'introduction de la concurrence. L'Electricity Act a été adopté en 1989.

Le Gouvernement a estimé que les principaux avantages de la restructuration du secteur de l'électricité résulteraient de l'introduction de la concurrence et de la liberté de gestion, soumis aux conditions et aux règles du marché. Le Gouvernement a jugé que l'une des conditions nécessaires pour obtenir tous les avantages de la concurrence était de dépolitiser le secteur, et que la privatisation était une condition nécessaire de cette dépolitisation.

Après avoir privatisé en 1986 le secteur du gaz en tant que monopole, le Gouvernement a souhaité introduire la concurrence et adopter des modalités propres à garantir son développement ultérieur jusque dans le secteur de l'électricité lors de la privatisation. Une structure incitant davantage à la concurrence a été mise en place au niveau de la production par le fractionnement des actifs publics en trois parties, Nuclear Electric, National Power et PowerGen, et par la privatisation de ces deux dernières au printemps 1991 pour dissocier la propriété. (Plus tard, en juillet 1996, les stations de production nucléaire plus modernes ont été privatisées, et seules sont demeurées dans le secteur public les stations nucléaires plus anciennes.) La concurrence pour l'approvisionnement des gros utilisateurs a été introduite. Toutefois, les monopoles attribués aux sociétés de fourniture d'électricité ont été limités dans le temps, et un calendrier d'élimination a été annoncé au préalable. La privatisation des sociétés est intervenue en automne 1990, l'Etat conservant pendant une durée limitée une part ne pouvant faire l'objet d'une prise de contrôle. (Cette disposition est venue à expiration en mars 1995)

La concurrence n'a pas été introduite dans le réseau national, considéré comme étant un monopole naturel, mais des dispositions ont été prises pour que l'accès au réseau ne soit pas discriminatoire.

L'instance de régulation, l'OFFER, est une organisation non gouvernementale quasi-autonome. Le régulateur est un fonctionnaire public désigné par le Secrétaire d'Etat, pour un mandat de cinq ans, renouvelable une fois, et qui ne peut être démis de ses fonctions de façon arbitraire. Il a deux fonctions principales, favoriser la concurrence et protéger les intérêts des consommateurs dans les secteurs où existe un monopole naturel et où la concurrence n'est pas encore totalement introduite.

Les avantages pour les consommateurs se sont traduits par des baisses des prix et des normes de service améliorées. Les prix de l'électricité industrielle sont d'environ 10 pour cent inférieurs en termes réels à ce qu'ils étaient immédiatement avant la privatisation en 1990 et les prix nationaux ont diminué d'environ huit pour cent. (L'assujettissement à la taxe à la valeur ajoutée a eu surtout pour effet d'éliminer ces avantages sur une base après impôt). National Power et Power Gen ont à peu près doublé la productivité de leur main-d'oeuvre depuis la privatisation. La privatisation a permis, entre autre, d'accroître la transparence des contrats : en 1992/1993, National Power et Power Gen ont revu leurs contrats avec l'industrie du charbon. Elles pouvaient obtenir du charbon à des prix inférieurs partout ailleurs. Par la suite, le prix du charbon a diminué et les économies de coût qui en ont résulté ont été largement répercutées sur les utilisateurs par une baisse des prix de l'électricité.

Depuis que les parts de l'Etat dans les douze sociétés régionales d'électricité (REC) peuvent faire l'objet d'une prise de contrôle, plus de la moitié ont été reprises par plusieurs sociétés étrangères. Ces prises de contrôle sont examinées au regard de la législation de concurrence de droit commun ; il a été demandé aux sociétés régionales d'électricité de fournir des assurances que les pouvoirs du régulateur, notamment celui d'accéder aux données comptables, ne seront pas diminués. Il n'y a pas de discrimination selon que les prises de contrôle sont effectuées par des propriétaires nationaux ou étrangers.

Le Délégué de la Norvège a déclaré que le secteur a été réorganisé en application de la loi de 1990 sur l'énergie. Dans le pays, tous s'accordent à dire que la réforme, "une expérience de grande envergure", a été généralement couronnée de succès tant du point de vue commercial que du point de vue de l'efficacité économique.

La réforme a été décidée pour les raisons suivantes :

- excédent considérable de la capacité (dû en partie aux conditions hydrologiques particulières à cette époque) ;
- écarts importants entre les prix de l'électricité d'une région à l'autre ;
- les prix étaient fixés non pour des raisons d'efficacité, mais pour d'autres raisons, essentiellement le souci de redistribuer les revenus ;
- la restructuration de la branche d'activité avait suscité des gains d'efficacité potentiels (par exemple, il y avait environ 200 sociétés de distribution ; la population norvégienne compte environ quatre millions de personnes).

Les principaux éléments des réformes norvégiennes sont les suivants :

- le marché actuel des producteurs de courant interruptible (dont les transactions représentaient environ 10 pour cent des fournitures annuelles globales) a été transformé en marché “spot” pour les livraisons physiques, et l’on a élargi en même temps le marché tout en améliorant les procédures de fixation de prix et de règlement ;
- l’accès au réseau a été ouvert aux transporteurs publics ;
- Statkraft, qui était auparavant intégrée verticalement a été fractionnée en une société de production et une société de réseau indépendante ;
- on a dissocié la production, les activités de gros et les services de réseau dans les sociétés d’électricité intégrées verticalement (il s’agissait de fractionnements en divisions séparées des mêmes sociétés, non d’un fractionnement en personnes juridiques distinctes comme en Suède ;
- conception d’une politique de la concurrence pour les parties commerciales du secteur ;
- conception d’un dispositif de réglementation pour les parties du monopole naturel.

Aucune privatisation n’a été envisagée. On a plutôt introduit la concurrence en maintenant le système de propriété publique.

Les résultats positifs de la réforme sont notamment les suivants : gains considérables d’efficience tant du point de vue d’une réduction du niveau général des prix de l’électricité que de l’absorption de la capacité excédentaire existant alors, grâce à une expansion de la demande ; pas d’investissements nouveaux dans le secteur depuis 1990/1991 ; accroissement de la flexibilité de la demande ; les besoins des consommateurs ont été mieux compris et l’on s’y est davantage adapté.

La production en Norvège, qui est presque exclusivement hydraulique, est assurée par environ 70 producteurs indépendants dont le principal, Statkraft, représente le tiers de la capacité totale de production. La capacité d’échange de courant avec d’autres pays scandinaves est d’environ 20 pour cent de la capacité de production nationale. Environ 75 pour cent de la production et de la distribution relèvent des pouvoirs publics (autorités nationales, régionales, comtés et municipalités). Les entités sont surtout intégrées verticalement.

Si l’on veut réformer le secteur de l’électricité, il faut le considérer dans son ensemble. Il importe de ne pas trop centrer son attention sur l’organisation des marchés, mais plutôt d’examiner, entre autres, l’organisation du système de transport, la transformation en sociétés des entreprises publiques, la sécurité de l’approvisionnement ainsi que la conception d’une politique de concurrence et d’un dispositif de réglementation propre au secteur.

Tout système d’électricité fondé sur le marché devrait fournir les installations permettant *i*) de fournir la capacité et de venir à bout des contraintes de la capacité du système, *ii*) d’assurer physiquement la fourniture de courant et *iii*) de couvrir les risques. En Norvège, le marché de la régulation traite les problèmes de capacité, le marché “spot” traite la fourniture de courant, le marché hebdomadaire (marché à terme) offre des instruments de couverture. La structure de base de tous les marchés consiste à regrouper les offres de prix dans un pool. Les participants formulent une offre de prix chaque jour (ou une autre unité de temps). Les courbes de l’offre et de la demande sont établies à partir des offres, toutes les heures, sur le

marché “spot”, tous les quarts d’heure sur le marché de la régulation, etc. (A l’automne de 1996, on a expérimenté une formation de prix compensation/continue sur le marché). Les trois marchés organisés -- marché de la régulation, marché “spot” et marché financier -- représentent environ 30 pour cent du volume total des transactions à un moment donné ; les contrats bilatéraux représentent les 70 pour cent restants. Une question que l’on se pose est de savoir si les marchés organisés sont suffisamment souples pour fonctionner efficacement.

Le transport de l’électricité a trois niveaux en Norvège, à savoir le transport, les réseaux régional et local. Pour organiser le réseau, il convient d’examiner les questions suivantes :

- démarcation des activités de monopole naturel des activités concurrentielles
- ampleur du monopole naturel (est-il unique ? Existe-t-il une hiérarchie entre les monopoles naturels ?)
- coûts réels des diverses activités
- fixation du prix optimal du réseau.

Un système de tarifs à points a été mis en place en Norvège afin de faciliter, mais non de contrôler, le fonctionnement du marché. Le délégué de la Norvège estime que le réseau permet de réaliser des gains d’efficacité encore importants, surtout au niveau de la distribution. Un nouveau système de réglementation qui doit permettre de d’exploiter ces gains est en cours d’élaboration (automne 1996).

En Norvège, la transformation en sociétés des entreprises publiques est plus importante au niveau des municipalités car à ce niveau les instances politiques ont tendance à prendre des décisions en matière de prix pour des motifs autres que l’efficacité. Au niveau de l’Etat, il semble que les formes d’organisation ont séparé suffisamment les organes politiques des entreprises pour que celles-ci disposent d’une marge de manoeuvre suffisante pour opérer commercialement sur le marché.

Parmi les problèmes de la politique de la concurrence figure l’intégration verticale. Comme on l’a noté plus haut, dans le secteur de la production en Norvège, les activités de gros et les services de réseau ont été attribués à des départements distincts des sociétés d’électricité intégrées verticalement. La question qui se pose est de savoir si cela suffit pour empêcher, entre autres, la péréquation des prix entre les parties du monopole naturel et les parties exposées à la concurrence. Autre question, celle de l’information des consommateurs sur les prix : pour qu’un système fondé sur le marché fonctionne, les consommateurs doivent pouvoir choisir de façon rationnelle entre différents fournisseurs. La concentration est un troisième problème, problème important sur le marché intégré Norvège-Suède.

Le délégué de la Nouvelle-Zélande a présenté d’abord dans son ensemble la réforme dans son pays, puis il a mis l’accent sur le marché de l’électricité de gros qui vient d’être mis en place.

Au cours de la dernière décennie, les réformes ont visé à accroître la performance de la branche d’activité. Avant les réformes, le secteur de l’électricité était à 100 pour cent public. La principale entité chargée de la production et du transport n’était pas une société, mais le département d’un ministère. Elle opérait de façon inefficace car elle n’était guère incitée à pratiquer des prix efficaces ou à accroître la capacité de production. En 1985 on comptait 61 offices de l’électricité élus (pour une population d’un peu plus de trois millions).

Les principales réformes sont décrites dans le document fourni par la délégation. La principale modification a été apportée au stade de la commercialisation. Pour sa plus grande part, le secteur de l'électricité reste la propriété de l'Etat (au niveau soit national, soit local), mais le "système de la barrière" ("ring-fence") est applicable pour les opérations commerciales. La privatisation n'a pas été envisagée par le Gouvernement néo-zélandais. Les modifications structurelles ont consisté à séparer le transport de la production et à fractionner la capacité de production (la capacité totale de 96 pour cent attribuée à une seule société a été fractionnée entre deux sociétés, chacune obtenant 72 pour cent et 28 pour cent de la capacité d'origine). Si le fractionnement des actifs a permis de maintenir les économies de gamme, il a également garanti la concurrence entre les sociétés résultant de la scission.

La Nouvelle-Zélande produit surtout de l'électricité hydraulique bon marché à un coût au moyen d'environ 1.5 cent des Etats-Unis par unité. Vient ensuite, parmi les sources d'énergie les moins chères, une petite quantité d'énergie géothermique. Pour satisfaire la demande au-delà de ce niveau, on utilise des centrales au charbon et au pétrole. La tranche de capacité suivante a un coût moyen d'environ 4.5 cents des Etats-Unis par unité. La société en place sur le marché aurait donc pu bloquer l'entrée et couvrir tous ses coûts. Le Gouvernement a jugé qu'il était très important de fournir des incitations suffisantes à l'investissement pour que les producteurs accèdent plus volontiers au marché -- le risque était que la demande n'excède bientôt l'offre -- ce qui explique pourquoi a été mis en place le marché de gros de l'électricité.

Il existe deux marchés, un marché d'engagement financier un jour à l'avance et un marché physique en temps réel. Les fournisseurs et les demandeurs font des offres (quantité, prix) pour des périodes d'une demi-heure du jour suivant. L'exploitant du marché construit à partir de ces offres les courbes de l'offre et de la demande. L'équilibre du marché (prix, quantité) détermine le prix pour cette demi-heure.

La plupart des gros usagers industriels et les centrales continuent à acheter la majeure partie de leur courant dans le cadre de contrats bilatéraux à long terme qui leur fournissent un approvisionnement sûr, à des prix stables quoique légèrement supérieurs à la moyenne. Le Gouvernement a tenu à ce que la principale société de production continue à vendre la majeure partie de son électricité grâce à des contrats à long terme afin de l'empêcher de manipuler le marché "spot". Les compagnies d'électricité peuvent réduire les risques au niveau des prix en utilisant des contrats de couverture et grâce à un contrôle par ricochet ("ripple control"), c'est-à-dire des contrats conclus avec des clients, qui prévoient que l'approvisionnement en électricité peut être interrompu.

L'incidence croissante des opérations de transit par des sociétés tierces montre qu'une certaine concurrence continue à s'exercer sur les quarante détaillants restants. N'importe quel détaillant peut approvisionner n'importe quelle partie du pays.

Depuis la réforme, les prix intérieurs n'ont guère changé. Les prix industriels ont chuté d'environ 25 pour cent. Les nouveaux investissements ont été importants. Les nouveaux projets actuels de production vont mettre sur le marché une capacité égale à environ 10 pour cent de la capacité actuelle. Ces projets étaient extrêmement urgents car la demande se rapprochait dangereusement de la capacité de l'offre. Ces nouveaux investissements ont été dans la majeure partie réalisés par des entreprises étrangères.

La communication du BIAC est remplacée par une communication du représentant d'Enron Corporation qui a exposé le point de vue de sa société. L'intervenant a mis l'accent sur l'évolution de la situation aux Etats-Unis, observant que la libéralisation du secteur de l'électricité, forte des enseignements acquis à l'issue de la libéralisation antérieure du secteur du gaz naturel, se déroule à un rythme plus rapide. L'Energy Policy Act de 1992 (loi de 1992 sur la politique énergétique) a rendu obligatoire l'accès au

transport pour les opérations “de gros”(vente en vue d’une revente). Aux termes de la loi, les prestataires monopolistiques des services de transport doivent fournir des services “comparables” aux autres prestataires qui cherchent à accéder aux marchés de gros et de détail. Lorsqu’elle a légiféré, l’instance de réglementation (la Federal Energy Regulatory Commission) a défini le terme “comparables” de façon très agressive. Dans ses ordonnances Nos. 888 et 889, la FERC a stipulé que les services de transport et services connexes doivent être dissociés de la vente du produit, l’accès au transport ne doit pas être discriminatoire et la fonction de monopole de l’entreprise doit être séparée de la fonction commerciale. Enron identifie les questions en suspens au nombre desquelles figurent le régime des coûts “échoués” tels que les actifs nucléaires et les contrats conclus avec des prestataires d’électricité indépendants à un prix supérieur à celui du marché ; la tarification et la structure des services de transport compte tenu de la configuration du réseau ; la fixation des prix et la responsabilité quant à la fiabilité du système.

Parmi les faits nouveaux intervenus aux Etats-Unis, on peut citer l’accès ouvert au marché des transports ; la dissociation de la production, du transport et de la distribution ; l’élaboration de nouveaux produits et services, tant physiques que financiers ; le développement de la concurrence et l’émergence d’organismes de commercialisation de l’électricité. Le nombre total de mégawatt-heures vendus a augmenté de façon spectaculaire, passant de 2 000 MWh pendant le deuxième trimestre 1994 à 1 603 000 MWh au deuxième trimestre de 1995 et 10 160 000 MWh au premier trimestre 1996. Selon Enron, des économies importantes du coût de l’électricité aux Etats-Unis peuvent être réalisées uniquement en recourant davantage aux marchés, y compris aux marchés à terme.

Selon Enron, les résultats probables de la libéralisation aux Etats-Unis seront la fin de l’intégration des entreprises publiques existantes, la restructuration des actifs de production, le maintien de la réglementation, la transmission et la distribution mais aussi une déréglementation de la production ainsi que de la vente de gros et de détail, ainsi qu’une convergence des marchés du gaz et de l’électricité. Selon ses estimations, l’offre de gros va comprendre la vente et l’achat du produit, la logistique et la gestion du réseau, les transactions, la gestion du risque et le financement. La vente de détail devrait couvrir l’aide et le service au consommateur, la logistique de détail, la gestion de l’énergie, les produits groupés énergie/finance, la facturation à la clientèle et les possibilités de paiement, les opérations visant les installations et les programmes de fidélisation de la clientèle.

Pour illustrer la façon dont les nouveaux marchés vont fonctionner, le représentant d’Enron a fourni un exemple d’opération dans laquelle une demande inopinément élevée de gaz à Chicago, a été satisfaite en détournant le gaz d’une centrale de production électrique à New York, en fermant cette usine de production et en fournissant l’électricité par une autre centrale à un prix inférieur au prix contractuel.

La libéralisation a entre autres avantages celui de faire baisser les prix. Cette baisse des prix peut résulter des pressions exercées pour réduire les coûts et réaliser des progrès technologiques. Les sociétés commercialisant l’électricité ou arbitragistes peuvent trouver entre fournisseurs et clients des passerelles qui ne seraient décelées ou utilisées dans l’ancien système. Les investissements peuvent être réalisés sur une base plus efficiente. La fiabilité peut être améliorée si les usagers du système fournissent de meilleures informations et si l’on recourt davantage aux contrats de fourniture interruptible. Les risques peuvent être détournés des usagers les plus exposés. La différenciation des produits permet aux consommateurs de choisir le type ou la qualité de service.

Enron estime que les instances de réglementation devraient :

- exiger au début de la libéralisation un libre accès non discriminatoire ;
- exiger une désagrégation des services et des comptes ;

- exiger que dans le cadre d'une activité commerciale les informations soient protégées contre les opérations de monopole ;
- définir dès le début les moyens de récupérer les investissements échoués ;
- interdire les prix d'éviction ;
- s'assurer que l'accès aux listes de clients soit le même pour tous ;
- s'assurer que l'on puisse relativement facilement changer de fournisseurs ;
- s'assurer que les nouveaux entrants n'aient pas à supporter entièrement les coûts de mise en place des compteurs.

Le délégué de la Commission de l'Union européenne a exposé les travaux de libéralisation en cours. En 1988/89, la DG-IV a proposé un ensemble de règles communes (notamment une directive qui serait adoptée au niveau communautaire et mise en oeuvre dans les Etats membres par le biais des législations nationales), règles qui permettraient de libéraliser la vente en gros d'électricité dans la Communauté. Le système consistait à octroyer des licences s'appliquant à capacité de production de sorte que le marché aurait déterminé la capacité nécessaire tandis que la sécurité des approvisionnements, la planification, la protection de l'environnement etc. auraient fait l'objet de réglementations. Aux termes de cette proposition, l'accès au réseau de transport haute tension aurait été réglementé, avec droit d'accès, tandis la tarification aurait été établie par une instance de réglementation indépendante, etc. Du côté de la demande se seraient situés les clients et distributeurs industriels (revendeurs aux consommateurs et aux petits clients industriels). Aucune règle n'était proposée en ce qui concerne le marché de détail.

Ces propositions se sont heurtées à une très vive opposition mais ont stimulé les débats au Parlement européen et dans les Etats membres. En juin 1996, le Conseil a adopté une Position commune, compromis tenant compte des diverses considérations d'ordre politique, social et industriel des divers Etats membres. Les obligations de service public constituent un élément important de la libéralisation, mais n'y font pas obstacle. Actuellement le Parlement européen réexamine la Position commune du Conseil et, sauf décision de la modifier, elle devrait être adoptée sous la forme d'une directive au début de 1997.

Aux termes de la Position commune, l'accès au réseau peut se faire de trois façons. Le système d'accès négocié pour les tiers exige la publication de tarifs indicatifs négociés. Ce système est moins solide que le système d'accès réglementé pour les tiers, proposé initialement. Toutefois, les Etats membres peuvent opter pour un régime d'accès réglementé pour les tiers, à condition d'accorder au moins un accès équivalent à celui assuré par les deux autres procédures. La variante système d'acheteur unique permet à ceux qui peuvent bénéficier des mécanismes du marché d'arbitrer les écarts de prix entre "leur" fournisseur et d'autres fournisseurs nationaux ou fournisseurs situés dans d'autres Etats membres. Ce type de client reste entièrement la clientèle de "leur" fournisseur, avec les mêmes tarifs, la même offre de produits, etc. -- mais ils ont la possibilité de recevoir des paiements par le biais d'un arbitrage. De ce fait, il s'agit moins d'un régime d'accès et davantage d'un dispositif autorisant les transactions financières pour arbitrer les écarts de prix.

La Position commune prévoit deux dispositifs pour accéder à l'activité de production. Dans la solution préconisant l'octroi de licence, proposée initialement par la Commission en 1988/89, le marché déterminerait les augmentations de capacité (volume, lieu, type) car n'importe quelle société remplissant les conditions de base aurait pu obtenir une licence. Dans le système d'appels à soumission, le monopole

invite les entreprises établies sur le territoire d'un Etat membre à soumissionner pour fabriquer, gérer et vendre le courant électrique au monopoleur au prix fixé dans l'offre. Dans ce système, le monopoleur détermine l'augmentation de capacité en fonction de son programme central et il n'y a concurrence sur le marché de la production qu'au stade initial des offres.

La Position commune prévoit une ouverture partielle et progressive du marché intérieur de l'électricité. Certes, tous les détails n'ont pas été élaborés, mais vers le 1er janvier de l'an 2000, les Etats membres devront autoriser les utilisateurs représentant environ 23 pour cent de l'utilisation totale à s'approvisionner librement auprès d'un autre fournisseur (national ou étranger). Les Etats membres devront préciser lesquels des utilisateurs ayant la capacité juridique d'acheter sur le marché, mais au minimum tous les clients dont la consommation finale est supérieure à 100 gigawatts-heure par an, devront y figurer. (Parmi ces clients qui utiliseraient plus que 100 gigawatts-heure par an, figurent les constructeurs d'automobiles, les verreries et les usines de produits chimiques). Comme la structure de la demande diffère d'un Etat membre à l'autre, l'utilisateur marginal soumis à cette libéralisation sera également différent d'un Etat membre à l'autre. Les Etats membres peuvent également choisir d'élargir cette libéralisation aux sociétés de distribution. Six ans après l'adoption de la Directive, 33 à 35 pour cent environ des usagers seront libres de s'approvisionner auprès d'un nouveau fournisseur.

La Position commune stipule expressément que les règles de concurrence continuent de s'appliquer au secteur de l'électricité.

Dans les télécommunications, le calendrier de libéralisation qui était prévu au niveau communautaire a été rattrapé par l'évolution du marché. Le représentant de la Commission a exprimé l'espoir que les Etats membres ne se limiteraient pas à la libéralisation minimale indiquée dans la Position commune, mais qu'ils s'engageraient de préférence à procéder à une libéralisation plus large, et que la libéralisation dont il était fait état dans la Position commune enclencherait un processus dynamique de sorte qu'à long terme, l'évolution du marché la rattraperait.

## **Débat général**

Le Président a convenu que les Etats membres devront peut-être aller au-delà de la Position commune pour introduire une concurrence effective. Il observe que les coûts "échoués" ne constituent pas un obstacle à l'introduction de la concurrence, que la fixation des prix de transport est un élément fondamental si l'on veut mettre en place une concurrence effective. Il note par ailleurs que l'évolution structurelle a contribué pour beaucoup à favoriser la concurrence dans le secteur de l'électricité des pays procédant à la libéralisation.

Le délégué de la Finlande a décrit la réforme du secteur de l'électricité intervenue dans son pays en 1995. La réforme n'a pas modifié la propriété car le point de départ était différent : la propriété de la production était répartie entre les compagnies d'Etat, les industries à forte intensité d'énergie et les municipalités. Deux compagnies nationales de réseau pouvaient se faire concurrence jusqu'à un certain point. La distribution (et la vente au détail) relevaient des municipalités. L'objectif de la réforme a consisté à introduire la concurrence dans la production, la vente en gros et au détail et le commerce extérieur. L'accès au réseau de transmission s'ouvre progressivement, la première tranche des usagers les plus importants (environ 2 000) y ont accédé en 1996 et la dernière tranche, celle des petits clients, y a accédé le 1er janvier 1997. Moins de 10 pour cent de la clientèle de la première tranche ont changé de fournisseurs et tous ont bénéficié d'une baisse des prix. Les petits clients ont enregistré des hausses de prix. Cela pose la question de savoir si la totalité du marché doit être ouverte en même temps à la concurrence pour réduire les possibilités d'une péréquation des tarifs.

Bon nombre d'autres réformes plus limitées sont à l'étude. On citera celles visant à dispenser les plus petits clients de l'obligation d'acheter des compteurs horaires (très onéreux) avant de pouvoir changer de fournisseurs. S'il devait rester soumis à cette obligation, le marché ne serait pas alors réellement compétitif.

Les deux réseaux nationaux appartiennent à des sociétés différentes. Une fusion entre ces sociétés a été proposée. Il est également proposé d'élargir à l'Etat finlandais et d'autres, ainsi qu'aux producteurs la propriété de la société qui doit résulter de la fusion.

Les effets sur la concurrence de l'intégration verticale entre sociétés de production et de distribution (et de vente) sont également à l'étude étant donné que les prises de contrôle des distributeurs par les principaux producteurs ont été nombreuses.

Le délégué de la Suède a présenté une analyse du premier semestre qui a suivi la réforme du secteur de l'électricité. Le réseau national avait été séparé avant qu'ait été prise la décision de déréglementation. Le plan de déréglementation est prêt depuis plusieurs années, mais le Parlement ne l'a adopté qu'en octobre 1995. La déréglementation est entrée en vigueur le 1er janvier 1996.

Le délégué a noté que la Norvège et la Suède ont des règles très analogues mais il insiste sur deux différences importantes. En Norvège, les clients peuvent changer de fournisseurs sans être tenus d'avoir un compteur horaire. Selon le délégué, cette obligation empêcherait le développement de la concurrence. Il n'existe pas en Norvège de règles spéciales prévoyant la séparation des activités de réseau et de vente alors qu'en Suède les activités de réseau doivent être séparées de la production et de la vente de l'électricité. En Suède, on dénombre une centaine de vendeurs d'électricité, mais il s'agit surtout de personnes juridiques distinctes, sans personnel, et dans la pratique les activités de réseau et de vente sont effectuées conjointement. Cette observation illustre la nécessité d'établir soigneusement les règles de séparation des comptes.

Le problème auquel est actuellement confrontée la Suède est celui de la fixation du "juste" prix pour les activités de réseau.

Le délégué de l'Australie a déclaré qu'il existe actuellement des marchés d'électricité compétitifs dans les deux Etats les plus peuplés, à savoir la Nouvelle-Galles du Sud et l'Etat de Victoria. L'Australie procède actuellement à la liaison de ces marchés avec ceux des Etats adjacents. C'est là une tâche difficile en raison de la séparation géographique et des contraintes liées à la capacité de transport. Aussi est-il procédé actuellement à la mise en place d'un marché offrant des instruments de couverture tant dans le temps que d'une région à l'autre. (Les producteurs qui vendent à des consommateurs d'une autre région peuvent se couvrir pour les écarts de prix entre ces régions.) Le délégué note que l'Australie fournit côte à côte des exemples de privatisation et de transformation des entreprises publiques en sociétés puisque l'Etat de Victoria est en train de privatiser l'industrie de l'électricité alors que la Nouvelle-Galles du Sud a annoncé qu'elle allait procéder à cette transformation, mais qu'elle ne privatiserait pas. D'ici environ février 1997, des échanges auront lieu entre les Etats.

L'un des enseignements à tirer de l'exemple australien, c'est qu'il importe de faire en sorte que la structure du marché soit "la bonne" dès le début si l'on veut profiter au maximum de la concurrence. Au minimum, ceci implique que le réseau de transmission soit séparé de la production et que les producteurs indépendants en concurrence soient en nombre suffisant. Dans un système de dispatching organisé, comme celui qui fonctionne au Royaume-Uni, en Nouvelle-Zélande et sur les marchés compétitifs d'Australie, où les soumissionnaires marginaux déterminent en fait le prix du marché, si les producteurs indépendants sont relativement peu nombreux, si certains sont des producteurs d'électricité à faible coût et pour la charge de

base, il peut alors arriver qu'un ou deux seulement des producteurs déterminent en fait le prix du marché. Il ne s'agit pas d'un marché véritablement compétitif.

Autre enseignement important : la transition à partir d'un monopole intégré verticalement demande du temps. Divers éléments doivent être mis en place -- arrangements contractuels, problèmes des capitaux "échoués", restructuration -- de sorte que l'Australie prévoit une période de transition de 3 à 4 ans. Le Royaume-Uni et d'autres pays ont eux aussi prévu une période de transition importante.

Le délégué de la Commission de l'Union européenne a déclaré que le passage d'un système monopolisé à un système de marché peut donner lieu à des actifs "échoués", c'est-à-dire des contrats ou autres actifs qui ne sont plus économiques mais qui l'auraient été si le régime précédent avait été maintenu. (Il faut noter que cette définition est plus large que celle qui est généralement utilisée pour les Etats-Unis. Note de la rédaction.) Si l'on fixe une période de transition pour empêcher l'apparition de coûts "échoués", la concurrence alors ne peut pas se développer ou elle ne se développera qu'au bout d'une période très longue en attendant que ces actifs soient sortis du système. Il est important de prévoir des mécanismes commerciaux et de mettre en place d'autres dispositifs pour régler la question des coûts échoués. La DG-IV examine le problème des clients actuels qui sont liés par des contrats qui auraient pour effet de différer la libéralisation.

La Commission a proposé de séparer la gestion de la production, du transport haute tension et de la distribution locale. La Position commune exige que la comptabilité de ces trois fonctions soit dissociée, à savoir les sociétés intégrées verticalement doivent présenter un bilan et une déclaration des pertes et profits séparément pour ces trois fonctions. Dans les cas où l'intégration verticale dégage des économies importantes (peut-être par le biais des économies relatives à l'information), il est peut-être nécessaire d'élargir l'intégration, par exemple pour la propriété du réseau de transmission par tous les producteurs.

La fixation des frais d'accès est une fonction de réglementation puisque la réglementation des prix n'est pas généralement une fonction des autorités de la concurrence, et certainement pas une fonction de la DG-IV.

Le délégué des Pays-Bas a déclaré que la planification de la libéralisation dans le secteur de l'électricité progresse rapidement dans son pays. A l'automne de 1996, le Gouvernement devait présenter un projet de loi au Parlement. Lorsque la Commission européenne a proposé pour la première fois de libéraliser le marché de l'électricité, les Pays-Bas comptaient parmi les pays les plus conservateurs. Actuellement, ils proposent des modifications du genre de celles entreprises au Royaume-Uni et dans les pays scandinaves.

Il va être proposé de libéraliser le marché en trois étapes, les plus gros clients étant libres de choisir leurs fournisseurs au premier stade, les clients de taille moyenne cinq ans plus tard et l'ensemble des consommateurs cinq ans après. La gestion du réseau haute et basse tension sera séparée à la fois de la production et de la distribution. Les tarifs et les conditions d'accès au réseau seront transparents. Un système de tarifs à points pourrait être envisagé. La production sera libre, c'est-à-dire qu'il n'y aura pas de planification centrale. La mise en place d'un pool de l'électricité sur le modèle scandinave est envisagée. Une nouvelle instance de réglementation sera chargée entre autres de réguler les tarifs du réseau et, pendant toute la période où ceux-ci vont subsister, les prix à payer par les clients captifs. La privatisation fait actuellement l'objet d'un débat approfondi, mais la libéralisation devrait être achevée avant elle ; après quoi, il ne devrait plus y avoir d'opposition à la privatisation.

Les Pays-Bas sont, en terme d'électricité, moins dépendants que ne le sont les pays scandinaves ou le Royaume-Uni : des connections de très grande capacité les relient à l'Allemagne et à la Belgique de

sorte que plus de 50 pour cent de la demande pourraient être satisfaites par les importations. Les pouvoirs publics ont entre autres objectifs d'ouvrir le marché des Pays-Bas davantage que le demande la Position commune et de libéraliser le marché international autant que le marché national, mais ils ne pourront le faire qu'une fois que les pays auxquels il sera ouvert appliqueront des conditions d'accès plus ou moins égales à leur marché de l'électricité.

Le délégué du Japon a exposé la situation dans son pays. Le Japon est divisé en dix régions ; dans chacune d'elles fonctionne un monopole privé, intégré verticalement, qui assure la production, le transport, la distribution et la fourniture de l'électricité. La réforme récente comportait trois grandes parties. Première partie : libéralisation des marchés de gros de la vente d'électricité, c'est-à-dire la fourniture de courant aux dix entreprises publiques dotées d'une capacité de production de moins de deux millions de kilowatts. L'accès à ce marché est ouvert à tous ; si le tarif est fixé par appel d'offres, il suffit alors qu'il soit notifié à (c'est-à-dire non approuvé par) l'instance de réglementation, à savoir le Ministère de l'industrie et du commerce international. Six entreprises publiques ont fait des offres. Le volume total des achats à ce jour (automne 1996) est d'environ 2.6 millions de kilowatts, soit environ un pour cent de la capacité de production actuelle du Japon.

Deuxième grande partie de la réforme : l'introduction du système de fourniture de transfert. Ce système devait faciliter l'accès à la production. Les entreprises doivent formuler les dispositions applicables au transport de l'électricité, y compris la tarification, et en informer l'instance de réglementation. Celle-ci peut dans certaines circonstances ordonner que les dispositions soient modifiées. Puis elle peut ordonner à l'entreprise de transporter l'électricité. Troisième élément de la réforme : l'introduction d'une sorte de concurrence type dans l'évaluation, par l'instance de réglementation, des tarifs et des efficacités des entreprises publiques. Ce système a été appliqué pour la première fois en décembre 1995.

Le délégué de la Norvège a déclaré que le choix entre une instance de réglementation unique ou propre au secteur dépend de la question de savoir si l'on recherche une réglementation technique ou économique et si l'on applique une réglementation économique directe ou fondée sur des incitations. La mise en place de marchés financiers implique la nécessité de faire intervenir les instances de réglementation.

En Norvège, la transformation en sociétés des entreprises publiques se fait surtout par le biais de sociétés par actions ordinaires, les entreprises publiques (l'Etat, les comtés ou les municipalités) étant les seules actionnaires, l'objectif étant de limiter les risques financiers. Dans certains cas, les entreprises à capitaux publics se sont exposées à des risques financiers excessifs et de fait certaines ont été acculées à la faillite, ce qui oblige les propriétaires (à savoir les municipalités) à payer les créanciers. Bien sûr, les questions de tarification ne seront pas prises en compte dans les cas individuels où ces prix ne sont pas réglementés et la législation communautaire s'appliquera aux mesures réglementaires susceptibles d'entraver les échanges entre pays-membres, de la même manière qu'elle s'applique à toutes autres actions des pays-membres.

Le délégué du Canada a demandé des précisions sur les "bénéfices ou rentes échoués", c'est-à-dire l'inverse des coûts échoués. Dans l'Alberta et en Colombie britannique, où le secteur de l'électricité est en cours de libéralisation, les prix ont augmenté car les coûts marginaux de l'offre provenant des nouvelles installations sont plus élevés que les coûts moyens des installations existantes.

Le délégué de l'Italie a déclaré que si l'on exclut la question de la propriété, il n'est pas douteux que la libéralisation exige une désintégration verticale et le fractionnement de la distribution. Il n'y aurait

pas de concurrence sur le marché s'il n'y avait pas pluralité d'acheteurs du côté de la demande (distributeurs pour la revente ou utilisateurs finals).

Des coûts échoués existent non seulement dans les entreprises privées réglementées mais aussi dans les entreprises privées non réglementées qui opèrent là où existe une entreprise réglementée déjà sur le marché. En Italie, le libre accès à la production par énergie renouvelable et à la coproduction a été autorisé en 1991. Lorsque la production sera totalement libéralisée, apparaîtront alors des coûts échoués. Le Président a mis en garde contre le fait de laisser les coûts échoués devenir un obstacle à la réforme, et déclare que ceux-ci devraient être strictement définis, comme il est proposé dans un document des Etats-Unis.

Le délégué du Royaume-Uni a déclaré que, du point de vue de son Gouvernement, la privatisation est nécessaire pour supprimer la tentation d'intervenir même lorsqu'il s'agit de relations d'égalité. Les modifications structurelles du secteur de l'électricité du Royaume-Uni ont impliqué une désintégration horizontale la plus large possible à l'époque. L'absence de désintégration verticale absolue - - permettant aux gros producteurs d'approvisionner directement d'importants utilisateurs finaux et aux sociétés d'approvisionnement local de produire une partie de leur propre courant -- était voulue lors de la privatisation.

En ce qui concerne de nouvelles modifications structurelles, le Président du Board of Trade a déclaré en août 1995 que, lorsqu'il lui faudra se prononcer sur les renvois des prises de contrôle dans le secteur de l'électricité à la Commission des monopoles et des fusions, il se prononcerait avant tout du point de vue de la concurrence, mais aussi en se référant à d'autres facteurs : *i*) dans quelle mesure les pouvoirs de l'instance des réglementations seraient affectés par la diminution des informations disponibles et des éléments de comparaison permettant d'évaluer une réglementation de la concurrence, *ii*) dans quelle mesure l'intégration verticale peut donner lieu à des effets contraires et *iii*) dans quelle mesure ces effets contraires pourraient être corrigés ou atténués.

Le délégué de l'Australie a déclaré que lorsque le secteur public reste propriétaire, il est nécessaire de séparer complètement la structure de gestion, et que celle-ci ait ses propres stimulants. En Australie, la transformation des entreprises publiques en sociétés implique que l'entité ait un processus de prise de décision séparé et qui lui soit propre, dans les cas où l'actionnaire (l'organisme public propriétaire) institue des obligations par exemple des taux de rendement et des politiques en matière de dividende, ainsi que dans les cas où les gestionnaires sont tenus pour responsables lorsqu'il s'agit de satisfaire à ces obligations et qu'ils peuvent être remplacés. Le Président a rappelé que le marché de gestion par les sociétés introduit souvent des facteurs autres que commerciaux. Le délégué de l'Australie a ajouté que dans l'Etat de Victoria, des restrictions temporaires ont été imposées pour empêcher une nouvelle intégration soit horizontale soit verticale.

Le délégué des Etats-Unis a mis en garde contre les déclarations générales sur ce qu'est ou n'est pas un monopole naturel si l'on veut éviter que les intensifications de la concurrence soient entravées par la suite. Il note par ailleurs que, même lorsqu'il existe un monopole naturel, la concurrence peut exister entre propriétaires partiels des actifs du monopole naturel, notamment dans le cas des gazoducs transporteurs de gaz naturel, en fonction des structures de la propriété et du contrôle. Il a déclaré que la mise en place d'un opérateur de système indépendant constitue une autre possibilité pour résoudre le problème de la propriété.

En résumé, le Président a noté que dans toute la zone de l'OCDE, on assiste à une réforme importante du secteur de l'électricité. Il observe que dans bon nombre de cas, il y a réforme des structures, notamment une désintégration verticale. L'un des enseignements à tirer de la table ronde est qu'il est

nécessaire de procéder à une séparation des structures, au moins entre le réseau de transport et celui de la production. Les problèmes de concurrence sont évoqués dans toutes les entreprises publiques et autres secteurs réglementés car il est de plus en plus reconnu que la concurrence peut accroître l'efficacité du secteur et profiter aux consommateurs.



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