

# Developments in Electricity Law and Policy in Europe

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*New Zealand's electricity sector has undergone considerable restructuring since the mid-1980s. These developments have raised many issues in electricity law and policy, including state versus private ownership, structure, regulatory mechanisms, management of the wholesale market, and quality of service. Quality of service in electricity distribution has become an especially polemical topic following the massive power failure in central Auckland in early 1998. This article examines developments concerning such issues in select European countries. It finds that debate and uncertainty about the issues is by no means confined to New Zealand. The international comparisons help us to make some useful observations about New Zealand's situation, especially about the extent to which our government has preferred restructuring over regulation as an instrument of change.*

## I. INTRODUCTION

The New Zealand electricity industry is enormously different from what it was in 1986, when it comprised the New Zealand Electricity Division, the local electric power boards and the municipal electricity departments.<sup>1</sup> Prices and development decisions were made by the Minister, subject to an opaque mixture of economic, political, regional development and job creation factors. There was no market competition; indeed, electricity was not regarded as a market good. But corporatisation and then the Energy Companies Act 1992 and the Electricity

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1 See generally Barton, B.J., "From Public Service to Market Commodity: Electricity and Gas Law in New Zealand" (1998) *Journal of Energy and Natural Resources Law* (forthcoming).

Act 1992 changed all that. New Zealand now has two large generating companies, Electricity Corporation of New Zealand (ECNZ) and Contact Energy (which are both state-owned enterprises (SOEs)); a number of smaller generators; Trans Power (which is another SOE which operates the transmission grid); a wholesale electricity market (which is run by the industry); and energy companies (which distribute and sell electricity). Licensing does not exist for entry into any of the four elements (generation, transmission, distribution and sale) of the business. A limited number of larger customers now shop around in order to buy electricity from competing vendors. Apart from safety legislation, other "light-handed regulation" (which comprises information disclosure requirements for distribution businesses), and the general competition legislation that is found in the Commerce Act 1986, there is virtually no statutory regulation of the industry. A key feature is that policy has been implemented through restructuring more than by regulation. However, the government has used statements of corporate intent and other instruments to implement policy, especially with its SOEs, and there is a growing element of self-regulation within the electricity industry.

This new regime began well but started to display some significant problems. In April 1998 the government, recognising this, announced a new set of proposals. In generation, it believed that ECNZ still dominated the market. It saw evidence in market behaviour such as unduly high prices, high costs, excess capacity, little trading of long-term contracts, and use of less efficient plant before more efficient plant. Its solution was to further divide ECNZ into three small competing generation SOEs, so that in 2002 the shares of capacity will be approximately: SOE 1 (Waikato dams) — 13 percent; SOE 2 (Huntly and Te Awamutu thermal and Tongariro dams) — 17 percent; SOE 3 (Waitaki dams and Manapouri) — 30 percent; Contact (Clutha hydro, Wairakei & Ohaaki geothermal and oil & gas fired thermal) — 25 percent; other generators — 15 percent. ECNZ's directors were not in favour of the split. The decision was subject to consultation with Maori on the Treaty of Waitangi issues and reassurances on the financial arrangements. Privatisation of any of the new SOEs is ruled out by the government's coalition agreement, although many observers suggest that it is a real possibility at some stage.

The other part of the package of April 1998 addressed distribution and supply of electricity. Its main measure was a separation of the distribution and supply functions which are presently both carried out by energy companies; common ownership will be prohibited. The Electricity Industry Reform Act 1998, which implements the package, obliges the companies, within prescribed periods, to divest themselves of one side or the other of their business, either by sale or by transfer to a community trust. This aims to prevent cross-subsidy of supply from monopoly distribution operations. The Act further controls monopoly distribution operations by improving the information disclosure regime under the Elec-

tricity Act, and by providing new price control powers on distribution functions. The Act presses the industry to introduce a low-cost system, such as profiling, to allow small consumers to switch retail suppliers.

These developments raise a wide range of issues in electricity law and policy, such as state versus private ownership, structure, regulatory mechanisms, management of the wholesale market, and quality of service. Quality of service in electricity distribution is an especially hot topic after the massive power failure in Auckland's central business district in February and March 1998. This article makes a short inquiry into developments concerning such issues in England and Wales, Scandinavia and the Netherlands. It finds that debate and uncertainty about the issues is by no means confined to New Zealand. The international comparisons help us make some useful observations about our own situation, especially about the extent to which our government has preferred restructuring over regulation as an instrument of change.

## II. THE EUROPEAN CONTEXT

In Europe, there is a great diversity in the electricity industries of different countries.<sup>2</sup> In France, for example, at one end of the spectrum, Electricité de France completely dominates generation, transmission and distribution, and will do so for the foreseeable future. At the other end are the countries chosen for consideration here, which have made significant advances in market liberalisation, and with which New Zealand shares some characteristics. Cross has observed that "Market liberalization trends in the European electricity sector can be correlated positively with energy-rich countries."<sup>3</sup> At the risk of over-generalising, one can add that in most countries in Europe environmental concerns receive more attention in electricity reform than they do in New Zealand.

A word should be said about the European Communities dimension, although its comparative significance for New Zealand is minor. Market integration is the central, determining factor in the Community's energy policy.<sup>4</sup> The 1996 *Electricity Directive*<sup>5</sup> of the European Union (EU), which established common rules for the internal electricity market, calls for the market to be thrown open to partial cross-border competition from February 1999. It aims to stimulate competition by removing restrictions on generation; by providing some form of grid

2 The best analysis is Cross, E.D., *Electric Utility Regulation in the European Union: A Country by Country Guide* (1996).

3 Ibid 235.

4 White Paper of the European Commission, *An Energy Policy for the European Union* (Document COM(95) 682 Final: CM-BR-95-001-EN-C) (1996) 6.

5 EC Directive 96/92, OJ 1997 L27/20.

access to third parties; and by requiring a certain amount of unbundling of the functions of generation, transmission, etc. Whether it will be effective in the face of member states' machinations to protect their own electricity industries is debatable.<sup>6</sup> Indeed four decisions in October 1997 indicate that the European Court of Justice will be reluctant to question the rights of member states to organise the provision of public services as they deem appropriate, at least where the Community institutions have yet to adopt suitable measures to guarantee that these same services are available.<sup>7</sup> However, the Directive is putting pressure on the less liberalised countries to get reform under way.

### III. ENGLAND AND WALES

#### 1. Structure

From 1947, England and Wales possessed a fully nationalised system for generation and transmission, in the Central Electricity Generating Board (CEGB), and for local distribution, in twelve area electricity boards. (The Scottish and Northern Ireland systems are organised and regulated differently.) Liberalisation and privatisation were brought about by the Electricity Act 1989. Electricity was the first industry to be broken up before sale in order to introduce competition.<sup>8</sup> (The failure to break up telecommunications and gas before sale had led to enormous problems.) The CEGB was divided into four companies: National Power, PowerGen, Nuclear Electric and the National Grid Company. National Power (with about 50 percent of the generation capacity) and PowerGen (with 30 percent) were privatised by public offerings in 1991 and 1995. The area boards became Regional Electricity Companies (RECs) and were also sold. Nuclear Electric was later divided by transferring the uneconomic Magnox plants to British National Fuels Ltd, and the more modern and viable AGR and PWR reactors to British Electric Ltd, which was privatised in 1996.

Restrictions on corporate ownership of the RECs were lifted in 1995. A wave of takeovers followed, with the acquiescence of the Conservative government. The Labour government referred the case of the takeover of Energy Group by Pacificorp to the Mergers and Monopolies Commission, but the MMC was

6 Hancher, L., "Delimitation of Energy Law Jurisdiction: The EC and its Member States: From Organizational to Regulatory Conflicts", unpublished paper, *International Institute of Energy Law Workshop*, 10 December 1997, Leiden.

7 Ibid.

8 Newbery, D.M. & Green, R., "Regulation, Public Ownership and Privatization of the English Electricity Industry" in Gilbert, R.J. & Kahn, E.P. (eds), *International Comparisons of Electricity Regulation* (1996) 25, 59; Thomas, S., "The Development of Competition", in Surrey, J. (ed), *The British Electricity Experiment* (1996) 67.

satisfied that the regulatory controls over the merged company would be adequate, and that the merger would not operate contrary to the public interest. Eight of the twelve RECs are now owned by United States power companies.<sup>9</sup> However, the government has prevented takeovers of RECs by National Power and PowerGen, on the ground that vertical integration should not be allowed to reappear so as to hamper the development of competition. It is far from clear what the final structure of the industry will be after the mergers subside. If a few large vertically integrated companies are to dominate generation, distribution and supply, then they may be able to manage, or stifle, competition, and the current regulatory arrangements may be inadequate to exert pressure on them. It is not a promising outlook.

Strong forces are causing a trend toward integration of generation and supply.<sup>10</sup> The RECs have made a vigorous entry into generation, building numerous new combined-cycle gas turbine (CCGT) generation stations. Natural gas is freely available, on favourable contract terms, and CCGT capacity is cheap and quick to build.<sup>11</sup> This has facilitated market liberalisation by reducing barriers to entry and probably reducing the seriousness of a bias towards short-term investment.<sup>12</sup> The incumbent generators have had to cut prices in response.

The incumbent generators have also dramatically reduced their purchases of coal. The coal industry is now in serious trouble, even before considering ever tighter emissions controls. In 1997 the government suddenly showed concern about fuel diversity. It has imposed a moratorium on consents for all new power stations, almost all of which are gas-fuelled.<sup>13</sup> It also initiated a review of the long-term energy requirements of the nation and of energy sources for power stations.<sup>14</sup>

In New Zealand, natural gas and CCGT technology are playing a similar role in enabling new entry into generation. Vertical integration may proceed quickly when the new reforms take effect, because it is intended to allow generator companies to sell directly to consumers. Distribution, however, will be kept separate, unlike in England.

The RECs in England and Wales held exclusive franchises for customers under 1 MW in their areas until 1994, and for the smallest customers (under 100kW peak demand, mainly households) the franchises were dated to expire on 31 March 1998. Customers outside those classes could buy electricity from any "second-tier" supplier, including any other REC or a generator direct. The

9 *Power in Europe*, 5 December 1997; Thomas, *supra* note 8, at 70.

10 Thomas, *supra* note 8, at 73; Parker, M., "Competition: The Continuing Issues" in Surrey, *supra* note 8, at 215.

11 Thomas, *supra* note 8, at 74.

12 Newbery & Green, *supra* note 8, at 78.

13 *Power in Europe*, 5 December 1997.

14 UK Department of Trade and Industry, *Press Release P/97/868*, 22 December 1997.

largest customers exercised this freedom to choose suppliers as soon as it was possible in 1990, and so did the medium-sized customers when their turn came in 1994. A competitive market had emerged. However, most of the supply came from the existing generators and RECs.

National Grid Co was initially owned by the RECs through a holding company, but the regulator obliged them to sell by floating the company in 1995. The whole system of setting tariffs has been much criticised, and in spite of some changes may still not be adequate to send the right signals either to generators to locate in the correct places, or to NGC to construct the most efficient transmission system.<sup>15</sup> This reflects a complex debate in New Zealand about transmission pricing.

The England and Wales Pool provides the wholesale electricity market; membership is compulsory for licensed generators and suppliers. It has been beset with a number of problems. The government's failure in 1989 to subdivide the generation sector adequately left a market dominated by a slowly ebbing duopoly, which is likely to have caused unduly high prices and substantial deadweight losses.<sup>16</sup> In addition, about 90 percent of the electricity traded through the Pool was covered by long-term contracts for differences, which circumvented the Pool price-setting, so that the two dominant generators have nearly always been able to make their income whatever prices they bid into the Pool.<sup>17</sup> This dominance made it very risky for a new company to enter the generation market relying on the Pool for its income. The RECs and the large customers have been discouraged from relying on it. The regulator reacted to the duopoly by requiring the two dominant generators to ensure that Pool prices would be held at an annual average of about 2.55p/kWh for two years from April 1994. Unfortunately this was counterproductive; it gave the strongest possible signal that the Pool was not a genuine market. The Pool's credibility is at a low ebb.<sup>18</sup> In late 1997 the government announced a full review of the wholesale market including the Pool.<sup>19</sup> New Zealand has similar problems with a generation duopoly.

## 2. Regulation

The Electricity Act 1989 allocated regulatory responsibilities to several different organs. The most visible is the Director-General of Electricity Supply (DGES),

15 Newbery & Green, *supra* note 8, at 72. A valuable study comparing the pools of England and Wales, Victoria (Australia), Alberta (Canada) and Scandinavia (Norway and Sweden) is to be found in Barker, J., Tenenbaum, B. & Woolf, F., "Regulation of Power Pools and System Operators: An International Survey" (1997) 18 *Energy Law Journal* 261.

16 Newbery & Green, *supra* note 8, at 65; Thomas, *supra* note 8, at 81.

17 Thomas, *supra* note 8, at 82; Cross, *supra* note 2, at 258.

18 Thomas, *supra*, note 8, at 86.

19 *Energy Utilities*, November 1997.

who heads the Office of Electricity Regulation (OFFER), but who on all major issues holds responsibility jointly with the Secretary of State, ie, the government. The Act confers a variety of override and back-up powers on the Secretary of State, for example, in relation to fuel policy, fuel stocks, generation and transmission construction, and civil emergency. The third regulatory agency is the Monopolies and Mergers Commission (MMC), the country's competition authority. The MMC acts only on a reference from the government or from the DGES. It has three main heads of jurisdiction: disputes between the DGES and a licensee, abuses of monopoly power, and (only on reference from the government) takeovers and mergers.<sup>20</sup> The DGES has made good use of the threat of a reference to the MMC, because its investigation is elaborate and lengthy, and may result in recommendations that go well beyond the initial dispute with the DGES. For example, in 1996 National Power and PowerGen completed the divestment of 6000MW of coal-fired capacity at the behest of the DGES in order to promote competition. An MMC inquiry could well have forced a more radical breakup of the companies.<sup>21</sup> Also to be noted are the Consumers' Committees established under the Act with duties to review and advise and to resolve certain complaints.

The Act imposes upon the DGES and the Secretary of State general duties in performing their functions: to secure that all reasonable demands for electricity are satisfied; to secure that all licence holders are able to finance their authorised activities; and to promote competition in the generation and supply of electricity. This last duty is significant; the task, especially of the DGES, is not merely to control monopoly, but actively to promote competition. Subordinate duties include consumer protection, promotion of efficiency, and taking into account the effects of industry activity on the environment.

The Act imposes some duties on companies directly, especially on the RECs, such as a duty to supply, a duty to avoid undue preference to any person or class of persons, and a duty not to disconnect customers except in prescribed circumstances. Other duties and conditions are imposed through licences, which have an important role. A licence is required to generate, transmit or supply electricity. The initial licences were issued by the Secretary of State, but subsequent ones by the DGES. The DGES can propose modifications of a licence either with the licensee's consent or by referral to the MMC.

The transmission and public electricity supply licences (issued to the RECs) are particularly elaborate because they regulate monopoly operations on price and the duty to provide non-discriminatory access.<sup>22</sup> The regulator's powers to

20 MacKerron, G. & Boira-Segarra, I., "Regulation" in Surrey, J. (ed), *supra* note 8, at 95, 99.

21 Thomas, *supra* note 8, at 73.

22 Cross, E.D., "Regulated Access to European Electricity Networks" [1996] 7 *Utilities Law Review* 22.

include whatever conditions may appear “requisite or expedient” are very wide.<sup>23</sup> Connection disputes are settled by the DGES. The DGES sets performance standards to tariff customers. The licences prohibit cross-subsidisation between separate businesses as well as between sales to franchise and non-franchise customers. The RECs were required to make an accounting separation between the distribution and supply sides of their businesses.<sup>24</sup>

The DGES regulates prices in the transmission business of NGC and the distribution and supply businesses of the RECs. It was recognised that the two transportation functions, transmission and distribution, would need to be regulated indefinitely. Supply to customers was thought to require regulation as a merely interim measure. Since 1994 only the franchise supply has been subject to price control. Price-cap or RPI-X regulation is used. It was introduced initially in the privatisation of telecommunications, as a cheaper and simpler alternative to United States and Canadian rate-of-return regulation. RPI is the retail price index and X is an efficiency improvement term set and reset by the regulator, so that prices charged by the industry should rise less rapidly than prices in general.<sup>25</sup> It provides the utility with an incentive to reduce its costs so as to increase profits, but in a manner intended to provide it with a reasonably stable regulatory environment.

RPI-X price regulation has proved to be more difficult to administer than had been foreseen. It is difficult to set X at a level that adequately anticipates the cost savings that can be made over the next five years. The companies can and apparently do withhold important information from the regulator. It is difficult to evaluate the appropriateness of a company’s capital programme. Price regulation has hybridised with rate-of-return regulation, and there has been less regulatory stability than had been expected.

There has been much criticism of the structure and accountability of regulation of the utility industries, often under the headline “Who regulates the regulators?”<sup>26</sup> The four main points have been: insufficient accountability to Parliament for decisions that can have far-reaching effects; excessive discretion allowing idiosyncratic, personalised styles of regulation, and requiring little explanation or justification for decisions; insufficient independence of regulators from government; and failure of regulation to reflect wider policy objectives, especially efficient energy use. A case in point has been the single-handed decision of the DGES, in pursuit of his duty to promote competition, to restructure the generation industry with a sale of 6000MW of capacity in 1996. The Labour govern-

23 Cross, *supra* note 2, at 249–264.

24 Thomas, *supra* note 8, at 70.

25 MacKerron & Boira-Segarra, *supra* note 20, at 101.

26 Surrey, J., “Unresolved Issues of Economic Regulation”, in Surrey, J. (ed), *supra* note 8, 235; Prosser, T., *Law and the Regulators* (1997).



ment did not launch into any immediate radical change in electricity policy,<sup>27</sup> but has announced a major review of the regulation of the four utilities (electricity, gas, telecommunications and water)<sup>28</sup> along with its reviews of the wholesale market and energy sources generally.

### 3. Performance and Present Issues

Some of the results to date from regulated private enterprise have been very positive. There has been a marked improvement in service. As for prices, the system has had the general benefit of making the real costs of some power sources (coal and nuclear) explicit.<sup>29</sup> Domestic rates experienced an initial rise after privatisation, but then a reduction between 1992 and 1995, although it was partly masked by the imposition of VAT on domestic consumers in 1994.<sup>30</sup> Prices have remained steady since then, but there is now greater prospect that the economic surpluses from the first five years of privatisation will start to be seen by customers. Prices to industrial consumers have been more varied; some of the very largest suffered from the removal of old subsidies. Most, however, have profited from significant price reductions following competition. The DGES has proposed a new set of supply price controls for the public electricity supply licencees that will offer significant reductions in 1999 and 2000.<sup>31</sup>

But shareholders of utility companies had made extremely large gains in the first years of a liberalised market. The initial settings of X were very generous. The low-risk cash flow that they virtually guaranteed were a very attractive investment, as the high values put on RECs in takeover bids demonstrated.<sup>32</sup> In 1997 the Labour government imposed a windfall profits tax on the companies to recoup some of the excess. The tax is expected to reap £2.1 billion.<sup>33</sup> This is peanuts compared to the increase of share value of the RECs from £5.18 billion in 1990 to £15.48 billion in August 1995, and for National Power and PowerGen from £3.6 billion to £9.79 billion over the same period, a flat period on the stock exchange. Profitability rose similarly. In December 1995 the RECs banked another £2 billion gain on the selloff of NGC, even after making a £50-per-customer payment (totalling £1.1 billion) as a sop to political pressure.<sup>34</sup>

27 McHarg, A., "Government Policy towards the Electricity Industry under Labour" [1997] 8 *Utilities Law Review* 203.

28 *Power in Europe*, 4 July 1997.

29 Newbery & Green, *supra* note 8, at 77.

30 MacKerron, G. & Watson, J., "The Winners and Losers So Far" in Surrey, J. (ed), *supra* note 8, at 185, 192; Electricity Association Website <[www.electricity.org.uk](http://www.electricity.org.uk)> read 10 February 1998.

31 *Energy Utilities*, November 1997.

32 MacKerron & Boira-Segarra, *supra* note 20, at 105.

33 *Power in Europe*, 4 July 1997.

34 MacKerron & Watson, *supra* note 30, at 197.

The most visible current efforts of the DGES to promote competition are in the remaining franchise supply area to domestic consumers. The task is enormously complex, and the DGES is heavily involved in the difficulties of establishing a trading and settlement system and a system of profiling customers. One of the difficulties is that margins per customer are low in this market (on average RECs make only £5 profit per customer per annum), leaving little room for expensive advertising, sophisticated metering and significant discounting.<sup>35</sup> The technical problems are also enormous, in reconciling different companies' computer and billing systems. There were huge billing problems for the gas customers who went out onto the open market in 1994. There is a lot of anxiety that a repetition on a larger scale will be a political and public relations catastrophe. The deadline of 1 April 1998 has been extended to 1 September 1998.<sup>36</sup>

#### IV. SCANDINAVIA

Sweden, Norway and Finland have long had decentralised electricity sectors, where state-owned enterprises generated half or less of the power, and functioned alongside substantial numbers of distributors and other producers.<sup>37</sup> (Denmark, by contrast, has a history of decentralised generation by agricultural co-operatives and municipalities, but remains subject to close central control and co-ordination.) While decentralisation made it easier to liberalise the market, there was a high degree of vertical integration of generation, transmission, distribution and supply. Thus in Sweden, electricity production had always been free in theory but in practice limited by the monopoly rights of the owners of the transmission and distribution grids. A primary element of reform was to de-integrate these monopolies. All three countries have moved actively to liberalise; Norway established an electricity market in 1990, Finland did so in 1995, and Sweden in 1996. Together they are moving to a single market where power can easily be sold from one company to another, even across national borders. This is not a European Community (EC) development; Norway is not in the EC, and Denmark and Germany, which are, are completely closed to power exports from their fellow member Sweden.<sup>38</sup>

In Sweden, the state-owned enterprise Vattenfall was divided in order to separate the competitive generation operations from transmission and co-ordination of power supply. The transmission grid is in the hands of Svenska

35 Thomas, *supra* note 8, at 91.

36 Office of Electricity Regulation, *Press Release R2/98*, 20 January 1998.

37 Helby, P., "The Implementation in Sweden of the EU Directive on the Internal Market in Electricity" (1997) ENER Bulletin No. 21.97; Cross, *supra* note 2, at 285 et seq.

38 Helby, *supra* note 37.

Kraftnät, a state-owned enterprise.<sup>39</sup> The legislation obliges the holder of a network concession to connect and transmit on a non-discriminatory basis in exchange for reasonable payment. It therefore gives full rights of third-party access. Tariffs are supervised by NUTEK, the National Board for Industrial and Technical Development. Its tariffs are fixed by a nodal pricing principle where the generator is charged for the input of power at a price that reflects the value to the system of electricity entering the system at that particular point; and the tariff for offtake is intended to reflect the cost of delivering power at that particular point. The distance between the two points is not part of the calculation. Svenska Kraftnät is working out technical rules for system reliability on a co-operative basis through voluntary agreements with users<sup>40</sup> — a striking parallel with the emphasis on negotiation with individual customers in the development of Trans Power's Grid Security Policy in New Zealand.

In Norway, reform began with the Energy Law 1990.<sup>41</sup> It separated Statnett (a state-owned enterprise) as owner of the national grid from Statkraft, the main generation SOE. Statnett also administers foreign exchanges of power. The grid and the local distribution networks are made subject to the principle of common carriage and free third-party access. Vertically integrated companies are obliged to make an accounting separation of their generation and distribution operations. (Finland's legislation is similar, obliging network operators to connect and transmit on request, within the capacity limits of the network, in exchange for reasonable compensation. Terms must be disclosed, and, while there is no formal price control, the electricity market authority can refer anti-competitive practices to the Office of Free Competition.<sup>42</sup>) A new regulatory regime was introduced in Norway, giving an active responsibility for electricity to the national competition agency as well as the traditional regulatory agency for the industry. Regulatory interventions are made to secure common carriage, to secure transparent tariffs, and to resolve disputes where distribution companies have locked customers in to long-term relationships. However, prices are no longer fixed by the authorities. Customers are allowed to buy from any utility having a sales licence.

As for the numerous local utilities, the Swedish reforms imposed a corporate separation, requiring separate companies for distribution and for power production and sales.<sup>43</sup> Although the companies are to be separate for accounting and legal purposes they can have the same ownership. Distribution is billed to the

39 Cross, *supra* note 22.

40 *Ibid* 25.

41 Hope, E., Rud, L. & Singh, B., "Markets for Electricity: Economic Reform of the Norwegian Electricity Industry" in Olsen, O.J. (ed), *Competition in the Electricity Supply Industry* (1995) 69.

42 Cross, *supra* note 22.

43 Helby, *supra* note 37.

customer separately from the sale of power. The distribution companies are holders of network concessions and therefore subject to obligations to connect and distribute on a non-discriminatory basis in exchange for reasonable payment. They are subject to detailed accounting and information disclosure rules intended to ensure transparency and prevent hidden cross-subsidies.

The ability of householders to participate in the market depends critically on solutions to the metering problem.<sup>44</sup> The government was obliged to act after it had completed the main body of reforms and imposed a requirement that for a maximum charge of SEK 2,500 (about \$NZ525) utilities install the necessary improved meters that can meter by the hour. (By contrast, Norway adopted profiling, which imputes a standard time profile of power consumption to consumers. This opens the market up to even the smallest consumer. But either the consumer or the distributor can install a meter, if it thinks it advantageous, at its own expense.<sup>45</sup>) As a transitional measure, ostensibly for five years but maybe longer, the power companies have a special role as local buyers and sellers of last resort, serving customers who do not wish to shop around on the free market, and buying from small generators who do now wish to sell on it. These activities continue to be regulated as before for the sake of consumer protection.

The new Swedish local sales companies have plunged energetically into trading, although some of them have failed to cope with the risks of the new regime. They too are restructuring, as some sales companies integrate horizontally and others are bought by generators wanting direct access to consumers. Aggressive marketing aimed at small businesses and households is now appearing in Stockholm. One package includes a free meter. The established distributor is having to fight back. Other sellers are finding green power to be an unexpectedly strong marketing advantage. Business buyers are greening their procurement policies in order to obtain green certificates for their end products.<sup>46</sup> The Finnish generator Imatran Voima Oy has set up new marketing ventures in Finland and Sweden to sell electricity under a common trademark with a package of services including around-the-clock maintenance, eco-energy and customer-tailored payment options.<sup>47</sup> Prices have remained reasonably stable once tax changes are taken into account. Household consumers have actually fared marginally better than large industrial consumers,<sup>48</sup> which contrasts with the experience in New Zealand and other countries.

44 Ibid.

45 Ibid.

46 Ibid.

47 *Power in Europe*, 5 December 1997, 12.

48 Helby, *supra* note 37.

In spite of the reforms, vertical integration and cross-subsidy continue to be commonplace in Sweden.<sup>49</sup> Most of the local distribution companies are subsidiaries of larger concerns, and the lack of independence has caused cross-subsidies, which reduce electricity prices in the competitive sales market by raising distribution tariffs. The regulator NUTEK has ordered fee reductions by several distribution companies and Svenska Kraftnät. There was a rush of vertical integration before the market opened, and an estimated 39–42 percent of generating utilities control delivery to the end user. Competition remains scarce in generation. Generation companies are restructuring and integrating horizontally, within the country and internationally, although the merger of the Swedish, Norwegian and Finnish markets reduces the effective market power of any single company.

The electric power exchange Nord Pool operates in Oslo, and has grown out of a spot market for occasional power that has been run for over twenty years by the Norwegian Power Pool.<sup>50</sup> Swedish generators and suppliers are now active traders on it, and Finland is taking steps to join as well.<sup>51</sup> The Pool has spot market and forward market components, and is regulated primarily by its grid-operator owners. It now comprises 180 participants.

Overall, the Nordic power sector is one of the most liberalised markets in the world. The preponderance of hydro generation has made this possible, because it is more flexible and needs less centralised dispatch than a thermal-dominated system like the UK's.

## V. THE NETHERLANDS

The Dutch electricity supply industry has a history of being a closed, centrally planned sector, relying on public ownership and additional restrictions on competition for the fulfilment of functions in the public interest, although there have been modest steps towards a more open, competitive system.<sup>52</sup> New legislation introduced in 1997 looks ahead to the arrival of more substantial international competition.

Nearly all the generation and distribution companies in the Netherlands are owned by provincial and municipal authorities. There has been considerable consolidation in recent years, while at the same time the vertically integrated utilities

49 *Power in Europe*, 5 December 1997, reporting studies made by NUTEK and the Swedish Competition Authority.

50 Hjalmarsson, L., "From Club-Regulation to Market Competition in the Scandinavian Electricity Supply Industry" in Gilbert, R.J. & Kahn, E.P. (eds), *supra* note 8, at 126, 143.

51 *Power in Europe*, 24 October 1997.

52 Huygen, E.H., *Electricity Regulation in the Netherlands: A New Guide to Dutch Electricity Law* (1995) 61; Cross, *supra* note 2, at 167.

have separated their production and distribution businesses. There are now four main generation companies and (in 1995) twenty-eight distribution utilities. Since 1949 the generation companies have co-operated closely through a jointly owned company, SEP, which owns and operates the national grid. It also purchased fuel (mainly natural gas), coordinated demand and supply and construction decisions, and negotiated imports and exports of electricity. The majority of SEP's board of directors were to have no links with the generators, and the chairperson had to be approved by the Minister. In its *IJsselcentrale* decision in 1991, the European Commission accepted that SEP was a joint venture controlled by parent companies who were engaged in separate activity, and did not form (with the generators) one indivisible system for public electricity supply.<sup>53</sup>

### 1. The Electricity Act 1989

The Electricity Act 1989 proceeded on the general principle that the industry function at arm's length from the government as much as possible. The Act empowered SEP to exercise considerable regulatory or self-regulatory authority within the industry. It may have been the public ownership of the industry by municipalities and provinces that precluded comprehensive national legislation and a more active role for the central government.<sup>54</sup> Interestingly, this relatively high level of industry autonomy was accompanied by a high level of central planning. There was a great deal of formal consultation and co-operation, and all major decisions on investment, pricing, tariffs, import contracts and access to transmission were regulated by the Minister. The Minister of Economic Affairs approved the Electricity Plan which was prepared every two years by SEP. The Plan held an important place in the formulation of energy policy and the central planning of the system, such as for new generation projects. It was one of the more transparent planning processes in the EC.<sup>55</sup>

The four main licensed producers were subject to special duties. They had to submit all their production to SEP, "buy it back" and sell it to the distribution utilities. With SEP they were "jointly responsible for the reliable and efficient functioning of the national electricity supply at the lowest possible cost and in a socially justifiable way".<sup>56</sup> SEP held an exclusive right to construct and maintain high-voltage lines. SEP and the distribution utilities were subject to an obligation to provide network access upon request for public supply, supply to a special large customer, or imports. SEP held a statutory monopoly on imports, and an effective monopoly on exports.<sup>57</sup>

53 Cross, *supra* note 2, at 172.

54 *Ibid* 188.

55 *Ibid* 175.

56 *Ibid* 177.

57 *Ibid* 184.

The distribution utilities held no statutory monopoly or franchise rights, but in practice operated within distinct supply areas. The 1989 Act imposed on them duties to supply all customers in their operating area, at rates not over the maximum approved tariff. They had the right to purchase electricity from any of the four licensed producers, but this “horizontal shopping” did not develop, mainly because wholesale prices were based on a uniform national tariff.

The 1989 Act encouraged growth in non-conventional production, mainly combined heat and power (CHP) plants (in which the Netherlands has become a leader), co-generation by “autoproducers”, which are industries producing electricity for their own needs and having surpluses available for public distribution, and wind power. These facilities did not need to be licensed, and distribution utilities were obliged to purchase the power they produced in accordance with a very favourable avoided-cost formula — an arrangement akin to legislation enacted in the USA in 1979.<sup>58</sup> This policy was highly successful; it produced an explosion of investment and construction in non-conventional capacity, to the extent that in 1994 a moratorium was imposed to prevent stranded investment in the traditional generation system; a reassertion of central planning over a limited experiment in allowing new companies into the market.<sup>59</sup>

The Electricity Act 1989 of the Netherlands reflected changing policy opinions. It established a limited degree of competition. But the characteristics of the system were rather traditional in that the industry was publicly owned and that there were several devices to exclude competition in order to guarantee the security of supply.<sup>60</sup>

## 2. Current Reforms

A White Paper in 1996<sup>61</sup> stated impressive aims for the future of the energy sector and for the electricity industry: to improve energy efficiency by one-third in the next 25 years, and to achieve a 10 percent share of renewables in total primary energy consumption by 2020. These objectives would have to be implemented in a number of different sectors, but would be vital in stabilising CO<sub>2</sub> emissions. The White Paper pointed out that the 1989 electricity regime’s preferential price for co-generation and other “decentralised” capacity could not be continued now that the start-up period was over; and that there had to be change away from the existing planning method which was excessively supply-driven. Greater market liberalisation was desirable. Grid ownership should be separated

58 See Cuhady, R.D., “PURPA: The Intersection of Competition and Regulatory Policy” (1995) 16 *Energy Law Journal* 419.

59 Cross, *supra* note 2, at 169; Brunekreeft, G., “The 1996 Reform of the Electricity Supply Industry in The Netherlands” (1997) 6 *Utilities Policy* 117.

60 Huygen, *supra* note 52, at 3.

61 *Third White Paper on Energy Policy*, February 1996.

and made subject to clear rules. In addition, the industry would have to adapt to internationalisation in order to be ready to compete in Europe.

Later in 1996, these conclusions were elaborated in a final policy document,<sup>62</sup> and new electricity legislation was introduced in Parliament. The Bill pursues market liberalisation by eliminating the main controls on generators. The four main licensed producers would be freed of their special duties (for example, to guarantee supply), and placed on the same footing as other producers. Transitional protection is proposed for small generators (less than 10 million kWh pa) by guaranteeing that their output will be purchased by the licensed suppliers. Many of these small generators are wind or co-generation producers.

As for line functions, the Bill proposes to separate all electricity grids — high, medium and low voltage — from the existing generation and distribution utilities and to re-incorporate them as separate companies. While this is a corporate separation (it does not prevent overlapping ownership) it would go further than the White Paper by extending the separation into local distribution. Grid operators would have a duty to give open and non-discriminatory access. Grid operations and tariffs would be regulated, and tariffs made public, in recognition of the monopoly characteristics of grids. This regulation would be performed by a new agency, the Electricity Supervision Service, reporting to the Minister of Economic Affairs.

Even though an electricity trading exchange of some kind is a key element of the reforms, the government has left its development to the industry. It is not dealt with in the Bill. Work is under way to establish the Amsterdam Power Exchange under the Amsterdam stock and options exchanges, following the Scandinavian model. One problem it faces is that SEP controls 60 percent to 70 percent of all Dutch production capacity. SEP may be able to influence prices, and the exchange may not be able to sustain a genuine trading market. It hopes to attract participants from Belgium and Germany as well as the Netherlands.

The Bill proposes that the sale of electricity, and the difficulties of promoting competition where many of the customers have no real choice, be addressed by making a division between “captive” and “free” customers. Captive or protected customers would have security of supply and a protected tariff, but would have no choice in supplier and no access to the grid. This of course is the traditional system. Market liberalisation aims to produce free customers, who can buy electricity wherever they wish, and have free access to the grid, but are not guaranteed supply or tariff protection. The Bill classes only a few hundred of the largest customers as free straight away. Middle-sized customers would have rights to become free, phased in over a period. Small household consumers would have a right to become free in 2007, but while they remain captive they are

62 Ministerie van Economische Zaken, *Current Lines: Towards an Electricity Market: The Framework of a New Electricity Act in the Netherlands* (1996).



protected as to security of supply and regulation of tariffs. These plans to open the retail market in steps are similar to the UK's, although the pace is not as rapid.

The Bill proposes that support for renewable energy will continue, but through different means. Use will be made of tax incentives and "covenants" between the government and electricity suppliers about the amount of renewables in their generation mix. The Netherlands has considerable experience in using voluntary covenants for such purposes. As mentioned above, small renewable generators would still be able to count on a guaranteed market as captive generators. The Bill also opens up the possibility of imposing an obligation to purchase a certain amount of "green energy" and a system of tradeable green energy rights.

The EC Directive on the Internal Market for Electricity of June 1996 aims for a free, or at least freer, European market for energy. The Dutch Bill consequently loosens restrictions on imports, but it does not do away with them. It preserves for the Netherlands the ability to shut out exporting countries who have not opened up their own markets to competition. A degree of reciprocity or equivalence can therefore be maintained.

In view of these moves towards freer import and export of electricity, the Dutch industry intended to merge the four main licensed producer companies into a single large generating company, the GPB, owning about 77 percent of the total capacity. This company, it was thought, was necessary to ensure that there would be a Dutch company big enough to be competitive in the new European market. This merger was intended to accompany the statutory reforms. However, it is not proceeding because the shareholder distribution companies have not been able to reach agreement.

Brunekreeft identified three areas of concern with the Dutch proposals.<sup>63</sup> The first was the ownership structure; a single generation company would own the transmission grid, and the licensed suppliers would own the distribution networks and the majority of shares in the dominant generator. In effect the incumbent licensed suppliers would collectively own the entire sector. More independence and competition (for example, in the operation of the grid, or in purchasing decisions by suppliers) could have been obtained if the generation sector, the grid and the suppliers were owned directly by the governmental shareholders. This concern is not addressed by the failure to form the GPB. Second, the establishment of the single dominant generator was likely to reduce competition. The failure of the GPB merger at least addresses this. Third, the difficulties of regulation may not have been properly considered. An example is the possibility of suppliers cross-subsidising their sales to their free customers at the expense of their captive customers. A full regulatory framework is required to prevent the regulator itself from being captured.

63 Cross, *supra* note 2.

The 1996 Bill is still in Parliament at the time of writing. It has passed the Second Chamber, and is now in the First Chamber. The target is to implement it at the beginning of 1999.

## **VI. SIMILARITIES, DIFFERENCES AND POSSIBILITIES**

Market liberalisation of the energy sector is gradually making itself felt throughout Europe, as in other regions of the world, although differences of speed and style are noticeable from one nation to another. Liberalisation can take a number of different forms, depending on national circumstances, history, and legal and economic culture.

### **1. Structure**

Structure and ownership can be considered first. Britain is the outstanding example of privatisation of a previously state-owned electricity sector. The British experience is a warning of the breathtaking amounts of money that governments often leave on the table when they privatise. However, Scandinavia and the Netherlands show that privatisation, which is ruled out in New Zealand government policy, is not a necessary or inevitable component of liberalisation. Scandinavian countries have introduced substantial market liberalisation without privatising SOEs in generation or transmission. Neither the Scandinavian countries nor the Netherlands interfered with the high levels of local government ownership of their electricity industries. Resistance there to losing local control by privatising or merging local government enterprises has distinct parallels with the reluctance of New Zealand's energy trusts and municipalities to lose their corporate control through mergers, even though economies of scale could be expected to result. The lack of competence of some of the Swedish companies is a warning for New Zealand, especially as the separation of distribution and supply here is likely to cause a shakeup of local companies.

New Zealand's breakup of generation capacity has paralleled Britain's. The evidence that pointed to the deleterious effect of the National Power–PowerGen duopoly supports the contention that in New Zealand further measures are needed to ensure proper competition. For those who are perturbed by the spectacle of numbers of small companies standing where the New Zealand Electricity Department once stood alone, there is some reassurance to be had from Scandinavia, with its long history of numerous small generation companies, competing against each other but co-operating to maintain a stable system. The plan in the Netherlands to merge the four main generation companies would have been a move in the opposite direction, but appears to have foundered. The plan was perhaps the echo, in another small country, of the need that New Zealand has felt

from time to time to allow some corporate concentration in order to sustain an indigenous industry.

The division of the monopoly distribution or network business from the competitive sales or retail business has been an important part of many liberalisation programmes. In Scandinavia and the Netherlands, corporate separation of the two businesses has been required, but not ownership separation. England has used an accounting separation through licence conditions. In all three countries, however, there has been a strong tendency towards vertical integration. Generator companies wish to enter the supply business in order to secure direct access to the markets for their product, although in England their efforts have been resisted by regulators. Sales companies or local utilities seek to protect themselves from market uncertainty by building their own “embedded” generation capacity with cheap CCGT technology. In both Sweden and the Netherlands, corporate separation is open to criticism for not going far enough, and not tackling problems of lack of independence, lack of market competition, and cross-subsidy between related concerns. These concerns make the full ownership separation required by New Zealand’s 1998 Act appear to be a prudent measure, especially in the absence of an industry regulator to supervise third-party access arrangements.

Competition for sales to small electricity customers is everywhere characterised by thin margins. In its proposals of April 1998 the New Zealand government now recognises that competition in this sector will not necessarily spring into existence simply by abolishing the old franchise restrictions. In England and Wales a huge amount of regulatory and industry effort has been necessary to make retail competition a reality. In Sweden the government had to intervene directly to bring metering within the reach of domestic consumers. It may be that the New Zealand government’s gentle nudge, giving the industry until April 1999 to set up a profiling or like system, under threat that the government will put in a system by default, is insufficient.<sup>64</sup> It may seriously underestimate the enormous computing and legal problems that other countries have had to solve to introduce retail competition without plunging into chaos.

There have been relatively few completed mergers or acquisitions of energy companies in New Zealand since 1992. The experience in England and Scandinavia suggests that a wave of such activity could well be expected as corporations respond to changes in their legal and market environment. Horizontal integration is likely as energy companies merge into more efficient units, although local sentiment can be a strong contrary influence where companies are owned by community entities or local bodies. Vertical integration is likely as companies merge electricity generation and sales functions. The emergence of a

64 The Electricity Industry Reform Act 1998 s 95 inserts a new s 170A into the Electricity Act 1992 to allow regulations to be made for a system of consumer choice, but the section expires unless it is used by 31 March 2001.

very different industry structure in a few years will create challenges of its own. What room will there be for electricity sales companies that do not own their own generation? Will the statements of corporate intent for the new SOEs allow them to make major diversifications into retailing electricity? Will a genuine open market for electricity be sustainable?

## **2. Regulation**

Regulation and the legal matrix can also be compared usefully from country to country. The British system is the most readily compared with New Zealand's. One is struck by its sophistication and its strength. Sophistication is seen in the range of objectives (social, environmental, fuel mix, emergencies) that Parliament laid down in the Electricity Act 1989 for regulators to pursue in exercising their powers. In them, the legislature determines what the state expects from corporate actors in this sector of the economy. None of this is done in New Zealand legislation. Sophistication is also seen in the careful way in which responsibilities are allocated to the Minister, the DGES and the MMC. Strength is seen in the powers of the regulators to intervene in pricing, investment, corporate structure, standards of service, and a number of other aspects of the industry's work. The licensing requirements are the vehicle for much of this activity, and have no equivalent in New Zealand. By comparison, our "light-handed regulation" is a spavined creature, even allowing for the use of statements of corporate intent and self-regulation, and for the modest regulatory changes in the Electricity Industry Reform Act 1998. Nor have the Scandinavian countries or the Netherlands left themselves bereft of effective regulatory powers to secure common carriage and the like. Indeed, compared to the most liberalised electricity regimes in Europe, New Zealand is right off the dial.

A good example of this difference in regulation is competition for domestic and small commercial supply. As in New Zealand, domestic consumers in Britain were a captive market for their suppliers. But the DGES had a duty to promote competition, and had the means at his disposal to oblige companies to move actively to provide customer choice. He was therefore able to carry out the sustained and forward-looking regulatory action that was necessary. In New Zealand, the government hoped that the removal of the old franchise barriers would be sufficient, and that market forces would induce companies to compete for domestic customers. They did not, of course, although a few companies have been carrying out trials of profiling. There is simply no agency with the necessary powers to require the industry to make such a change; certainly the Commerce Commission could not have brought it about.

This difference between New Zealand and these European countries in their regulatory capacity is also to be seen in commercial and strategic areas such as access to essential facilities, national fuel supply, security of supply, quality of

service, risk management, or (to pick an example of current interest to Auckland businesses) the right of distribution companies to include in their standard terms of service an exclusion of liability to customers for power failures. It is to be seen in social matters such as supply for low-income customers. It is to be seen clearly in environmental matters. In a number of European countries, electricity regulation seeks to promote renewable energy sources, reduce local impacts and limit carbon dioxide emissions.

### **3. The Limits To Restructuring**

This is not to say that we should bring our level of regulation up to that of other countries simply because we have less of it than they do. It is even less to say that we should do it their way, when even a cursory review shows the problems that they are encountering (the difficulties of the Dutch in extricating themselves from the over-promotion of renewables is an example). Rather, it makes us aware of how completely regulation has been dropped from serious discussion of energy policy in New Zealand. The government's explanation is that the best way to secure social, environmental, etc., objectives is through the free play of market forces. This may often turn out to be true; but is it always? We have put all our eggs in the market forces basket.

The reforms of 1992 and 1995 were mainly structural. Old legal constraints to competition were removed, but the main effort was to restructure the industry to separate competitive and non-competitive functions, and to establish entities that would be free to (and therefore would) enter into competition, so as to impose market discipline. The 1998 Act carries on in this vein, restructuring generation and distribution/supply. It is very arguable that both of these restructurings are necessary. What is less clear is whether restructuring will be sufficient. Admittedly the restructuring will be accompanied by regulatory reforms, but they are modest. Information disclosure, to which improvements are to be made, has a very long way to go before it exerts any significant influence over corporate decision-making. Regulation for profiling is held off for a year. Price control (if it is imposed) covers distribution and not sales; it covers domestic premises and rural customers only; and it does not extend to terms of service or quality of service.

We may have reached the limits to credible use of restructuring as the instrument for electricity policy. Paradoxically, market liberalisation, and the development of competition where it has not existed before, requires a more elaborate legal framework than the mere removal of old constraints and the establishment of potentially competitive companies.<sup>65</sup> In the future, New Zealand may need to consider the wider diversity of legal instruments that is in common use in other countries.

65 Observers of the English scene have said, "To equate domestic supply competition with deregulation is clearly to miss the point": MacKerron & Boira-Segarra, *supra* note 20, at 111.

