

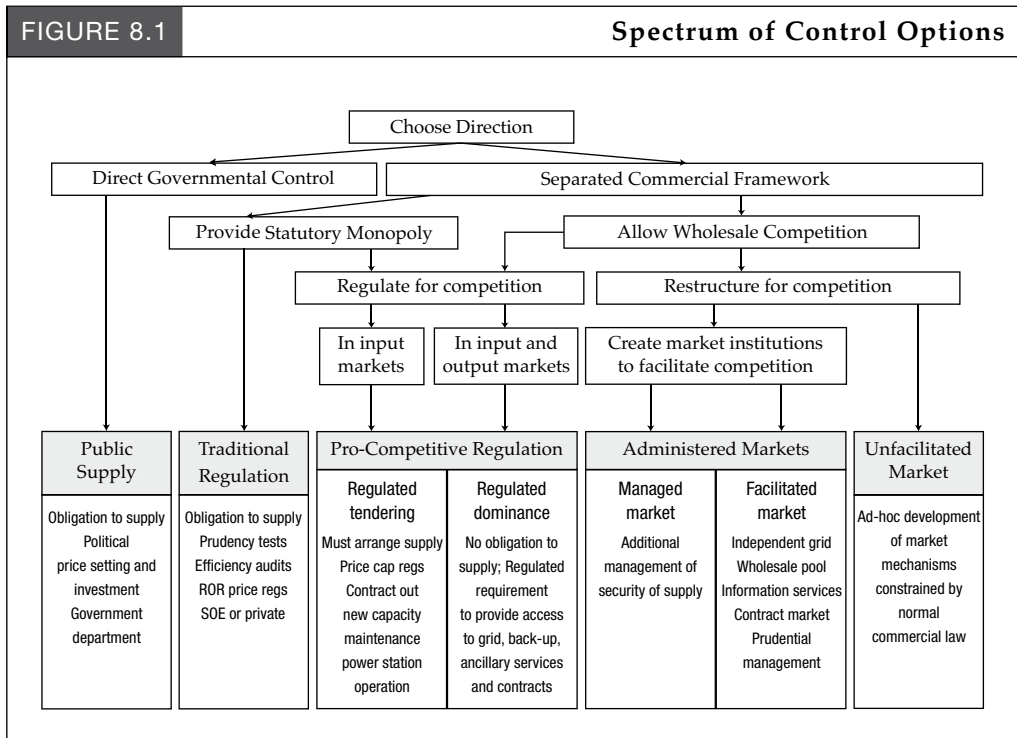
*This chapter begins by briefly recalling the Chapter 4 discussion of electricity reform models used overseas. This provides context for an in-depth discussion of the governance arrangements existing before the contemporary reforms, during the initial reform phases, and more recently. Before unpacking the more recent reforms, we provide a short discussion of what is meant by industry governance. This then leads into a detailed analysis of the wide-ranging reforms introduced in 2001, which were rapidly expanded upon and re-reformed in 2004. We will see that the pace of reform has increased dramatically since 2001, with a few significant revisions, but in the main reverting to centralised industry control by government, through the Electricity Commission. The chapter ends with a brief discussion of grid-security problems arising in 2004, in the context of Transpower's evolving corporate objectives since its inception. Such examples prove to highlight the vulnerability of the centralised approach, cautioning against simplistic belief in centralisation as a panacea to possibly non-existent weaknesses in the decentralised approach. The appendix to this chapter provides background discussions on industry evolution, markets and politics, and recent experience with centralised economic control.*

## INTRODUCTION

Questions of private and government initiative often lie at the heart of industry progress. If an industry is to grow, can its progress be left to private parties or is central or local government intervention required? If an industry is important, can its development be left to market forces, or is the guiding and constraining hand of the state required? Are there questions that the market cannot answer, or answers that government should not be asked to provide?

Hybrids of the centralised and decentralised approach are commonplace. As illustrated in Figure 8.1, options can range from direct government control, through varying degrees of regulation and administration, through to *ad hoc*, unfacilitated market development at the other extreme.

For the past two decades New Zealand has shifted from very considerable centralised control of most areas of economic activity (up until 1984) to a greater level of decentralised control, allowing and requiring industries to largely chart their own course subject to general constraints and policy goals. As we shall see below, recent reforms in the New Zealand electricity sector reflect a clear reversion to centralisation.



Source: Wholesale Electricity Market Study (3, 1992).

## CENTRALISATION AND DECENTRALISATION IN THE NEW ZEALAND ELECTRICITY SECTOR

### *Recent International Context*

As discussed in Chapters 2 and 4, the physics and economics of electricity provision through interconnected AC networks, and monopoly concerns surrounding electricity provision (whether “natural”, as for transmission, or accidental, as for nationalised generation), have both resulted in a historical bias towards centralised control. In the US private ownership of monopolistic, centralised, vertically integrated electric utilities, balanced by heavy-handed regulation, has long been the dominant model. In other countries or states such as New Zealand, Australia, and England and Wales, government ownership and control have been the norm. To varying degrees reforms in such electricity systems have tested the boundaries of what does or does not require centralised administration.

Many reforming jurisdictions have been relatively cautious in implementing reform, opting for centralised electricity markets and significant ongoing input by government

regulators – often with widespread electricity privatisations (e.g. Victoria). England and Wales opted first for this model, but then for the alternative extreme of highly decentralised markets but strong regulatory intervention as well. PJM in the US began with local privately owned monopolies, and has been transformed into a voluntary interconnection across states relying on highly decentralised markets. New Zealand has charted a different course that has involved strong government involvement at times and ongoing state ownership in the main, little regulatory intervention except through ownership, a mainly centralised electricity market, but otherwise decentralised industry control. As we shall see, only lately has it traded the latter for significantly increased regulatory intervention. In terms of Figure 8.1, this moves us from a facilitated market approach to one more based around traditional regulation.

The important lesson from these experiences – especially under NETA, PJM and other jurisdictions with mainly decentralised electricity markets – is that technical coordination questions (other than real-time grid management) do not require centralised control. Indeed, the PJM and Australian NEM experiences suggest that even problematic areas such as grid management and expansion can and are achieved with appropriate frameworks for private parties to operate within. Experience would tend to belie the necessity of centralised control of electricity systems' operation.

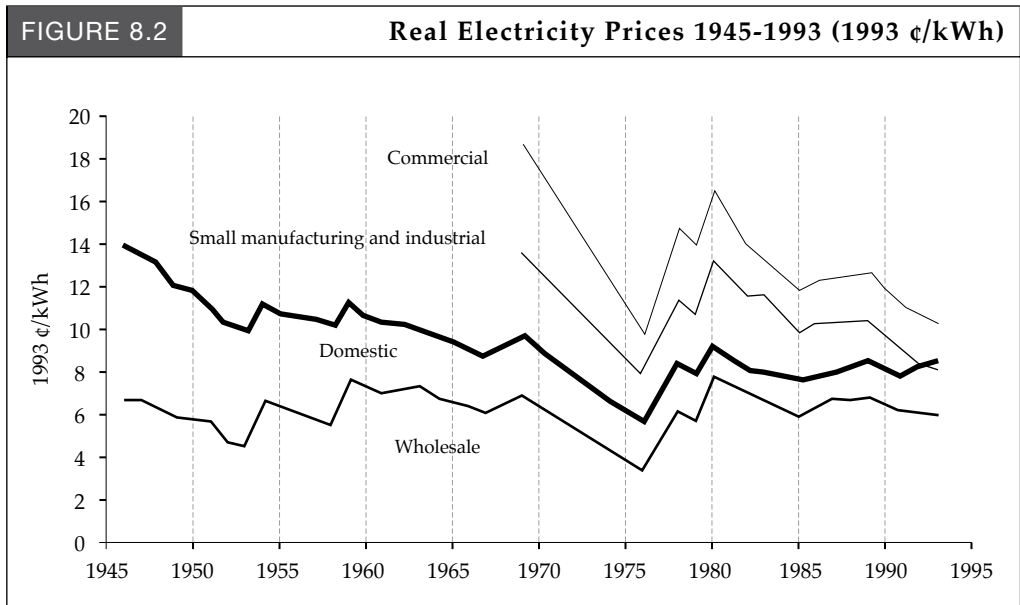
#### *Early Decentralisation Short Lived*

As noted previously, New Zealand's electricity sector began as decentralised initiatives by either private parties (e.g. for industrial processes) or by private parties in association with local government (e.g. for street lighting). Once central government assumed control of the nation's hydrological resources and embarked on a process of nationalising generation assets, building generation, and constructing the national transmission grid, the result was functional and administrative centralisation of much of the electricity system. Perhaps deterred by local-government reluctance to allow locally developed distribution assets to become part of the national asset, electricity retailing and distribution remained a decentralised aspect of the system.

#### *Market Solutions Supplanted by Government*

With such centralisation it became largely inevitable that non-market-based solutions would be applied to the operation and function of core parts of the electricity sector. While a handful of industrial companies were able to negotiate direct supply contracts with state-owned and -controlled generation and transmission, electricity pricing and investment decisions had fallen within the purview of government – subject to any lobbying pressures that electricity supply authorities (ESAs) or these other industrial users were collectively or individually able to bring to bear, or subject to broader political considerations (such as containing inflation or influencing economic growth). An independent centralised electricity market was not a realistic prospect under such arrangements. The Minister of Energy would announce increases in the electricity Bulk

Supply Tariff (BST), bundling energy and transmission charges, at the annual ESA industry conference. That electricity prices under centralised control can be volatile – and exhibit major “step” jumps that belatedly reflect changed circumstances of all sorts than usefully presage supply and demand imbalances – is amply demonstrated in Figure 8.2.



Source: Wholesale Electricity Market Development Group (1994).

Within government a degree of decentralised operation and control of the electricity system along broadly geographic lines persisted for a time, but centralisation continued with the formation of the Electricity Division of the Ministry of Energy in the 1970s. Throughout this period control of the sector lay with a government minister who, under the Electricity Act 1968 (as amended), was authorised to “acquire, construct, operate, and maintain, any works for the generation of electricity, and generally to carry on the business in all its branches of the sale and supply of electricity”. Furthermore that Act prohibited any party from supplying electricity, constructing or using electric lines, or generating electricity using water except as authorised by the Minister on whatever terms he saw fit.<sup>1</sup> Electricity prices under this legislation were set to ensure recovery of the costs of running and maintaining the system, but not all capital costs (i.e. the system was not self-sustaining).

<sup>1</sup> In the case of hydro generation such terms specifically included provision for a water rental set by taking account the cost of alternative sources of energy, in effect a de facto market price of water. As discussed in Chapter 6, rising wholesale electricity prices when hydro storage levels are falling provide a contemporary proxy for such a price.

## BOX 8.1

## Ministry of Energy under the Electricity Act 1968

**An Act to consolidate and amend certain enactments relating to the generation and sale of electricity . . .****Principal functions of the Ministry of Energy:**

- 1) to initiate, organise, co-ordinate, continue and maintain the production, transmission, and supply of electricity;
- 2) to encourage the development and improvement of systems of supply of electricity;
- 3) to seek to ensure standards of safety, efficiency, and economy of operation in respect of the production, transmission, and supply of electricity;
- 4) to carry out surveys in respect of the supply and use of electricity;
- 5) to advise government departments on all matters affecting electricity;
- 6) to carry out such functions in respect of and incidental to the production, transmission, and supply of electricity as the Minister may from time to time direct.

**Ministry of Energy to exercise its functions and duties as fully and adequately as may be necessary to satisfy the need for electricity within New Zealand and carry out the purposes of the Act, including 7(2):**

- 1) undertake or provide for: (i) the generation, purchase, or exchange of electricity; (ii) the distribution of electricity in bulk to electricity supply authorities; (iii) the direct supply of electricity to large consumers; (iv) the retail supply of electricity to consumers;
- 2) arrange or execute: (i) a continuous programme of works providing adequate supplies of electricity; (ii) the supply of electricity at the lowest practicable cost;
- 3) promote: (i) the use of economical methods of generating, transmitting, and distributing electricity; . . . (v) the simplification of methods of charge for supplies of electricity; (vi) the avoidance of wide variations in charge for supplies of electricity;
- 4) regulate, control, allocate, and (wherever in the opinion of the [chief executive] it is necessary) restrict or prevent the use of electricity;
- 5) undertake or promote measures to achieve greater economy and efficiency in the use of electricity as a means of reducing the future rates of growth of electricity requirements.

Source: Electricity Act 1968 (as amended to 1980).

This state of affairs continued until the dissolution of the Ministry and creation of the Electricity Corporation of New Zealand (ECNZ) as a stand-alone commercial and ostensibly independent state-owned enterprise (SOE) in 1987 under the State Owned Enterprises Act 1986. While operationally this innovation represented a measure of decentralisation by attenuating the hitherto direct and overt political influence over the sector, it did not and could not remove the ongoing political incentive to remain involved in the sector, and therefore resulted in a persistent tension between ECNZ and its government shareholders.<sup>2</sup>

Even with the separation of Transpower from ECNZ – functionally through the unbundling of transmission and wholesale energy charges in 1993, and legally by its creation as a stand-alone SOE in 1994 – the centralised model persisted in the form of state-owned monopolies. The pricing and investment policies of the now-separate generation and grid companies were the responsibility of their respective and ostensibly independent boards, and in each case no formal market mechanism for their determination or guidance were in place. Changes in each were a result of fiat or bilateral negotiation with industry representatives. While this situation changed for generation with the creation of the NZEM and break-up of ECNZ, it persists for transmission, even though Transpower's centralised decision-making powers regarding grid pricing and investment have now passed from it to the new Electricity Commission (more later).

In its earlier years the real price of electricity was significantly reduced by ECNZ, falling 12% in real terms in ECNZ's first four years of operation. As discussed in Chapter 5, however, when ECNZ attempted to raise prices in 1991 the limits imposed under the SOE Act 1986 on political influence over electricity pricing faced (and failed) their first test. While government did not formally force ECNZ to resile from its announced price increase, its response was such that the board of ECNZ recognised that it faced a critical political face-off, and elected to revise its proposal. In effect it accepted that pricing policy – and hence investment policy, which hinged on expected future returns – would require political sanction.<sup>3</sup>

It is interesting to note that even before this political show-down ECNZ held a view regarding long-term electricity prices that proved to be misplaced. As summarised and discussed in Chapter 5, in 1991 ECNZ predicted electricity price-ranges based on long-run marginal costs for various types of new generation that all exceeded actual market outcomes under the New Zealand Electricity Market (NZEM, which commenced full operations in October 1996). While this might be said to reflect the benefits of competing generation, which arose in 1996 with the first step in ECNZ's successive break-up, it should be noted that competition was predicted to produce prices at a level of such long-run marginal costs to support ongoing investment in generation. That ECNZ, as the then centralised controller of generation and transmission (and having the best

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<sup>2</sup> A detailed and engaging account of the history of these tensions is given in Chapter 16 of Martin (1998).

<sup>3</sup> See Martin (1998) and Fernyhough (1993).

## BOX 8.2

## Key Provisions and Principles of the SOE Act 1986

**An Act to promote improved performance in respect of government trading activities ...****Part I – Principles, including:**

- 1) The principal objective of every state enterprise is to operate as a successful business and, to this end, to be as profitable and efficient as comparable businesses that are not owned by the Crown . . .
- 2) All operating decisions of a state enterprise to be made by or pursuant to the authority of its board of directors in accordance with its statement of corporate intent (SCI, a document covering a range of matters adopted by the board after considering any comments by the relevant shareholding Ministers on its draft SCI).
- 3) Where the Crown wishes a state enterprise to provide goods or services to any persons the Crown and state enterprise are to contract for this with the Crown paying all or part of the price thereof.

**Shareholding Ministers may direct a state enterprise board on the kinds of matters covered in its SCI after consulting with the board and having regard to the Part I principles.**

**Set of principles for state-owned enterprises:**

- 1) Responsibility for non-commercial functions will be separated from major trading state-owned enterprises.
- 2) Managers of state-owned enterprises will be given a principal objective of running them as successful business enterprises.
- 3) Managers will be given responsibility for decisions on the use of inputs and on pricing and marketing of their output within the performance objectives agreed with Ministers so that managers can be held accountable to Ministers and Parliament for their results.
- 4) The advantages and disadvantages that state owned enterprises will have, including unnecessary barriers to competition, will be removed so that commercial criteria will provide a fair assessment of managerial performance.
- 5) Individual state-owned enterprises will be reconstituted on a case by case basis in a form appropriate for their commercial purposes under the guidance of Boards comprising, generally, members appointed from the private sector.

*Source:* State-Owned Enterprises Act 1986, and Statement to the House of Representatives, Hon R. O. Douglas, Minister of Finance, 12 December 1985, in David Butcher & Associates (2002).

possession of relevant production cost data), should significantly mis-estimate future electricity prices also highlights the pitfalls of centralised forecasting and presages the problem of centralised markets acting on a single view of the world.<sup>4</sup>

#### *Origins of the Wholesale Electricity Market*

Electricity pricing policy was once again political as well as centralised. Ironically, however, it was this episode that spawned the creation of the centralised but independent wholesale electricity market. Initially this involved little more than ECNZ posting a “spot price” for half-hourly electricity supply weekly in advance, which was relevant only to the extent that ESAs needed to make up any shortfall (or trade any surplus) in electricity purchased from ECNZ under long-term supply contracts. Additionally, however, it resulted in the industry-led development of a true wholesale electricity market, if only as a device for ECNZ to regain some measure of freedom from political involvement in its pricing (and hence investment) policy.<sup>5</sup>

While ECNZ remained the all-but-sole generator in New Zealand, it could not be expected that a true wholesale electricity market offering prices determined according to competitive processes could arise. However, with the break-up of ECNZ – initially by the spin-out of Contact Energy from ECNZ in 1996, and the company’s further break-up into Genesis, Meridian Energy and Mighty River Power in April 1999 – as well as the entry of new generators into the sector, electricity pricing policy was no longer centralised in the hands of ECNZ (or government). Competing state-owned generators now vied with each other and also with privately owned generation for business not covered by long-term supply contracts through an independent centralised market, the NZEM.

Wholesale electricity prices were now determined through the operation of this market, with the all-important market rules that governed the electricity price-setting process being determined multilaterally by industry participants and enforced separately by a Market Surveillance Committee independent of industry.<sup>6</sup> Although participation in the NZEM was voluntary, its industry-led formation was reflected in its usage, with 80% of energy produced passing through the new market.<sup>7</sup> The remaining

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<sup>4</sup> Market prices, by contrast, represent a means of aggregating diverse price expectations of multiple market participants, reflecting their private information and assessments (on which their actions will be based, resulting in a measure of self-fulfilling prophecy). As noted in *New Zealand Electricity Market (2001)*, it is possible for legitimately wide variations in such expectations, and so it is perhaps no surprise that centralised forecasting – particularly of variables determined by the actions of others based on their own assessments – might be so inaccurate. Decentralised price formation diversifies the risk of forecast errors.

<sup>5</sup> See Martin (1998) or Boshier and Gordon (1996). It also offered a hedge against ECNZ’s break-up, since it facilitated entry by competing new generation.

<sup>6</sup> See Arnold and Evans (2001). The separation of rule-making and enforcement roles avoids potential conflicts arising when regulators or others are responsible for both.

<sup>7</sup> While 80% of energy produced in New Zealand passes through the wholesale electricity market, much of this is hedged by industry participants – for example, through contracts for differences under which supply prices are effectively fixed at negotiated levels.

20% of energy supplied in New Zealand continued to be provided under bilateral contracts, with the industry once again agreeing among its own members rules for measuring and reconciling energy supplies and off-takes irrespective of whether they were traded bilaterally or through the market (MARIA).<sup>8</sup> These rules also facilitated customer switching between power companies. A further devolution of rule-making power occurred with the industry assuming responsibility from Transpower for setting common quality and security standards for operation of the grid (MACQS).<sup>9</sup>

### *An Unintended Consequence?*

Curiously, it can be argued that the ongoing political involvement in the New Zealand electricity sector over the course of the contemporary reforms itself led to an unintended further devolution of industry away from state control to self-determination. Momentum for this development was provided by the ongoing tension between government and SOEs created by the SOE Act 1986 – a tension inherent in the half-way house between private and public ownership. Ongoing state involvement remains dominant through the state’s ownership of transmission, most of generation, and now also most of energy retailing (a form of *de facto* nationalisation arising when state-owned generators formed in the 1999 split of ECNZ began a process of acquiring existing retailing operations and customer bases put into play after the 1998 legislation that required ownership separation of lines and energy businesses). But this involvement has, until recently, been moderated by the industry-led creation of the wholesale electricity market and the other initiatives regarding metering reconciliation and grid quality and supply security standards.

As discussed in Chapter 5, the Electricity Industry Inquiry in 2000 was commissioned to evaluate whether industry arrangements were adequately meeting government objectives, albeit without any clear indication that they were not. Without presenting a clear rationale the inquiry recommended the merging of existing industry self-governance arrangements – NZEM, MARIA and MACQS – and recommended industry be invited to achieve this and various other objectives. The broad nature of the governance structure was not one that followed the dictum of Occam’s Razor, in which compulsory governance is limited to that which was absolutely necessary to enable operation of the system. Given vagueness in the governance of state-owned entities and other factors mentioned in Chapter 5, it was never likely that industry would be able to implement the politically required governance, at least not in the provided timeframe, and so government threats to impose the required solutions in the absence of industry agreement can be argued to have simply foreshadowed a

<sup>8</sup> Metering and Reconciliation Information Agreement, created in 1994, setting metering and information standards so grid-wide electricity flows can be reconciled.

<sup>9</sup> Multilateral Agreement on Common Quality Standards, created in 1999, shifting responsibility for determining common quality and supply security standards to the industry, thereby allowing grid users collectively to determine price/security trade-offs and reducing the potential for Transpower to use supply quality as a means of exerting market power.

foregone conclusion. It is therefore little surprise that a new Electricity Commission was created by government, and on 1 March 2004 assumed responsibility for industry governance. Earlier attempts by industry to foster and preserve its independence have now been superseded.

## THE ROLE OF GOVERNANCE

### *What is Governance?*

Having its origins in the Latin for “steering a ship”,<sup>10</sup> the plain dictionary sense of the term “governance” refers to conducting the policy and affairs of a state, organisation or people, or otherwise to controlling or influencing.<sup>11</sup> In the context of individual companies it typically refers to “the structure through which the objectives of the company are set and the means of attaining those objectives and monitoring performance are determined”,<sup>12</sup> significant aspects of which are set out in companies law. With respect to state-owned enterprises (SOEs) in New Zealand, it also includes consideration of the particular mechanisms created under the SOE Act 1986 to place such enterprises on a stand-alone commercial footing, and so at arm’s length from political involvement in operational decisions.

### *When Governance is Relevant*

In contexts where conflicts of interest between parties do not naturally arise, questions of governance become irrelevant. For example, in owner-operated companies relying on internal funding there is little scope for the owner (or other financiers) to be rorted or otherwise disadvantaged by the operator. Similarly, where an industry comprises competitive operators not reliant on shared resources (such as a distribution network) or other industry-specific features such as a dedicated exchange for inputs or outputs, there is little need for rules to co-ordinate or otherwise govern the balance of cooperation and competition of that industry – apart from general laws such as those relating to commerce, employment and the environment.

Various industry characteristics can, however, give rise to issues of governance. They include requirements to coordinate shared resources (e.g. a grid), to agree or standardise industry arrangements (e.g. technology protocols), or to jointly undertake industry-specific investments that would otherwise be uneconomic or impossible to implement (e.g. research programmes).<sup>13</sup> Such characteristics give rise to questions about the basis on which these matters are addressed, and how that basis is monitored,

<sup>10</sup> Farrar (2001).

<sup>11</sup> *Concise Oxford Dictionary*.

<sup>12</sup> OECD (1999).

<sup>13</sup> The usual economic culprits in this regard are economies of scale, informational asymmetries, or “hold-up” or “free-riding” problems. See, for example, Evans and Quigley (1998).

enforced and modified. In this light it makes sense to ask what governance might mean for an electricity industry, sharing as it does an interconnected transmission and distribution network reliant on specific operating rules and standards, exchanging its outputs through a centralised market or via decentralised bilateral trades, and requiring information sharing to reconcile ephemeral supplies and demands. As discussed earlier, the physics and economics of electricity networks do indeed present particular interdependencies that complicate electricity industry governance, but this does not necessitate centralised control as a consequence.

### *Governance and Competition Laws*

Having said this, “industry governance” has been a relatively unfamiliar term in New Zealand over the past two decades. With the Commerce Act 1986 being the fundamental source of competition law and, until recently, relying on a general regulatory regime, direct government regulation of specific industries has been a waning force in industry governance. At the same time, attempts at industry coordination in New Zealand have risked falling foul of the Commerce Act 1986 – section 27 of which prohibits contracts, arrangements or understandings having the purpose or effect of substantially lessening competition in a market. Accordingly, to the extent that any given industry is governed or otherwise acts in a coordinated fashion, great care has been required to avoid the appearance or fact of anti-competitive behaviour (or unless there was explicit exemption from this provision, such as with dairy industry restructuring).

That the electricity industry in New Zealand has been successful in instigating and implementing industry-wide initiatives – NZEM, MARIA and MACQS – tends to suggest that it has collectively encouraged greater competition in the sector, or at least avoided a substantial lessening of competition. Such a feat is easily contrasted with a worldwide history containing industry-led endeavours designed to achieve the very reverse (not least in the US industry in the early 1900s – see Chapter 4). As such, the objectives of the contemporary reforms as expressed by their political instigators as far back as the 1980s would appear to have been embraced by the very parties subject to those reforms. Recent government moves, however, indicate that an alternative course is now to be pursued.

### *Early Governance in the Reformed Electricity Sector*

It is in this sense that electricity industry “governance” first derived its contemporary meaning. The rules of the wholesale electricity market (NZEM), agreements for metering and reconciling energy flows (MARIA), and the formation of common quality and security standards (MACQS) individually and collectively constitute governance arrangements. Being multilateral voluntary agreements by industry participants who will be bound by self-defined rules affecting key aspects (both centralised and decentralised) of the industry’s operation, they are examples of self-imposed regulation intended to satisfy industry, consumer and political aspirations for the sector while avoiding potential harms that might otherwise attract government intervention.

*New Electricity Commission*

Prior to the 2000 Electricity Industry Inquiry there was no natural inclination on the part of industry to merge the three industry governance arrangements, the voluntary NZEM, MARIA and MACQS. A start was made, on grounds of cost, but there was no natural fit in terms of voluntary-involuntary requirements to amalgamate NZEM and MARIA governance. Around 20% of electricity in New Zealand was being supplied by bilateral contracts, freely entered into, presumably by buyers and sellers content to trade outside of NZEM rules. But, as discussed in Chapter 5, the Inquiry and subsequent government moves, with or without making a case for merger, placed this reform on industry's agenda.

At the centre of this reform was the creation of an Electricity Commission charged with a wide range of industry responsibilities that overlapped with those of existing industry participants. In effect this Commission bears a striking resemblance to the Electricity Division of the Ministry of Energy, the body disestablished by the reform process begun in the 1980s. Government regards the industry as having inadequately responded to various policy and climatic challenges. It has concluded (perhaps despite history) that a politically determined and centrally controlled solution, in substance if not legal form, is the most appropriate model.<sup>14</sup>

It is from an inspection of the new Electricity Commission's roles that future electricity industry "governance" takes its definition. Specifically, the Commission is "to govern the electricity sector and to take primary responsibility for achieving the government's policy objectives for electricity".<sup>15</sup> While the government's overall objective for the electricity sector is not especially different from that of its predecessors, it is seeking a number of specific outcomes consistent with its overall objective – and these in at least one respect mark a material departure from past arrangements. Foremost is its desire that risks (including price risks) to security of supply are "properly and efficiently managed", as opposed to being left to industry to resolve, by the Commission being required to use reasonable endeavours to ensure a 1-in-60 dry-year supply security without a need for voluntary energy saving campaigns (as discussed in Chapter 6).

The government retains the goals of sustained downward pressure on electricity costs and prices, reduction of entry barriers to the sector, and signals to investors and consumers of the full costs of producing and transporting additional units of energy. However, its desire that the new supply security goal be achieved in a manner minimising undesirable distortions to the normal operations of the wholesale electricity market, and

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<sup>14</sup> In January 2004 the government reinforced this message, with the Minister of Energy commenting on proposed retail electricity price rises (as it happens, endorsing the increases); the media also reported that price controls would be considered if such price rises were to be repeated next year. Such comments relate to competitive energy retailers (i.e. not monopoly lines businesses), and to privately owned concerns as well as SOEs.

<sup>15</sup> Government Policy Statement on Electricity Governance, September 2003.

that investment incentives in the sector are maintained and do not discriminate between public and private investment, would appear to be an acknowledgement that its reform initiatives are likely to involve some important trade-offs (and indeed, conflicts).<sup>16</sup>

### *Governance Role Expanded to Management*

Governance, under the Electricity Commission, is now to cover matters as diverse as pricing and clearing functions, regulation, oversight, monitoring market participants, direct involvement in information gathering and provision of supply and demand, security of supply, the wholesale market, generation, transmission, distribution, and retailing. Under such headings are the need for specific arrangements such as setting minimum hydro levels for security of supply (formerly an operational decision of hydro generators subject to general environmental and resource management law), transmission investment and pricing (formerly the responsibility of Transpower), setting grid-security standards (formerly the industry's responsibility under MACQS) and lines company pricing options (formerly such companies' operational responsibility) with low fixed-charge plans being mandated. Moreover, under the 2001 Act every person involved in developing rules or standards applying to electricity industry participants was made accountable to the Commission and required to comply with objectives and outcomes set by the Minister of Energy. Governance thereby came to mean the centralised planning, management and administration of the electricity sector – not just the process whereby its rules for management and development were determined and implemented on behalf of its members.

### *Minister Has Effective Control*

Importantly, key operational decisions at the heart of industry progress are now centrally determined by the new Commission, consultation requirements notwithstanding.<sup>17</sup> More fundamentally, however, the Commission itself was to be a creature of the Minister of Energy.<sup>18</sup> Under the Electricity Amendment Act 2001 the Commission is to be appointed – or its members removed – by the Minister (Schedule 2A), not by industry. The Commission is accountable to the Minister (section 172U) – not industry. The Minister was not bound under the 2001 legislation by any of the Commission's recommendations (section 172Z) and could direct the Commission (section 172ZA). In short, if the Commission was not formally a proxy of the Minister of Energy, the risk was that in substance it would be.

<sup>16</sup> See Morrison & Co. (2003) for an elaboration of the conflicts arising under the reserve generation mechanism.

<sup>17</sup> Section 172Y of the Electricity Amendment Act 2001 requires the Commission to consult with persons whom it or the Minister of Energy considers are representative of the interests of persons likely to be affected by any proposed regulations, clearly affording either party significant discretion in its consultation choices and apparently side-stepping the usual right of parties affected by regulations to be heard and to seek judicial review where they are not.

<sup>18</sup> Indeed, there are even a number of matters the Minister of Energy may determine without reference to the Electricity Commission – see section 172F of the Electricity Amendment Act 2001.

### **Powers for Electricity Industry Regulations**

Section 172B (Low Fixed Charge Tariff Option for Domestic Consumers) – power to regulate for low fixed tariff option for domestic consumers.

Section 172C (Regulations for code on access for beneficiaries of customer and community trusts) – power to regulate to promote accountability of community and customer trusts to beneficiaries.

Section 172D (Electricity governance regulations for wholesale market and transmission of electricity) – power to regulate: for establishment and operation of wholesale electricity market, and to require participants in such markets to comply with provisions; to prescribe reasonable terms and conditions for grid connection, regulate grid expansions, replacements or upgrades and allocation of associated costs; setting grid quality and security standards; and grid pricing policy.

Section 172F (Other electricity governance regulations) – power to regulate re: complaints resolution system; prepayment meters; ability of consumers to choose preferred electricity retailer; transition arrangements for insolvent electricity retailers; connection of generation to distribution lines; hydro spill; hedge price disclosure; dispute resolution; and enforcement of electricity governance regulations.

Section 172H (Electricity governance rules) – Minister may make rules (subject to regulations) for all or any of the purposes for which an electricity governance regulation may be made.

### **Governance of Electricity Industry**

Section 172L – purpose is to enable establishment of Electricity Governance Board (EGB, i.e. Electricity Commission) that is to:

- 1) be responsible for developing recommendations on electricity governance regulations or rules that promote its principal objective (i.e. section 172N – to ensure that electricity is generated, conveyed, and supplied to all classes of consumers in an efficient, fair, reliable, and environmentally sustainable manner) and other functions (section 172O); and
- 2) ensure the accountability of electricity governance organisations (EGOs, i.e. any person involved in developing rules or standards applying to any industry participants).

## BOX 8.3 CONT'D

## ... Electricity Amendment Act 2001 – Key Elements

EGB must consult with persons that it or the Minister thinks are representative of the interests of persons likely to be substantially affected by proposed regulations (section 172Y), but is accountable to the Minister (172U; member and EGB duties set out in sections 172S and 172T respectively), who is not bound by the EGB's recommendations (section 172Z) and who may direct the EGB (section 172ZA).

Governor General may by Order in Council regulate (section 172ZE) for payment to Minister of levies from industry participants (section 172ZC).

Minister must set objectives and outcomes that EGOs are to pursue re industry governance and against which EGOs must report and be examined in accordance with (section 172ZK); EGOs must agree annual performance standards with the Minister (section 172ZL) and provide Minister with annual performance reports (section 172ZM).

New Schedule 2A inserted regarding EGB and EGB's board, including Minister's powers of appointment and removal of EGB members.

Source: Electricity Amendment Act 2001.

Lacking the independence of other major government bodies such as the Commerce Commission, at the very least the Commission will seek to operate closely with the Minister for fear of taking a mis-step, or face a constant need to second-guess what activities or proposals are likely to be acceptable to the Minister. Not only has the industry's operational independence been subsumed by the Electricity Commission, but the Commission's power effectively lies with the Minister, and that power itself is not as clearly circumscribed as is the case in other industries. It must be asked whether even the pre-1987 Electricity Division of the Ministry of Energy was as beholden to its Minister as the Electricity Commission appears to be. It remains to be seen whether the new arrangements will preserve a central role for the wholesale electricity market, or whether the market becomes a side-show to an industry significantly centrally planned (in substance if not form). Already new generation capacity is being used to constrain short-term wholesale electricity price rises. While much of the electricity system remains in state ownership, measures such as these clearly affect the operations and prospects of both these SOEs and private or community- or customer-owned companies.

#### *Price Controls Also Imposed*

A parallel development to the establishment of the Electricity Commission was the 2001 amendment of the Commerce Act 1986 to effectively activate price-control provisions latent in that Act and to make specific provision for the application of price

controls to electricity lines businesses and Transpower.<sup>19</sup> Under these provisions the Commerce Commission has promulgated price-control measures for lines companies and Transpower based on the CPI-X model common overseas as a means to address any issues of market power arising in these parts of the industry.

Pending the Electricity Commission's determination of its investment programme, Transpower was in December 2003 assigned a value for X of 1%, meaning its overall revenue for the next year is capped at the rate of consumer price inflation less 1%, while responsibility for its pricing methodology has also been taken from its board and assumed by the Electricity Commission. For lines companies, X has been set at either -1%, 0%, 1% or 2% depending on their assessed relative efficiency and profitability. While the Commerce Commission is formally and operationally independent of the Minister of Energy (and indeed of its own minister, the Minister of Commerce), the significant amendments recently made to the Commerce Act indicate that the relatively "light-handed" regulation of New Zealand's electricity sector, which characterised much of the previous 20 years of reforms, is a thing of the past. It now appears that the hand of government is firmly on all aspects of the sector.

### *Conflicting Roles*

To complicate matters further it would appear the new Electricity Commission will be assuming functions that have potential for inherent conflict: the Commission will be responsible for policy, regulation, monitoring, and pricing and investment decisions, as well as being a market participant in its own right. The potential for conflict would also appear to extend to other areas of government domain, including competition, insolvency, environmental, and consumer law. The Electricity Commission represents a shift in power within government, not to mention between industry and government.

### *Electricity and Gas Industries Bill 2003*

These relatively recent reforms, significant as they were, were rapidly re-reformed. Omnibus legislation was introduced into parliament in October 2003 (and enacted in October 2004), not only building on and in some cases amending the 2001 electricity reforms, but also extending similar reforms to the New Zealand gas industry.<sup>20</sup> The legislation amended the Electricity Act 1992 (and also the Electricity Amendment Act 2001), Electricity Industry Reform Act 1998, Commerce Act 1986, and Gas Act 1992 (including a new subpart providing for imposed industry governance by a new Energy Commission). Without a clear rationale being offered for doing so, New Zealand has moved towards the regulatory model adopted in England and Wales, under which the gas and electricity industries fall under the auspices of a combined regulator.

<sup>19</sup> Commerce Amendment Act 2001 and Commerce Amendment Act (No. 2) 2001 respectively.

<sup>20</sup> When the gas industry was warned – as the electricity industry had been previously – that the government expected it to make its self-governance arrangements conform with government policy or government would do so for it, one industry executive publicly asked what problem it was supposed to be fixing.

Significant provisions in the amending legislation included an extension of the definition of industry participant to include wholesale electricity purchasers (only retail customers are to remain outside of industry control), reserve generation provisions including powers to compel electricity supply and the terms of such supply, and a raft of other ministerial regulatory powers. These powers delve deeply into operational matters, providing for electricity-generation regulation and management of supply and price risks (including reserve fuel and capacity management, tendering of minimum volumes of supply and other hedge contracts, and information disclosures). Similarly, wholesale electricity purchasers can be compelled to maintain minimum levels of hedge coverage (which presumes sufficient contracts are available), and minimum levels of demand-side management and interruptible load (which suggests electricity consumers might be compelled to suffer supply interruptions beyond the simple ripple control of water-heating common before the reforms). Perhaps mindful that such interventions have the capacity to increase the risk of retailer failure, provision was also made to regulate for arrangements in the event of retailer insolvency.<sup>21</sup>

In some respects the amendments unwound some of the more problematic provisions already enacted in the 2001 legislation. Electricity Governance Organisations (former sections 172L, 172ZK, 172ZL, 172ZM), for example, are now not to be subject to ministerial objectives and outcomes, performance standards and reporting. The Minister of Energy is to be precluded from recommending regulations unless the Electricity Commission has first made a recommendation, and ministerial powers to amend the Commission's recommendations are to be limited. The Commission is no longer required to consult with the Minister of Energy before making recommendations, and the prohibition in the 2001 legislation on the courts finding a regulation to be invalid because of inadequate consultation has been removed (subject to a six-month grace period). These improvements to the governance of the Electricity Commission must be welcomed. However, the significant expansion of the Commission's regulatory powers again represents a further shift towards centralised planning and control of the New Zealand electricity sector.

### *Goal Posts Shifted*

The electricity industry "goal posts" have been significantly shifted. Until these recent reforms, government was clearly involved in setting the macro agenda for the electricity sector and not above legislating for changes where it saw intransigence or delay on the part of industry in achieving its objectives. While the impacts of such measures were largely borne by the New Zealand taxpayer as owners of affected SOEs, they were not confined to the public sector. Such interventions notwithstanding, industry proceeded with initiatives instigated at industry level on the understanding that its destiny remained fundamentally in its own hands.

<sup>21</sup> As argued in Chapter 3, vertically integrated gentailers are an efficient means of hedging wholesale electricity price risks. Enforcing minimum levels of contract tendering by generators has the potential to cause the de-integration of gentailers and create a possibly artificial rationale for independent retailers, who may well be at increased risk of failure.

With the recent reforms, however, it is not just the Electricity Commission that will find itself second-guessing the Minister of Energy. The most fundamental decisions affecting an interconnected electricity system – those relating to transmission pricing and investment – are now in the Commission’s hands. Since the Commission is accountable to the Minister, and not to industry, the prospects for decentralised-based investments and innovation are now changed. If the Commission levies industry to fund expansions there is the prospect that it does so too generously, encouraging over-investment at the expense of consumers but possibly to the benefit of Transpower (or even private investors). However, the risks to Transpower and any private grid investors, and to investors in generation reliant on transmission across the grid, now more tangibly extend to the risks of expropriation and potentially changeable political direction. Additionally, they face the direct and indirect costs of regulation and political influence in the sector.

While government has set out to encourage distributed generation by lines companies, which should at least partially skirt around constraints in the grid and risks to its future development, such measures in themselves cannot resolve ongoing issues of supply security. With key decision-making powers now being taken from industry and vested squarely in the hands of the Commission and the Minister, and important aspects of those parties’ likely conduct yet to be seen and subject to changing political imperatives, those with the best information (and who would otherwise be in the best position to bear the risks and costs of investments in the electricity sector) find themselves in a much less secure position.

Conversely, while the recent reforms might be predicted to favour taxpayer-funded over private investments in the sector (if only by default), they also present opportunities to private investors adept at gaming regulators, lobbying politicians and otherwise engaging in “rent-seeking” behaviour.<sup>22</sup> It has to be asked whether this represents a desirable shift in private-sector investment incentives in an industry said to require significant new transmission expenditures and around 150MW of new generation capacity each year to meet expected growth in demand.

The very real risk faced by government in taking a more direct and managerial-like control of the electricity industry’s evolution is that private capital might be harder to attract or retain in the industry should investors find the evolving environment unsatisfactory. That would leave taxpayers, as owners of SOEs, bearing the risks of the industry’s evolution. Alternatively, any industry failures arising on the Electricity Commission’s “watch”, such as power outages in future winter crises and the major transmission outage of January 2004 (see Chapter 6), are likely to be viewed as the responsibility of the Commission and, ultimately, government – not the responsibility of wider economic and natural forces.

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<sup>22</sup> Industry participants have already expressed fears that the Commission will be manipulated by politicians and lobbyists, undermining its independence (see “Fears for Independence of Electricity Watchdog”, *Dominion Post*, 27 August 2003). Ironically they too might enjoy the benefits of engaging in such manipulation, and in the face of competing lobbies may find they have to. Electricity industry gaming has a new outlet.

## TRANSMISSION INSECURITY – WHAT’S AT FAULT?

In late May 2004 the national grid operator Transpower announced that transmission capacity to the north of the South Island was no longer sufficient to meet peak winter demands, with the possibility of power cuts within mere days. Just six weeks earlier, in its annual report of 2002, it had forewarned of shortages – but not until winter 2005. At around the same time the Electricity Networks Association, representing 28 electricity lines businesses, was openly challenging aspects of Transpower’s proposed upgrades to the national grid. Both the new Electricity Commission and the Minister of Energy appeared to be caught flat-footed by Transpower’s announcement.

This one episode highlights two important facets of electricity industry arrangements in New Zealand. The first is that centralised state planning for new grid investment would appear to have failed to deliver grid security. The second is that there is now either confusion or potential conflict as to where responsibility lies for ensuring that grid capacity is sufficient to meet demand.

Criticism of New Zealand’s electricity reforms has typically focused on allegations of “market failure” and a lack of centralised coordination of generation and transmission operation and development. Such criticism is often associated with calls for a return to state-owned and centralised control of the electricity system.<sup>23</sup> Rarely, however, has such criticism been directed towards any real or perceived governance or administrative failure, either on the part of government or other centralised industry bodies (except perhaps the wholesale market). The potential transmission failures of winter 2004 present a stark counterpoint to such attitudes.

From the time Transpower was separated from state-owned generator ECNZ and set up as a stand-alone state-owned company in 1994, it remained responsible for grid security until the passage of the Electricity Amendment Act 2001. Throughout that time it was wholly owned and ultimately controlled by government, and was one of a few state-owned enterprises whose SOE Act characteristics were specifically changed from a relatively pure business focus. While Transpower advocated the creation of market-based financial transmission rights (see Chapter 2) as a means of improving signals and incentives for grid investment (potentially instigated by third parties), it was unable to do so and remained a centralised administrator determining when, where and how new grid investments would be undertaken. This was subject to the pricing allowed by the Commerce Commission that offered scant ability to fund investment in advance of demand. To the extent that the reforms have failed to deliver an appropriate level of grid security, the fact that the highly centralised and government-owned grid operator

<sup>23</sup> Indeed, Transpower itself welcomed the creation of the government’s Electricity Commission as a means of overcoming what it perceived as the failure of voluntary arrangements to resolve multilateral issues such as transmission pricing and common quality standards. It also sees the Commission as a means of improving its revenue security and investment incentives by enforcing payment for grid investments.

is contributing to grid insecurity cannot for one moment be decried as “market failure” – rather it is “government failure”, or perhaps “centralisation failure”.<sup>24</sup>

Indeed, while expansion of New Zealand’s grid is argued by many to be overdue (although the history of loss and constraint rentals illustrated in Figure 3.18 does not support this view), various factors have militated against any necessary investment. First, moves to pass responsibility for grid-security policy to grid users, combined with the timing, scale and location of new generation projects being in the hands of parties not related to Transpower, have left the company – as grid central planner lacking alternative market-based mechanisms – with important investment uncertainties beyond its control.

Second, as shown in Figure 3.39, Transpower has not since its separation from ECNZ, on average, earned a rate of return on its system assets commensurate with that on investments of comparable risk (as measured by its target required rate of return). If Transpower has been unable to earn a commercial return on its existing assets, it is no surprise that it has been unable to convince its government shareholders or public providers of the necessary capital that new investments can be commercially justified.

Finally, industry uncertainty generated since the government’s 2000 Electricity Industry Inquiry has been an important contributor to the current transmission difficulties. The Inquiry mooted a new “partnership” between Transpower and government, led to the major reforms in the 2001 Act, and presaged governance and grid-pricing and investment uncertainty in the sector that remains to be resolved. It might be argued, therefore, that Transpower has found itself a hapless pawn in a wider industry game being dictated by government.

As to the second facet of concern, the 2000 Electricity Industry Inquiry recommended that Transpower remain responsible for undertaking new grid investments, but the subsequent 2001 Electricity Amendment Act passed responsibility for overall industry responsibility to the new Electricity Commission (section 172L, and principal objective section 172N). The new Commission, furthermore, was empowered to regulate grid investments, determine the allocation of associated costs, set grid-security standards, and fix grid-pricing policy (section 172D; all outstanding as at May 2004). It is perhaps no surprise, therefore, that the chief executive of Transpower denied responsibility for the looming transmission shortages and pointed the finger of responsibility at the Commission.<sup>25</sup> It is also no surprise that Transpower’s 2004/05 SCI highlights regulatory uncertainty as potentially hampering the achievement of its corporate objectives.

<sup>24</sup> At least one commentator attributes the failure to the separation of generation and transmission in 1994 (see “Power Users in Line for New Jolt”, *Dominion Post*, 1 June 2004). If this is true, then once again this represents “government failure” (or, if preferred, “reform failure”), but it clearly cannot be described as “market failure”.

<sup>25</sup> “So Who Does Keep the Lights On?”, *Dominion Post*, 28 May 2004.

## BOX 8.4

## Transpower's Evolving Statements of Corporate Intent ...

Transpower's board is required to produce a statement of corporate intent (SCI) for each financial year (and two subsequent years) after consultation with its shareholding ministers. Excerpts from Transpower's SCIs follow.

**1994/95-1996/97**

As per the SOE Act 1986, Transpower's principal objective was to operate as a successful business and (*inter alia*) be as profitable and efficient as a comparable non-Crown-owned businesses. To assist with the fulfilment of that objective, Transpower was required to:

- 1) provide an efficient reliable and secure national grid at least practicable cost;
- 2) provide transmission services and grid access on transparent terms which (*inter alia*) reflect cost, facilitate efficient supply delivery and use of electricity and promote efficient use of its resources;
- 3) supply information to facilitate efficient investment decisions by both it and grid users; and
- 4) earn a commercially appropriate return having regard to its business risk.

**1997/98-2000/01**

In September 1997 government determined that industry should play a greater role in setting core grid quality requirements, and amended Transpower's SCI accordingly. The primacy of operating as a profitable and efficient business was now replaced with an overriding requirement for operational efficiency, and government's ability to influence Transpower's pricing policy was made more explicit. Within this revised framework, the amended SCI now required Transpower to continuously improve the efficiency of its transmission services by:

- 1) making its services contestable where possible and producing them at least cost;
- 2) producing services at a quality and quantity as agreed with customers, with customers making trade-offs between service level and price, and establishing processes and a contractual framework to facilitate the achievement of this and to govern system co-ordination and real-time electricity security; and
- 3) pricing services in accordance with government statements of electricity policy relating to electricity as issued from time to time under section 26 of the Commerce Act 1986 to the Commerce Commission.

*box continues ...*

**2001/02**

A "fair return to shareholders based on commercially appropriate principles" remained subsidiary to other objectives, which were expanded to include:

- 1) promoting the government's energy policy of electricity being delivered in an efficient, fair, reliable and environmentally sustainable manner to all classes of consumers;
- 2) promoting system enhancement and replacement;
- 3) reintroduction of a need for it to price transmission services to facilitate nationally efficient supply, delivery and use of electricity; and
- 4) continuously improve the efficiency of its services, but now by producing them at least overall cost while ensuring short term security of supply.

**2002/03**

The SCI was similar to 2001/02's, but introduced an element of ambiguity with an amended requirement for Transpower to earn a fair return "in delivering" its other objectives. It was no longer clear that these other objectives took precedence over that of earning a fair return.

**2003/04-2004/05**

These SCIs appear to make the achievement of 16 other goals as diverse as sustainability and staff retention at least as important as the principal objective of business success. They also reflect the creation of the Electricity Commission as industry's governing body and regulator.

Transpower's history is littered with a profusion of objectives and changing priorities. Its latest objectives expand beyond core operational requirements to incorporate a plethora of goals related to wider government policy. The importance of the grid to industry make-up and performance remains – but the achievement of its more fundamental objectives (e.g. promoting efficient transmission investment) is at risk of being frustrated by the pursuit of these other goals. Where conflicts in objectives arise both performance measurement and performance itself should be expected to suffer.

Source: Transpower annual reports (various years) and [www.transpower.co.nz](http://www.transpower.co.nz).

Curiously, despite the Commission being generally responsible for achieving its principal objective of (*inter alia*) ensuring the reliability of electricity supply, the chairman of the Commission was reported as denying responsibility for overall supply security, instead referring to the Commission's specific responsibility to ensure that there is sufficient reserve generation for dry winters.<sup>26</sup> Despite this denial the Minister of Energy described the Commission as being the solution to the transmission problem, stating that it had the power to "ensure upgrades were made when there was a need", and indicating that Transpower could seek a capital injection from its shareholding ministers if this was needed.<sup>27</sup> Clearly to the extent this was so, it was not yet working; nor is it likely to be for some time.

This chain of events betrays not only a confusion of responsibilities, but also an inflation of the Commission's ability to implement solutions. The substance of the 2001 Electricity Amendment Act is that Transpower has been left as mere owner of the grid, operating it under contestable contract (first to the New Zealand Electricity Market, now to the Electricity Commission), but with responsibility for grid investment and pricing now taken from it and passed to the Commission (a party with inferior knowledge about the grid, and a wider set of objectives to satisfy). While Transpower is to implement any required grid upgrades and bear the associated financial risks (which must sit uncomfortably with any ongoing requirement for Transpower to operate profitably), it is the Commission that ultimately decides what grid expansions can or cannot be undertaken. Important governance tensions would appear to remain between the 2001 Electricity Amendment Act and the 1986 SOE Act.

Furthermore, aside from its informational disadvantages, the Commission has no balance sheet of its own, and hence is constrained in its ability to see that required grid investments are identified and occur. At best it can seek to instruct Transpower to undertake any grid investment it considers necessary, but it is reliant on Transpower for the required implementation.<sup>28</sup> In short, the 2001 arrangements create a separation of roles and responsibilities that arguably exacerbate any difficulties in ensuring desirable grid investments are undertaken in a timely and efficient manner – for example, to ensure system security. Transpower bears the financial risks of poor investments determined by the Commission, and the Commission (and ultimately government) bears the risk of failing to ensure system security through a party it imperfectly controls. Decentralised grid-investment solutions appear to have been eschewed in favour of

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<sup>26</sup> *Ibid.*

<sup>27</sup> "Government Aware of Power Problem", *Dominion Post*, 2 June 2004.

<sup>28</sup> For Transpower to undertake grid upgrades it must first obtain the approval of its government shareholders, the Electricity Commission, the Commerce Commission, and owners of land on which new pylons are to be built, as well as consents from various regional councils under the Resource Management Act 1991. None of these decision layers can expedite the investment; they merely create delays and uncertainties, and impose constraints.

“divided centralisation”. In any case, grid capacity has proven itself inadequate in the context of a neutered Transpower – and this has occurred on the “watch” of the government’s new industry regulator, the Electricity Commission.

The fact that the Commission took the lead in creating arrangements to avoid transmission-related power cuts in winter 2004 says nothing about the benefits of centralised over decentralised decision-making.<sup>29</sup> Industry was able during both the 1992 and 2003 winter crises to create similar arrangements, despite government having assumed a role in the 2001 winter crisis (see Chapter 6). The fact that argument remains as to who (i.e. whether Transpower) should bear the cost of achieving required demand reductions highlights the degree of flux inherent in recent reforms. The prospect of the Commission seeking to determine whether Transpower was at fault for not implementing grid upgrades sooner illustrates how responsibilities will ultimately be determined when diffuse responsibilities and accountabilities arise under increasingly bureaucratic control of the industry.<sup>30</sup>

## CONCLUSION

With improvements in communications and control technologies, it is now harder than ever to argue that centralised control of the electricity system is a technical necessity. The existence of diverse, interconnected electric utilities and grids in Europe and the US provide ample demonstration of the feasibility of running such systems with an acceptable level of reliability (notable but exceedingly rare exceptions aside). The advantage of allowing such decentralisation is the encouragement of competition in electricity supply – in generation and transmission – in both the economic and intellectual senses. Investment risks have correspondingly been shouldered by private-industry participants instead of captive taxpayers and consumers.

New Zealand’s electricity reforms initially sought to replicate many of the decentralisation measures adopted or existing elsewhere. Control of the all-important grid has remained highly centralised throughout, however, as has state ownership of much of generation (which now also extends to energy retailing). While light-handed regulation was initially employed, and on the evidence in Chapter 3 not been glaringly unsuccessful, New Zealand has since 2001 rapidly embarked on a process of re-centralising electricity industry governance under state control. Indeed, where the 2001 reforms proved inadequate, they were quickly augmented – some would say inevitably so – by even greater powers to the new industry governing body, the Electricity Commission. Not only does that body lack the independence

<sup>29</sup> “Emergency Plan to Cut Blackout Risk”, *Dominion Post*, 5 June 2004.

<sup>30</sup> “Grid Upgrade Vital, says Transpower”, *Dominion Post*, 1 June 2004.

from its minister that comparable regulatory bodies would normally enjoy; it also faces the impossible task of delivering industry outcomes that cannot be expected under either centralised or decentralised industry control. The fact that it suffers informational disadvantages relative to those it is regulating merely worsens its position. The sustainability of this awkward half-way house – combining heavily centralised industry control, to the extent that the regulator involves itself in decisions of a managerial nature, with private electricity interests – must be questioned given the inevitable shocks it will face and the wide-ranging yet inadequate instruments it has for responding to such shocks.

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**APPENDIX 8.1 – INDUSTRY EVOLUTION, MARKETS, POLITICS,  
AND DE/CENTRALISATION**

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**INTRODUCTION**

This appendix provides background to discussions in Chapter 8. It touches on factors influencing industry evolution and the interface between politics and markets, and on the experience under centralised control in Eastern European countries. It concludes by noting the common mixture of centralisation and decentralisation commonly observed in typical “western” economic systems.

**INFLUENCES AFFECTING INDUSTRY EVOLUTION**

Industry evolution commonly involves the creation of structures or arrangements reflecting interests common to that industry’s members. The New Zealand banking sector, for example, was an early adopter of a centralised computer-based inter-bank clearinghouse developed as a cooperative venture. The agricultural sector has developed industry-research organisations whose research outcomes are intended to benefit the sector at large and not individual members of that sector. In the electricity sector a number of key developments have arisen in response to industry initiatives, as discussed further below, not least because the interconnected nature of the electricity system requires industry agreement as to matters as fundamental as the physical characteristics of the electricity flowing through its wires.

Government involvement in the evolution of industry must also be acknowledged. While New Zealand’s electricity system had its genesis in various private and local-government schemes, the national electricity system came about through, firstly, direct state involvement in developing large-scale hydro and other generation; and, secondly, through a transmission grid linking major generation projects with distant population centres. Without such central government involvement it can rightly be asked whether the grid would have been developed at all, or in a timely fashion. At the same time it might be asked whether the private sector would have had stronger incentives to develop the national grid if central government had not taken over the business of generation and constrained, through legislation, the ability of private parties to access the nation’s hydrological resources.

As with questions regarding the boundaries of the firm, the answers to questions such as these require a balancing of relative costs. It may be true that suppliers in an industry are sufficiently concentrated or coordinated that they enjoy market power at the expense of their customers, but regulation is not costless in its impact or perfect in effect. Hence

the costs to consumers of regulation must be weighed against the costs of inaction. It may also be true that industry is slow to produce desired innovations, but history would suggest that state provision of goods and services is typically less customer-responsive and even less likely to innovate. Where industry gives rise to undesirable externalities such as pollution, or over-exploitation, regulatory intervention is one solution, but so too is the creation of tradable private property rights (such as emissions or water rights) – and one must bear in mind that state-dominated economies are often worse polluters than market economies.<sup>31</sup> And while private-sector capital may be hard or expensive to raise for necessary infrastructure investments, taxpayer funds for such projects cannot be assumed to be somehow cheaper or their use costless. An important challenge is to ensure that any necessary state involvement in a sector simultaneously preserves the benefits of private-sector and market-based endeavour, and that any unnecessary involvement does not stifle private initiative. A fundamental question is whether an activity has intrinsic characteristics requiring centralised control, or whether private parties can be left to organise that activity themselves.

## INDUSTRIES, MARKETS AND POLITICS

Economic endeavours do not arise in a vacuum: at any point in time they depend upon and mould institutions that they require. They must be regarded as pieces in a socio-political jigsaw, and as such will not evolve in purely economic terms. Broader societal agendas such as industrial relations and environmental concerns inevitably interface with the operations of firms and industries. Certain industries are sometimes regarded as being of such national importance that they face either state ownership and control or other heavy direct regulation. Others find themselves subject to political interest whether or not they possess critical attributes requiring state intervention. Such industries find themselves unnecessarily subjected to political objectives that often overlap with economic objectives, but which sometimes also involve considerable trade-offs. All of these beg the question as to whether this is necessarily or desirably so, but in any event their effects on industry structure, function and evolution will be real.

At the heart of the politico-economic interface is the question of how private incentives are affected by political interventions. Where such interventions are transparent and certain, private parties are able to adapt their strategies to accommodate (or subvert) their intent. Where they are inconsistent or obscure, private parties face net costs in attempting to work within (or circumvent) the political constraints. In either case it would require a coincidence of private and governmental incentives and objectives for

<sup>31</sup> For example, Bleaney (1988) and Kornai (1992) record that energy consumption per capita, steel intensity and air pollution (measured as sulphur oxides per capita) were noticeably higher in socialist countries than in capitalist countries. Growth targets, a lack of resources for conservation, and the danger of losing future allocations of resources (where resource savings were made) contributed to some of the environmental deficits arising under socialism.

government interventions to be relatively costless. Otherwise it must be expected that private parties will bear costs from governmental intervention which in turn will affect the nature, extent and course of their endeavours.

That final point is worth further mention – the course of private endeavours in the presence of political interventions. When private parties understand the rules under which they operate and are confident that any unforeseen future rule changes will not be materially adverse, they enjoy an environment conducive to long-term planning and investment. For sectors requiring major investments in long-lived and irreversible investments for which payoffs accrue over many years, as is the case for the electricity sector, such security is an important determinant of whether private parties will undertake such investments. Where political interventions involve or create uncertainty, however, or directly diminish the returns expected from substantial long-term investments (e.g. through regulation, levies or overt or implied price control), this must be expected to act as a disincentive for private parties to place their capital at risk, with implications for long-run industry performance.

Additional subtleties arise in this regard. The first relates to the impact of threatened, as opposed to actual, government intervention. Where government adopts a stance of threatening industry with overt interventions should it fail to deliver on either its stated or unsaid agenda, industry must then engage in a “game” of either “doing unto itself that which the government has threatened to do” (calling the government’s bluff) or second-guessing what it must do in order to avoid imposed interventions.

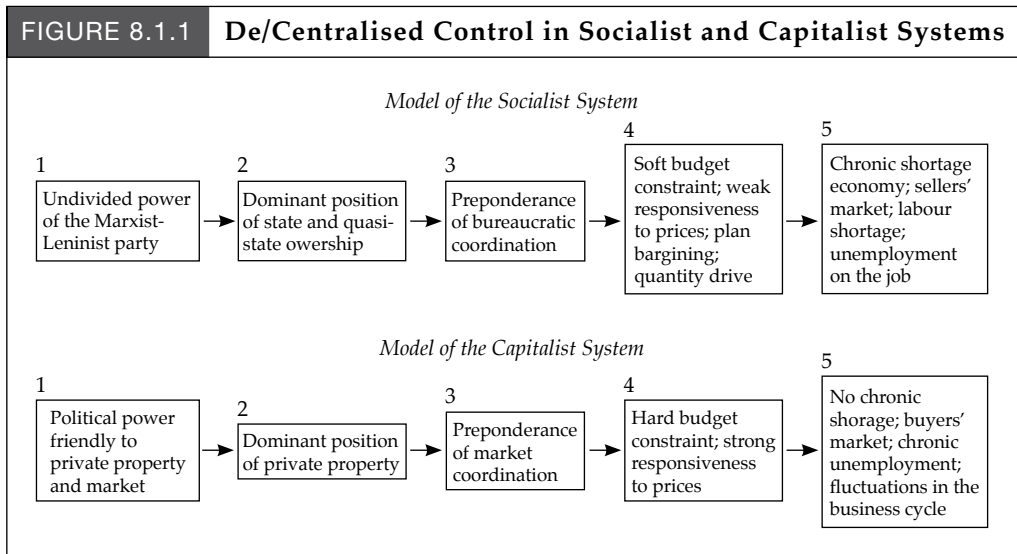
The second subtlety relates to the change in business focus that arises when government assumes explicit or implied responsibility for an area of activity in which private parties are, or wish to be, engaged. Where government interventions threaten the value of past private investments or materially affect likely returns from future investments, private parties no longer engage in an industry simply on its own terms. Instead they must keep a wary eye on government interventions, requiring potentially significant investments in monitoring and managing those risks, or an eye out for favourable interventions – so-called “rent-seeking” behaviour (see Chapter 9). When politicians specifically and materially intervene in private endeavour, a market for political influence can be the product.<sup>32</sup>

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<sup>32</sup> Recent experience in the New Zealand telecommunications sector is instructive, with rivals to the incumbent Telecom Corporation of New Zealand publicly appealing to the Minister of Telecommunications to disregard recommendations made by the independent Telecommunications Commissioner regarding access to Telecom’s local line network. When decision-making authority is centralised in the hands of government ministers who have discretion as to how and what they decide, lobbying is an essential outcome. See “Telecom Rivals Urge Government to Open Local Line Access”, *New Zealand Herald*, 16 March 2004.

## DECENTRALISED AND CENTRALISED CONTROL

Similar regard can be had to decision-making more generally. In particular, are there defining characteristics of a sphere of activity that dictate either centralised or decentralised control of that activity, or can it be left to its intrinsic forces to properly and usefully guide its conduct? The archetypal polar alternatives are often regarded as mercantilist Victorian England, and the USSR under Stalin. While each is an extreme example of decentralised and centralised control mechanisms respectively, they illustrate the hallmarks of either approach, as summarised in Figure 8.1.1.



Source: Kornai (2000).

Decentralised control relies on private parties to freely determine what, how and when to engage in a particular endeavour. Economic theorists as far back as Adam Smith predict that self-interest and social good need not be mutually exclusive, and it is the consumer benefit arising from increased competition that lies at the heart of electricity and other sector reforms around the world. Where the laissez-faire version of decentralised control resulted in deficiencies regarded as socially undesirable, such as child labour and environmental degradation, countries embracing the decentralised control model have typically adopted regulatory or property-rights-based solutions. To varying degrees these have preserved at least some of the benefits of decentralised control, particularly where they operate at a general rather than activity-specific level (e.g. minimum wage laws and tradable emissions permits, rather than occupation- or industry-specific regulation). Where they more directly and specifically influence the way in which the activity is pursued, greater centralisation of control results.

Centralised control instead places the authority, indeed the burden, of regulating an area of activity in the hands of one or more persons not themselves otherwise directly involved in that activity. It therefore involves an imposition on private endeavour, with the potential of quelling any private initiative involved. Conversely, it can arise where obstacles to private endeavour (such as a lack of defined property rights or inadequate expected returns) mean that private parties are unwilling or unable to undertake the activity of their own accord. In that case centralised control is not necessarily the only alternative, as solutions otherwise facilitating private endeavour (such as the creation of suitable property rights or subsidisation of desired activities) might also be possible. Just as centralised control can make things happen which otherwise might not (e.g. universal education), there are also activities so complex that centralised control becomes so complicated that it is either infeasible, or excessively costly. The danger is that centralised control is forced even in such circumstances, implying sub-optimal outcomes in each case.

The experience of Eastern European countries under communism (the most extreme central administration), and in making the transition from communism to more market-based and decentralised economies, provides useful evidence on the relative merits of the two approaches. Djankov and Murrell (2002) analyse evidence on enterprise restructuring in 27 countries from more than 100 empirical studies, finding (for example) that state ownership is less effective than all other ownership types (except worker ownership, which is worse), that enterprises in highly competitive sectors are significantly more productive than monopolies, and that privatisation to non-state/non-employee owners is associated with the largest restructuring gains. Similarly, Megginson and Netter (2001) survey the empirical literature on privatisations more generally, reflecting a shift away from centralised state control in favour of market-based mechanisms. They find gains such as 68% of firms enjoying increased profits (up 46% on average), 80% of firms paying higher dividends (up 113% on average), 82% of firms enjoying increased productivity (up 19% on average), and total employment slightly increased. Shleifer and Vishny (1997) utilise earlier evidence while surveying systems of corporate governance, arguing that even where centralised state control is typically regarded as necessary – for example, because of monopoly power, externalities, or distributional or environmental concerns – private, decentralised approaches are commonly superior. The evidence of such surveys suggests there is good reason to pursue private, decentralised approaches rather than centralised, state-based solutions; and even where the latter are indicated, great care is required.

Much private endeavour proceeds under even industry-specific regulation, such as regulated private electricity utilities in the US, although this arrangement arguably arose for anti-competitive reasons (see Chapter 4). Markets formed as a consequence of private initiative are often subject to regulatory oversight, such as the New Zealand stock exchange, whether as a means to control undesirable behaviour, or an attempt by incumbents to deter competition by new entrants. Hybrids can involve interventions

at the level of rules and institutions (e.g. basic laws covering the creation and operation of companies), but can extend as far as direct interventions such as imposed price caps (e.g. the general price freeze imposed in New Zealand in the early 1980s) or price floors (e.g. agricultural subsidies). They can also arise as a means of facilitating private endeavour, such as through legislation standardising weights and measures. Even communist China now, and Russia under Lenin, show the benefits of limited private endeavour under otherwise highly centralised state control.

