

Chapter 13

Network Industries: Electricity and Telecommunications

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13.1 Introduction

This chapter is a case study of the economic regulation of New Zealand's electricity and telecommunications industries.¹ Both industries play a crucial role in the economic and social well-being of New Zealanders. While many circumstances have affected the evolution and economic performances of the two industries over time, regulatory intervention by the state has been a prominent factor.

The focus of this chapter is to provide a brief discussion and assessment of the major contemporary regulatory trends and developments in the electricity and telecommunications industries dating from the time of the watershed economic and institutional reforms of the Fourth Labour Government in 1984. The principal aim is to identify and discuss some key issues² related to regulation in the two industries which will be analysed in this project.

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¹ More specifically, the chapter mainly considers regulation that is purported as being primarily concerned with promoting economic efficiency and that typically falls within the ambit of competition policy, law and regulation (thus, regulations dealing with, for instance, safety, measurement, and work standards are not covered in this paper). That being said, it is recognised that economic regulation may have other objectives unrelated to efficiency, such as addressing equity concerns by reallocating wealth distributions.

² I define a "key issue" as being an important subject of debate or a significant problem or challenge requiring an answer or solution.

13.1.1 **Why regulation is necessary**

The electricity and telecommunications sectors are characterised by their reliance on natural monopoly³ fixed networks or infrastructures.⁴ In the electricity industry, the natural monopoly fixed networks are the high-voltage transmission grid and the low-voltage distribution lines. In the telecommunications industry, they are the public switched telephone network and the legacy copper local loop that enables fixed-line telecommunications connection to most residential and business premises.

Natural monopolies “create rents that are fought over”.⁵ A natural monopoly’s market dominance may be strengthened if it vertically integrates into contestable upstream or downstream markets. Such industry structures are usually troublesome for policy-makers and regulators because of the potential effects on economic efficiency.⁶

Economic theory suggests that natural monopolies with significant market dominance may give rise to public policy concerns as they may have higher production costs, may charge higher prices and may innovate more slowly than firms subject to competitive pressures. In addition, in the absence of regulation, the owner of a natural monopoly facility may seek to vertically-integrate into an upstream or downstream market in order to restrict or eliminate competition in that market. This is achieved by charging high prices or, in other ways, hindering access to the natural monopoly service. In certain circumstances, this restriction of competition in the downstream market may permit the monopolist to raise its prices and, as a result, reduce national welfare.

Despite the market dominance of a network owner, the power relationship between it and consumers is not straightforward and one-directional, in favour of the network owner. Rather, it is reciprocal in the following way.⁷ First, consumers’ ability to wield some influence over the behaviour of a network exists because the owner has made a significant sunk cost (or irreversible) investment in the network. Secondly, given that consumers are directly connected to the network and are generally unable to switch (or bypass) to an alternative network means the owner has the ability to take advantage of consumers. Thirdly, whilst they are unable to avail themselves of

³ A natural monopoly arises where it is economically feasible to have only a single firm providing a good or service to the market because the incumbent firm is able to produce goods or services in a market at less total cost compared to any other combination of firms.

⁴ Hence, the two industries are often referred to as “network industries”, as are industries such as gas, water and rail.

⁵ David M Newbery *Privatization, Restructuring, and Regulation of Network Utilities* (The MIT Press, Cambridge (MA) and London, 1999) at 1.

⁶ Ministry of Commerce and The Treasury *Regulation of Access to Vertically-Integrated Natural Monopolies: A Discussion Paper* (1995) at 4.

⁷ See David M Newbery *Privatization, Restructuring, and Regulation of Network Utilities* (The MIT Press, Cambridge (MA) and London, 1999) at 1.

choice, consumers are large in number and, if necessary, are able to exploit a loud political voice. All of this signals an important regulatory role for the state to implement some form of control that endeavours to mediate the potentially exploitative (and politically explosive) relationship between a network owner and consumers.⁸

The problem facing investors and consumers is to devise an institution that will balance these interests and powers. The tension between the investor and consumer can be side-stepped by state ownership, which has the coercive power to finance the sunk capital without requiring the assurance of a future return from the utility. Alternatively, it can attempt to reconcile private ownership with consumers' political power through regulation. Either way, network utilities operate under terms set by the state.

The need to control the market power of natural monopoly networks in the electricity and telecommunications industries for welfare-enhancing reasons is a primary goal of state regulatory interventions. A further goal is to ensure that contestable sectors of the industries (such as generation, wholesaling and retailing in the electricity industry, and mobile and backhaul in the telecommunications industry) are carried out in an efficient way.

13.1.2 *The New Zealand context*

An important parameter for the project is that the study of regulation and regulatory reform should be approached from the New Zealand-specific context. This recognises that promulgating sensible and effective regulation in New Zealand requires ongoing attention to the country's changing idiosyncratic characteristics, including its history, institutions, culture and values.

The importance of this approach – the need in regulatory affairs to persistently recognise a society's distinctive characteristics – has been emphasised by Newbery with respect to the regulation of network industries.⁹

Heatley and Howell have noted that:¹⁰

To the extent that optimal regulation seeks to ameliorate the effects of market inefficiencies and thereby increase economic efficiency in a market, its effectiveness is itself influenced by technological change and the changes in activities within the market that are influenced by it. By extension, regulation itself must also constantly evolve in response to those changes. Regulation that is optimal under one set of technological

⁸ David M Newbery *Privatization, Restructuring, and Regulation of Network Utilities* (The MIT Press, Cambridge (MA) and London, 1999) at 1.

⁹ See David M Newbery *Privatization, Restructuring, and Regulation of Network Utilities* (The MIT Press, Cambridge (MA) and London, 1999) at 2.

¹⁰ Dave Heatley and Bronwyn Howell *Regulatory Implications of Structural Separation: Submission on Ministry of Economic Development 2010 Discussion Document* (1 October 2010) at 5.

circumstances and market interactions may not be optimal under a different set of circumstances and interactions. Furthermore, regulatory intervention that alters the interaction (evolution) in a market may itself also affect the nature of technological innovation and change. What may appear optimal in the narrow frame of a market in one time period may not be optimal when taken in a dynamic frame across the wider system incorporating all of technologies, markets and the regulatory policy environment. Sound regulatory policy must take the wider context into account with every specific intervention.

A theme discussed in this paper is the historical pattern of change in the regulation of the electricity and telecommunications sectors. This pattern, which is identical in the two industries, shows that the regulatory trajectory has transitioned from a focus on direct political intervention and ownership until the mid-1980s to a period of so-called “light-handed” regulation, with its emphasis on generic competition law, between the mid-1980s and the end of the last century, followed by a return to greater direct control from the early 2000s with the advent of industry-specific regulation, and then back to significant political intervention and direction akin to that experienced before the mid-1980s. This pattern of change may be associated with changing or competing political, economic, regulatory and technological contingencies.

The small size of New Zealand’s economy and population, and its low population density, pose special challenges for industry structures and regulation. A small economy implies, *inter alia*: a relatively higher cost of regulation on a per-capita and per-account basis; a small number of firms necessary to take advantage of economies of scale – notwithstanding that the cost of (and other barriers to) market entry may be low – resulting in monopoly or oligopoly market power; and a propensity for firms within an industry to vertically integrate across different functional markets or diversify themselves into proximate markets as ways of managing risk and exploiting economies of scope, thereby influencing the nature and extent of competition.

The small size of the economy, and therefore the inevitability of natural monopoly and highly-concentrated industries, has implications for how the performance of a regulatory regime in terms of effectiveness should be assessed.¹¹

Thus, the efficacy of a regulatory regime cannot be reliably measured by market share “competiveness” indicators alone. It must also be assessed in conjunction with other indicators as proxies for changes in static and dynamic efficiency, such as prices and availability of services, investment in and timing of service introduction, and consumer uptake. Moreover, the analysis should be undertaken in comparative rather than absolute terms, in respect of both historic performance in the same market, and

¹¹ Bronwyn Howell *A Pendulous Progression: New Zealand’s Telecommunications Regulation 1987–2007* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2007) at 32.

comparative performance against other countries where the regime differs.

Whilst scale is an important consideration when formulating competition policy or economic regulation, so are some other features of New Zealand. For instance, since the mid-1980s, the main ideological approach underpinning the New Zealand economy has been that a market economy presents the best option for achieving economic growth. This discourse is closely related to the fact that New Zealand is an open economy, with its economic performance heavily dependent on international trade.

In addition, New Zealand's attitude toward the rights of its citizens, in particular with respect to the ownership of property and their status as consumers, is also a fundamental consideration in the way that economic regulation should be designed. In the case of property rights, there is good evidence to indicate that consideration of such rights when regulating firms in both the electricity and telecommunications industries has not been at the forefront of the criteria used.¹² By comparison, the protection of consumer welfare appears to have been a paramount driver of competition or regulatory policy.

13.1.3 Structure of this chapter

The remainder of this chapter is ordered as follows. Paragraphs [13.2] and [13.3] provide an overview of the current industry structures, as well as the early industry and regulatory developments for electricity and telecommunications respectively. Paragraph [13.4] briefly describes the current regulatory regimes for electricity and telecommunications, looking at industry-specific regulation. Paragraph [13.5] identifies a number of key issues in the regulation of electricity and telecommunications. There are many interesting questions to be studied in this area. Unfortunately, they cannot all be pursued in this chapter. Accordingly, the section discusses three key issues relevant to both electricity and telecommunications regulation which provide fertile ground for in-depth economic, legal and policy analyses. These issues relate to regulatory change, regulatory uncertainty, and the relationship between regulation and property rights.

13.2 The electricity industry

13.2.1 Overview of current industry structure

The New Zealand electricity industry comprises five main functional market levels. These are the generation of electricity, the wholesaling of electricity, the transmission of electricity across a high-voltage network or grid, the

¹² See [13.5.3].

distribution of electricity across geographically-distinct low-voltage networks, and the retailing (supply) of electricity to industrial, commercial and residential consumers by electricity retailers.

The majority of generation and wholesaling of electricity is undertaken by five firms¹³. Three of these are state-owned enterprises.¹⁴ These three companies represent a substantial ownership interest in the electricity generation sector by the government; collectively they dominate the generation capacity and are responsible for producing the vast majority of the country's electricity.

The wholesale market comprises the generators (who offer electricity for sale) and buyers (electricity retailers and some large consumers) who submit bids to purchase electricity at transmission grid exit points. A feature of the electricity industry is that most generators are vertically integrated in the downstream electricity retail market through wholly-owned retailing businesses. These generators-retailers are commonly referred to as "gentailers." The five major generators are also the main electricity retailers.

Transpower New Zealand Limited, a state-owned enterprise under the SOE Act, owns New Zealand's high-voltage transmission network or grid. The transmission network transports large volumes of electricity from generators to more than 200 grid exit points nationwide which are connected to 30 lower-voltage local area (geographically-distinct) distribution networks owned by electricity lines businesses ("ELBs"). ELBs, in turn, transport the electricity delivered via the grid typically on behalf of retailers¹⁵ directly to consumers.¹⁶ There are 28 ELBs. Nearly all of these companies are owned by consumer trusts, local community trusts or local governments with the remainder either wholly or partially listed on the stock exchange or owned by international companies.

An important economic characteristic of each local distribution network is that it is generally considered to be a natural monopoly. Likewise, it would be uneconomic for New Zealand to have more than one transmission grid.

¹³ Genesis Power Limited, Meridian Energy Limited, Mighty River Power Limited, Contact Energy Limited, and Trustpower Limited.

¹⁴ State-Owned Enterprises (SOE) Act 1986. The three are Genesis Power Limited, Meridian Energy Limited and Mighty River Power Limited.

¹⁵ Retailers typically bill their customers for a bundled service, namely, the energy and lines (including transmission) components of their electricity supply.

¹⁶ The exception is some large consumers who purchase their electricity directly from the wholesale market. These consumers are connected to the transmission grid and therefore avoid the intermediary transportation step provided by local distribution networks, or ELBs. In addition, a small proportion of the electricity wholesale market is supplied by generators embedded in local distribution network areas. Since they are directly connected to a distribution network, these generators are able to bypass the transmission grid.

13.2.2 *Early industry and regulatory developments*

The current structure of the New Zealand electricity industry is the product of periodic restructuring over several decades, with the most recent spate of restructuring tracing back to the economic reform begun in the mid-1980s. Immediately before the economic reform, generation and transmission were under the central and exclusive control of a government department, the Ministry of Energy (through its Electricity Division). In addition, the Ministry was responsible for policy formulation and regulation in these two operational areas. Therefore, decisions concerning generation investment and wholesale electricity pricing were influenced by political considerations.

In 1985, the distribution and supply of electricity to consumers within local network areas was predominantly the responsibility of local governments and carried out by 61 electricity supply authorities (“ESAs”).¹⁷ ESAs were protected as statutory monopolies with the right to operate within franchised geographical areas, and predisposed to electoral influences. As a result, they were inefficient, choices in services offered were limited, and cross-subsidies were the norm.

As part of the new period of economic reform, the Labour Government announced its first decisions for restructuring the electricity industry in 1986. These included removing the government monopoly over generation by opening up the market to new entrants, changing the current structure of generation and transmission, and setting up an inter-departmental committee to address changes in the distribution and supply sectors.

The Electricity Corporation of New Zealand Limited (“ECNZ”) was established on 1 April 1987 as a commercially-oriented company, under the SOE Act, to take over the ownership and operation of generation and transmission assets from the Ministry of Energy. The policy advisory and regulatory functions were separated from the operational area, with the Ministry continuing to be responsible for these.¹⁸ As from 1 January 1988, the legal requirement that the Minister of Energy authorise all hydro-generation investment proposals was abolished. In April 1988, Transpower was set up as a wholly-owned subsidiary of ECNZ to own and operate the transmission grid, while ECNZ was to continue as a generator only.

¹⁷ Electricity Supply Authorities (“ESAs”) comprised 38 special purpose local authorities deriving their mandate from the Electric Power Board Act 1925 (“Boards”), 21 municipal electricity departments owned by territorial local authorities (“MEDs”), and two government-owned authorities (Southland Electric Power Supply and Chatham Islands Electricity System). Some large industrial consumers were supplied electricity directly by the government.

¹⁸ The Ministry of Energy was abolished with effect from December 1989. Its policy and regulatory responsibilities were largely taken over by a division within the Ministry of Commerce (now the Ministry of Economic Development).

The Electricity Task Force,¹⁹ established in December 1987 to advise the government on the structure and regulation of the electricity industry, made its recommendations in September 1989. The main recommendations included that:²⁰

- the ownership of ECNZ’s generation and transmission be separated;
- there be no large-scale break-up of generation;
- the limited break-up of generation and the establishment of a wholesale electricity market be studied further (but subject to this, ECNZ should be privatised);
- the ownership of the transmission grid be assumed by a “club” of generators and distributors;
- ESAs be corporatised and privatised;
- statutory franchise local distribution and supply areas and the obligation to supply be abolished; and
- the regulation of the electricity industry continue to be based on a “light-handed” regime, anchored by the Commerce Act 1986 and mandatory public information disclosure requirements, with industry-specific regulation to be a last resort if light-handed regulation fails.

In 1991, the Transpower Establishment Board²¹ recommended to the government that the ownership of Transpower be transferred to a “club” comprising ESAs and generators, and a process for separating Transpower from ECNZ.²² However, the government decided that “club” ownership would be too hard to implement and on 1 July 1994 Transpower was separated from ECNZ and established as an independent state-owned enterprise under the SOE Act. In order to apply greater pressure on Transpower’s performance, the Government restated the company’s objectives in September 1997, requiring it to focus more on efficiency improvements in the provision of transmission services, make its services contestable where possible and be responsive to customer-demanded services in a least-cost way. The government’s main purpose was to see transmission costs decline as a proportion of overall electricity costs on an ongoing basis.

Under the Energy Companies Act 1992, energy companies which were to operate on a commercial footing replaced ESAs from April 1993. While the Act provided that ownership of shares in municipal electricity departments

¹⁹ The Electricity Task Force was made up of members from government departments, the Electricity Corporation of New Zealand [ECNZ], and ESAs.

²⁰ Electricity Task Force *Structure, Regulation and Ownership of the Electricity Industry* (Electricity Task Force, Wellington, 1989).

²¹ The Transpower Establishment Board was set up by the government in July 1990 and tasked with considering how to establish Transpower as a corporate entity separate from ECNZ, including the appropriate form of ownership.

²² Transpower Establishment Board *The Separation of Trans Power: Report to the Minister of State-Owned Enterprises* (Transpower Establishment Board, Wellington, 1991).

("MEDs") would be held by the relevant territorial local authorities, the ownership allocation of shares relating to Boards was to be incorporated in share ownership plans following local consultation and included in establishment plans, with share allocation plans to be considered by trustees. In the end this process resulted in a variety of ownership structures, including: trust ownership (the most popular approach); majority private shareholdings in some cases; MEDs and a small number of Boards under local government ownership; and combinations of the above.

The first stage of introducing competition in the electricity retail market, by removing the energy companies' statutory monopoly rights to local distribution and electricity retailing (and the obligation to supply), was implemented on 1 April 1993 under the Electricity Act 1992. This initial step enabled retail competition for small consumers only.²³ The reason for staggering the introduction of retail competition was to prevent the possibility of small consumers incurring the costs of a cross-subsidy on the assumption that competition for larger consumers was likely to be more intense. The second stage implemented on 1 April 1994 opened up retail competition for all consumers.

The Electricity (Information Disclosure) Regulations came into force in July 1994. These regulations – consistent with the "light-handed" approach to regulation – made public disclosure of certain information by lines businesses compulsory. The aim was to make lines business activities more transparent and open to stakeholder scrutiny. Lines businesses had to disclose: separate audited financial statements for natural monopoly and potentially competitive businesses (and the methodologies used); prices and other terms and conditions of contracts; financial performance measures, based on a standardised valuation methodology; efficiency and reliability performance measures; costs and revenues by tariff category (and methodologies used); and line charges (and methodologies used).

In November 1995, the Government announced its decision to restructure the wholesale electricity market to make it more competitive. This included separating the dominant generator, ECNZ, into two competing state-owned enterprises – ECNZ and Contact Energy – and applying constraints on ECNZ until its market share decreased to below 45 per cent. Contact Energy began competing with ECNZ in February 1996, accounting for 22 per cent of total electricity generation.²⁴ In addition, the competitive wholesale electricity

²³ Consumption of less than 0.5 gigawatt hours per annum.

²⁴ Contact Energy was fully privatised in 1999. The government sold a 40 per cent cornerstone stake in the company to United States-based Edison Mission Energy in March 1999. Its remaining shares were sold in May 1999 in a public share float. By the time of its sale, Contact Energy was not only a significant player in generation; due to major reform of vertically-integrated energy companies in 1998 under the Electricity Industry Reform Act 1998 (see below), it was also a major electricity retailer.

market was launched in October 1996 in the form of a multilateral industry contract known as the New Zealand Electricity Market (“NZEM”).

In April 1998, the government signalled a suite of reforms affecting generation, distribution and retailing.²⁵ The central principle of the reforms was to ensure robust competition wherever possible and to implement effective regulatory controls over natural monopoly activities. The reforms were swiftly implemented, with several key outcomes:

- The Electricity Industry Reform Act (“EIRA”) was promulgated in July 1998. This required full ownership separation by vertically-integrated energy companies of their natural monopoly distribution network activities (lines businesses) from their generation and retail activities. Separation was expected to promote competition in generation and retailing and remove any opportunity for energy companies to cross-subsidise the competitive parts of their business from their captive distribution network activities.²⁶ Although EIRA provided for energy companies to effect full ownership separation as late as 31 December 2003, and for interim corporate separation by 1 April 1999, all companies had completed full ownership separation by 1 April 1999. Most companies became ELBs, retaining their lines businesses and choosing to sell off their generation and retailing businesses to existing generators.
- The threat of increased risk of price control of lines businesses if they fail to deliver best possible prices to consumers for distribution network services.
- As from 1 April 1999, the dominant generator ECNZ was separated into three competing state-owned enterprises – Genesis Power, Meridian Energy and Mighty River Power.
- The electricity industry introduced low-cost arrangements to enable consumers to easily switch between electricity retailers.
- The Electricity (Information Disclosure) Regulations 1999 came into force in April 1999, replacing the 1994 disclosure regulations. The new enhanced regulations strengthened the requirements for public information disclosure, including the methodology for calculating standardised asset values and government publication of better analysis of the disclosure information to enable improved assessments of the comparative performances of lines businesses.

²⁵ Ministry of Commerce *A Better Deal for Electricity Consumers: An Outline of the New Zealand Government’s Electricity Reform Package* (1998) available at www.med.govt.nz/templates/StandardSummary___12313.aspx (last accessed 29 September 2011).

²⁶ The proscribed cross-ownership provisions were later abated on two occasions to enable electricity lines businesses to own some generation plant and to sell the production. The Electricity Industry Reform Act 1998 was revoked by the Electricity Industry Act 2010, although some provisions have been retained in the new legislation.

13.3 The telecommunications industry

13.3.1 Overview of current industry structure

Telecommunications in New Zealand is mainly provided over fixed-line and mobile networks.²⁷ The fixed network is made up of fibre and copper lines connecting premises throughout New Zealand.²⁸ It is typically categorised into three parts: the local access network (which includes the copper local loop),²⁹ the regional backhaul network and national backhaul.³⁰

The local access network is the part of the network that connects an end-user's premises to the nearest exchange. Traffic then aggregates within regions, and the greatest aggregation occurs along major national trunk lines. The local access network is a bottleneck asset operated by Chorus – Telecom's network arm. As each end-user premises will typically only have one copper line feeding into the network, it is usually uneconomic for competitors to lay their own lines and so instead they seek access to Telecom's local access network.³¹ As traffic aggregates it becomes more economic to invest in laying a line and a number of operators have built their own fibre network along major routes within New Zealand.

The Public Switched Telephone Network ("PSTN") is an analogue voice calling network made up of exchanges and machines that enable services to be provided across copper and fibre lines. Telecom Wholesale provides PSTN services to access seekers which enables them to resell the Telecom service as their own. Alternatively, access seekers are able to bypass Telecom Wholesale and rent the bottleneck copper lines directly from Chorus. The access seeker would then install their own equipment in exchanges or cabinets that emulates the PSTN and provide services (wholesale or retail) over Chorus' lines themselves. This is referred to as "unbundling" or taking the unbundled copper local loop service ("UCLL service"). Unbundling is not economic in all areas.

Broadband is provided over the same copper and fibre lines in a similar manner, although using different activating equipment.

The Telecommunications Act 2001 requires (among other things) Telecom to provide access to its local access network, regional backhaul network and PSTN.

²⁷ These networks are supplemented by wireless and satellite networks.

²⁸ It also consists of associated equipment such as ducts, poles, buildings and other equipment.

²⁹ The copper local loop is the copper running from the end-user's premises to the nearest exchange, cabinet or equivalent facility. The term "local access network" incorporates a line that connects a cabinet to an exchange.

³⁰ At a general level, regional backhaul refers to the links between provincial exchanges and major exchanges, and national backhaul refers to the links between major exchanges.

³¹ TelstraClear owns its own local access network in parts of Wellington and Christchurch, providing its own cable to the end-user's premises.

A key aspect of the telecommunications industry is interconnection: for example, a TelstraClear customer in Christchurch needs to be able to call a Telecom landline in Napier. Therefore, network operators enter interconnection agreements with each other where they will hand-over a communication from their own network³² to a competitor network, and accept competitor traffic destined for their own customers. A communication can be handed over between operators at any point where two networks interconnect and could potentially pass across a number of different networks in order to reach its destination.³³

13.3.2 Early industry and regulatory developments

Before the economic reform of the mid-1980s, New Zealand's telecommunications industry, like its electricity counterpart, was strongly characterised by state ownership and political control. The New Zealand Post Office, which also offered postal and banking services, was the statutory monopoly provider of public telecommunications services.

Comprehensive reform of telecommunications was initially undertaken during 1987–1989. Similar to the electricity industry, the central aim was to improve economic performance and provide consumer benefits through competition. As at 1 April 1987, the telecommunications operations of the New Zealand Post Office were absorbed into a new state-owned enterprise to form Telecom Corporation of New Zealand Limited (“Telecom”).³⁴ By April 1989 all regulatory barriers protecting Telecom from competition had been removed. And in 1990 the state relinquished its ownership involvement in the provision of telecommunications services following the full privatisation of Telecom.

Telecom has a high degree of market power due to its ownership of New Zealand's PSTN and the local access network. Given Telecom's market position, a condition of privatisation was its acceptance of the Kiwi Share

³² This is either their own physical cable, or unbundled cable they have rented from Chorus. Where a network operator is purely reselling a wholesale service, the wholesaler will enter interconnection agreements in relation to those services.

³³ For example, a call from a Vodafone customer in an area where Vodafone has unbundled would travel across the unbundled local access network to the local exchange, where it might be handed to Telecom Wholesale for regional backhaul, then onto FX Networks Limited for carriage along the North Island trunk, and finally onto TelstraClear to terminate with a TelstraClear customer in an area where TelstraClear has its own network to that end user's premises.

³⁴ The responsibility for regulatory and policy advisory functions was transferred to the Department of Trade and Industry. This later became the Ministry of Commerce (now the Ministry of Economic Development).

Obligation (“KSO”).³⁵ The KSO committed Telecom to offering: a local free-calling option to all residential customers (the “free local calling” obligation); not increasing the price of residential telephone rentals in real terms by ensuring that any increase in rentals does not exceed growth in the Consumer Price Index unless Telecom’s profits were unreasonably impaired (the “price cap” obligation); ensuring that rural residential rental prices were no higher than urban residential rentals; and ensuring that ordinary residential telephone services continue to be as widely available as at the time the KSO came into force (the “universal service” obligation). This contractual arrangement between the state and Telecom represents a significant constraint on the degree of independence of Telecom’s commercial decision making.³⁶ From the late 1980s until 2000, governmental oversight of competition in the telecommunications industry was, as with the electricity industry, dictated by the requirements of the “light-handed” approach to regulation. The Commerce Act, mandatory information disclosure requirements and the courts were pivotal for the regulation of the telecommunications industry during this period.

This was a time of active development and rivalry amongst competitors. New entry to challenge the incumbent provider was swift. In 1991 Clear Corporation (“Clear”) began competing with Telecom, eventually offering local fixed-line infrastructure and services to businesses in most cities, as well as becoming a significant player in the markets for domestic and international long-distance calling. Also in 1991, Saturn Communications provided telephone and television services to customers on the Kapiti Coast through fibre-optic cable. In 1996 Telstra Corporation, the Australian state-owned telecommunications provider, established operations in New Zealand via its subsidiary, Telstra New Zealand. In 1999 Telstra New Zealand acquired Saturn and in 2001 it acquired Clear, establishing TelstraClear. In the mobile telephony market, Telecom, which had offered a mobile service since 1987, was joined in competition by BellSouth in 1992.³⁷ Also, New Zealand witnessed the growth of the commercialised internet from 1996.

This new era of competition, however, was to prove particularly litigious, with the relationship between Telecom and Clear especially acrimonious and a major test for the efficacy of a light-handed regulatory approach in telecommunications. Most notably, the consequences of a drawn-out court case involving these two companies over an interconnection dispute – lasting

³⁵ Following the Ministerial Inquiry into Telecommunications conducted in 2000 and the passing of the Telecommunications Act 2001, the KSO became the Telecommunications Service Order or TSO.

³⁶ It should be noted that the Kiwi Share Obligation (KSO), as a form of regulation over Telecom’s business, was not introduced to enhance economic efficiency, but to meet social and political objectives as a quid pro quo for Telecom’s privatisation.

³⁷ Bellsouth was acquired by Vodafone in 1998 to form Vodafone New Zealand, which is now Telecom’s biggest competitor in the mobile telephony market.

from 1991 to 1994, and reaching the Privy Council (at the time New Zealand's final appellate court) – has been suggested as being the main reason for accusations that light-handed regulation in telecommunications was a “failure” and for providing the impetus for the significant regulatory reforms that ensued.³⁸

Under the threat of regulatory action by the Minister, Telecom and Clear finally settled their dispute over interconnection in March 1996 by signing a five-year interconnection agreement. In June 1996, the government endorsed its ongoing commitment to light-handed regulation of telecommunications and made clear it expected interconnection to be provided on terms that enhance efficiency and provide the benefits of competition to consumers. These two events instilled a higher degree of certainty into the industry, which encouraged a number of new entrants to enter into interconnection agreements with Telecom during the next two years.

Notwithstanding the apparent progress, by August 1996 a new legal confrontation between Telecom and Clear was looming. The new dispute related to Clear wanting a variation to its interconnection agreement with Telecom because of pressure mounting on it due to Telecom's offering to residential customers of unlimited national calling for a fixed price. Telecom refused Clear's request for a variation. This in turn led to Clear refusing to pay the full amount of interconnection revenues due to Telecom, starting from February 1997. According to Howell, the effect of this new litigation and the judicial rulings was to return the telecommunications industry back to state of uncertainty and, in turn, disincentivise Telecom from committing to new capital investments, with detrimental consequences for dynamic efficiency.³⁹

³⁸ See, for example, Bronwyn Howell *A Pendulous Progression: New Zealand's Telecommunications Regulation 1987–2007* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2007) at 17 and 19. In brief, Clear claimed that Telecom was using its dominant position, in contravention of s 36 of the Commerce Act 1986, to deny it an acceptable interconnection agreement which would allow Clear to have access to Telecom's network and thus enable it to provide a local-calling service. The nub of the litigation was about the price Telecom wanted to charge Clear for interconnection. In particular, Telecom's price was based on opportunity cost and included the recovery of the costs of the KSO, a social obligation imposed on Telecom by the government. Clear, on the other hand, argued that Telecom's price was not cost-based and therefore incorporated monopoly rents. This historic case was eventually won by Telecom after the ruling in favour of Clear in the Court of Appeal was overturned by the Privy Council. See *Clear Communications Ltd v Telecom Corporation of New Zealand Ltd* (1992) 5 TCLR 166 (HC); *Clear Communications Ltd v Telecom Corporation of New Zealand Ltd* (1993) 5 TCLR 413 (CA); *Telecom Corporation of New Zealand Ltd v Clear Communications Ltd* [1995] 1 NZLR 385, (1994) 5 NZBLC 103,552 (PC). For a brief account of the litigation, see Bronwyn Howell *A Pendulous Progression: New Zealand's Telecommunications Regulation 1987–2007* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2007) at 18–19.

³⁹ Bronwyn Howell *A Pendulous Progression: New Zealand's Telecommunications Regulation 1987–2007* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2007) at 24–25.

As a result, the sensibility of “light-handed” regulation was once again brought into question.

In the event, the legal dispute has never proceeded to a substantive determination of whether Telecom had applied market power in offering fixed-price long-distance calling. Clear did not follow through with its Commerce Act proceedings and its interconnection agreement with Telecom lasted the full term to 2001. The pivotal event that affected the course of the litigation was the emergence of the internet and the commercial implications of this new technology for the two rivals negated the need for Clear to pursue its action. In short, the prevailing interconnection agreement coupled with the pattern of internet traffic generated a significant cash flow advantage for Clear (and other non-incumbent network providers), while threatening the financial viability of Telecom. Telecom’s strategic response in September 1999 to this threat (the so-called “0867 package”) led to the Commerce Commission announcing in August 2000 it would prosecute Telecom under s 36 of the Commerce Act.⁴⁰ Arguably, this litigation highlighted a weakness of light-handed regulation, in particular the tendency within the regulatory regime to pursue competition at the expense of economic efficiency through natural monopolies. In 2011, the case was resolved in the Supreme Court. The Supreme Court found in favour of Telecom.⁴¹

13.4 Regulatory structures

This section describes the current regulatory environments in which the electricity and telecommunications industries operate insofar as they are related to the area of competition law and regulation. As noted at the start of this chapter, such regulations are recognised as being principally concerned with economic efficiency, although it is recognised that other objectives, for instance equity and social considerations, may be relevant.

The section considers the main industry-specific regulations for the two industries. In the case of electricity, these are contained in Part 4 of the Commerce Act and in the Electricity Industry Act 2010.⁴² The electricity industry is subject to two industry-specific regulators: the Commerce Commission under the Commerce Act and the Electricity Authority (which replaced the former regulator, the Electricity Commission) under the Electricity

⁴⁰ For details of the circumstances that brought about the “0867 package” and subsequent prosecution, see Bronwyn Howell *A Pendulous Progression: New Zealand’s Telecommunications Regulation 1987–2007* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2007) at 25–29.

⁴¹ *Commerce Commission v Telecom Corporation of New Zealand Limited* [2010] NZSC 111, [2011] 1 NZLR 577. Also see Paul Scott “Taking a Wrong Turn? The Supreme Court and Section 36 of the Commerce Act” (2011) 17(3) NZBLQ 260.

⁴² Generic competition regulation that applies to these and other sectors of the economy is discussed in Paul Scott “Competition Law and Policy” in this volume (ch 3).

Industry Act. For telecommunications, the main industry-specific legislation is the Telecommunications Act 2001. The Act established a Telecommunications Commissioner as part of the Commerce Commission – the Commission is the industry-specific regulator with the Commissioner heading this function.

13.4.1 Electricity-specific regulation

Part 4 of the Commerce Act provides for “the regulation of the price and quality of goods or services in markets where there is little or no competition and little or no likelihood of a substantial increase in competition”.⁴³ This includes the regulation of “electricity lines services” (Transpower and ELBs) – the natural monopoly elements of the electricity industry. The purpose of Part 4 is to:⁴⁴

... promote the long-term benefit of consumers in markets ... by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—

- (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and
- (b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and
- (c) share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and
- (d) are limited in their ability to extract excessive profits.

There are two types of regulation applicable to electricity lines services:⁴⁵

- all suppliers of electricity lines services are subject to information disclosure regulation; and
- suppliers of electricity lines services that are not consumer-owned (around 12 of the 28 ELBs) are also subject to price-quality regulation (of which there are two types – default/customised price-quality regulation and individual price-quality regulation).

The Commerce Commission must develop input methodologies, which involve setting upfront regulatory methodologies, rules, processes, requirements and evaluation criteria for services, and for undertaking related inquiries.⁴⁶ The purpose of input methodologies is to promote certainty for suppliers and consumers in relation to the rules, requirements and processes

⁴³ Commerce Act 1986, s 52.

⁴⁴ Commerce Act 1986, s 52A(1). Where Part 4 applies, the purpose statement in s 52A applies in lieu of the purpose statement in s 1A (s 52A(2)).

⁴⁵ Commerce Act 1986, subpart 9 of Part 4.

⁴⁶ Commerce Act 1986, subpart 3 of Part 4.

applying to the regulation, or proposed regulation, of electricity lines services.⁴⁷

The purpose of the Electricity Industry Act is to “provide a framework for the regulation of the electricity industry”.⁴⁸ The Act:

- disestablished the Electricity Commission and replaced it with the Electricity Authority as an independent Crown entity on 1 November 2010 (the Commission was not an independent Crown entity but was governed by a Board appointed by and accountable to the Minister of Energy and Resources);
- required the three SOE generators (Genesis Energy, Meridian Energy and Mighty River Power) to exchange specific generation assets they own amongst themselves in order to facilitate more effective competition in the generation market; and
- permits ELBs to retail electricity and construct new thermal generation, subject to strict controls, in order to increase competition in the retail and generation markets.

The objective of the Electricity Authority is “to promote competition in, reliable supply by, and efficient operation of, the electricity industry for the long-term benefit of consumers”.⁴⁹ The Authority’s objectives and functions, however, are significantly less than those formerly under the Electricity Commission, including responsibility for approving new transmission investments, which now falls to the Commerce Commission.⁵⁰

13.4.2 Telecommunications-specific regulation

The Telecommunications Act states: “The main purpose of this Act is to regulate the supply of telecommunications services”.⁵¹

The Act regulates the supply of certain telecommunication services (designated services and specified services).⁵² The purpose of this regulation is to:⁵³

... promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand by regulating, and providing for the regulation of, the supply of certain telecommunications services between service providers.

⁴⁷ Commerce Act 1986, s 52R.

⁴⁸ Electricity Industry Act 2010, s 4.

⁴⁹ Electricity Industry Act 2010, s 52R.

⁵⁰ Commerce Act 1986, Part 4.

⁵¹ Telecommunications Act 2001, s 3(1).

⁵² Telecommunications Act 2001, Part 2 and schs 1–3.

⁵³ Telecommunications Act 2001, s 18(1).

The Act emphasises the importance of efficiencies in the Commerce Commission's determinations:⁵⁴

In determining whether or not, or the extent to which, any act or omission will result, or will be likely to result, in competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand, the efficiencies that will result, or will be likely to result, from that act or omission must be considered.

And the Act specifically provides for the consideration of dynamic efficiency in the Commerce Commission's determinations:⁵⁵

To avoid doubt, in determining whether or not, or the extent to which, competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand is promoted, consideration must be given to the incentives to innovate that exist for, and the risks faced by, investors in new telecommunications services that involve significant capital investment and that offer capabilities not available from established services.

The Act, in Part 2A, also provides for the operational separation of Telecom⁵⁶ and information disclosure requirements.⁵⁷

The main regulatory interventions since the Telecommunications Act include:

- regulated interconnection prices in relation to the fixed-line network implemented in 2001 on the basis that interconnection prices were too

⁵⁴ Telecommunications Act 2001, s 18(2).

⁵⁵ Telecommunications Act 2001, s 18(2)(A).

⁵⁶ Telecommunications Act, s 69A states:

The purposes of this Part are—

- to promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services in New Zealand; and
- to require transparency, non-discrimination, and equivalence of supply in relation to certain telecommunications services; and
- to facilitate efficient investment in telecommunications infrastructure and services.

⁵⁷ Telecommunications Act, Part 2B, the purpose of which is stated in s 69Y:

The purpose of this Part is to promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services in New Zealand by requiring that reliable and timely information prescribed by the Commission is made publicly available—

- by Telecom, so that a wide range of people are informed about the operation and behaviour of Telecom's network, wholesale, and retail business activities and services; and
- by access providers, including Telecom, so that a wide range of people are informed about the operation and behaviour of prescribed businesses that provide prescribed services, in order to monitor and facilitate compliance with prescribed applicable access principles.

- high (above cost) and that regulation would therefore lead to static efficiency;
- access regulation in relation to the fixed-line network at regulated prices also implemented in 2001 on the basis that increased competition to Telecom in downstream markets would improve static efficiency and incentivise product diversification (dynamic efficiency);
 - access to a bitstream (that is, an unbundled partial circuit) service, in lieu of full local loop unbundling (LLU), became a designated service in 2003 on the grounds that increased competition in the downstream broadband market would result in static and dynamic efficiency;
 - full LLU implemented in 2006; and
 - operational break-up of Telecom in 2007 into three business units to run its network (Chorus), wholesale (Telecom Wholesale) and retail (Telecom Retail) operations.

In addition to the regulatory regime provided by the Telecommunications Act, the KSO and the Telecommunications Service Obligations (“TSO” – conditions of Telecom’s privatisation) impose various obligations noted earlier.

A recent significant development is the announcement of two government broadband initiatives which seek to improve broadband speed and coverage in New Zealand: the rural broadband initiative (“RBI”) and the ultra-fast broadband initiative (“UFB”) which provides government funding to assist in providing fibre network and services. The Telecommunications (TSO, Broadband and Other Matters) Amendment Act 2011 introduced some significant regulatory changes to the telecommunications industry, largely driven by these broadband initiatives. As part of the UFB bid, Telecom has undertaken to structurally separate and is currently in the process of seeking shareholder approval. If Telecom does structurally separate more changes will come into force (for example, the repeal of the operational separation regime).

13.5 Key issues

This section discusses three key issues concerning the regulation of the electricity and telecommunications industries:

- regulatory change (at [13.5.1]);
- regulatory uncertainty (at [13.5.2]); and
- regulation and property rights (at [13.5.3]).

13.5.1 *Regulatory change*

The regulatory trajectory for both electricity and telecommunications over the last 25 years implies that “light-handed” regulation was a failed approach.

Light-handed regulation has been well and truly surpassed by industry-specific regulation, although the pathway in each industry has its own characteristics. It is open to question, however, whether more intrusive regulation was implemented in light of cogent evidence and taking into account the specific circumstances of New Zealand (such as its small size). In other words, what is the evidential basis to sustain the argument that light-handed regulation (including later attempts at self-regulation) was ineffective for both electricity and telecommunications, and that the introduction of more intrusive regulation (and subsequent changes thereto) would result in contributing in the longer term to either greater total or consumer welfare when compared to the counterfactual?

Although this is a discussion of regulatory change, it is worth considering that regulatory stability would seem to be a positive factor in the performance of regulated markets. This brings up the question of whether (and the extent to which) the frequent changes to the regulatory regimes for electricity and telecommunications over a relatively short timeframe have affected the economic performance of those industries. Have the costs of regulatory change (including opportunity costs) outweighed the benefits? Furthermore, how does New Zealand's regulatory stability (or lack thereof) compare internationally?

Frequent changes in both electricity and telecommunications have arguably affected regulatory stability. A detailed investigation of the possible reasons for and the nature of changes made may draw out important lessons for the future development and implementation of effective regulatory regimes, including the extent to which regulatory stability is significant for the performance of regulated firms and industries.⁵⁸

As discussed above, one of the reasons for frequent changes has been the politics of regulation in these two industries. Changes in regulation that are largely politically motivated may have no or minimal regard for good regulatory design and practice.⁵⁹ Politically-motivated regulation can be a risk

⁵⁸ Bronwyn Howell *A Pendulous Progression: New Zealand's Telecommunications Regulation 1987–2007* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2007) at 92. Howell's assessment of regulatory control of telecommunications could also be argued to be the general pattern of regulatory intervention seen in the electricity industry during the same timeframe.

⁵⁹ Bronwyn Howell has written prolifically in recent years on the significance of political economy in the regulatory control of telecommunications in New Zealand. In addition to Bronwyn Howell *A Pendulous Progression: New Zealand's Telecommunications Regulation 1987–2007* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2007), see, for example: Bronwyn Howell *From Competition to Regulation: New Zealand Telecommunications Sector Performance 1987–2007* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2008); Bronwyn Howell *The End or the Means? The Pursuit of Competition in Regulated Telecommunications Markets* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2008); Bronwyn Howell *Politics and the Pursuit of Efficiency in New Zealand's Telecommunications*

to democratic participation and processes,⁶⁰ including the related issues of transparency, accountability and the right to appeal unfavourable decisions.⁶¹ At the very least, politically-motivated change which disregards best practice regulation, as supported by established public policy processes, risks introducing undesirable incentives into the regulated market and, in turn, jeopardises the likelihood of optimal welfare outcomes.

An alternative, and perhaps more sanguine, view is that regulatory regimes are essentially experimental,⁶² that is, it is impossible to have foresight as to how effective a regulatory regime will turn out to be at the time it is designed and implemented.⁶³

It may well be that the assumptions and evidence on which the regime is based are robust, based on generally acceptable standards for the quality of policy advice. The regime might also work in the intended manner in most circumstance(s) and most of the time. However, we must also acknowledge that the environment in which regulation operates, and that it is intended to influence, is highly complex and often unstable. ... Over time societal expectations, technologies and markets all change, which means that regimes which may have worked at one point in time might not at another.

If it is accepted that regulatory regimes are experimental, and therefore prone to being transitory, then “one aim is to improve regulatory regimes through a process of continuous improvement ... [while] an equally important aim is to minimise the risk of regulatory failure, with its associated social and economic costs”.⁶⁴

Characterising regulation as experimental suggests a crucial role for ongoing monitoring and assessment of the regulation. to determine how it is

Sector 1987–2008 (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2009); Bronwyn Howell *Separating New Zealand’s Incumbent Provider: A Political Economy Analysis* (New Zealand Institute for the Study of Competition and Regulation Inc, Wellington, 2009); Bronwyn Howell *Politics and the Pursuit of Telecommunications Sector Efficiency in New Zealand* (2009) 6(2) *Jnl of Competition Law & Economics* 253.

⁶⁰ See Mark Bennett and Joel Colón-Ríos “Public Participation and Regulation” in this volume (ch 2).

⁶¹ See Dean Knight and Rayner Thwaites “Review and Appeal of Regulatory Decisions: The Tension between Supervision and Performance” in this volume (ch 8).

⁶² Peter Mumford “Best Practice Regulation: Setting Targets and Detecting Vulnerabilities” (2011) 7(3) *Policy Quarterly* 36 at 36.

⁶³ Peter Mumford “Best Practice Regulation: Setting Targets and Detecting Vulnerabilities” (2011) 7(3) *Policy Quarterly* 36 at 36–37. The idea that regulation is fundamentally by nature experimental is also discussed in Derek Gill “Regulatory Management in New Zealand: What, Why and How?” in this volume (ch 7).

⁶⁴ Peter Mumford “Best Practice Regulation: Setting Targets and Detecting Vulnerabilities” (2011) 7(3) *Policy Quarterly* 36 at 37.

working, and a willingness to make improvements where necessary.⁶⁵ Who should undertake such monitoring and how it should be done raises several questions. In particular, is independent monitoring justified because those with a vested interest in the regulation may not be able to impartially monitor themselves? If so, is specialist or generalist monitoring appropriate? As a starting point, neutral monitoring has most legitimacy, but it can be costly and so requires expertise, which in a country like New Zealand is often found in those who have a vested interest.

A third possible explanation for the regulatory changes that took place might fall somewhere in between. That is, the changes are partly linked to political economy and partly arise because of the experimental nature of regulatory regimes.

In stage 2 of this project, the framework for investigating the changes made to the regulatory regimes in electricity and telecommunications will consider the following questions:

- Were there policy problems that justified changes? And were those problems well identified?
- What options were considered, including individual solutions for each industry?
- What solution was chosen and against what criteria?
- Did the chosen solution address the perceived problem adequately?
- What were the effects of the regulatory change?

13.5.2 *Regulatory uncertainty*

To be sure, regulatory change issues of the kind just discussed introduce uncertainty into firms' decision-making processes. But there are also other sources of regulatory uncertainty for businesses. These include the exercise of regulatory discretion by regulators, for instance, in relation to input methodologies,⁶⁶ the possibility that regulators will be inconsistent in their determinations, and the risk of "regulatory capture" by powerful interest groups which detracts from optimal regulatory decision making. Regulated firms and opponents of regulation often argue that regulatory uncertainty has detrimental consequences for economic outcomes, including by discouraging or delaying welfare-enhancing investments, especially in markets highly

⁶⁵ Peter Mumford "Best Practice Regulation: Setting Targets and Detecting Vulnerabilities" (2011) 7(3) Policy Quarterly 36 at 37.

⁶⁶ Although in the case of electricity lines services regulation under Part 4 of the Commerce Act 1986, this risk has been mitigated somewhat by the Commerce Commission being required to establish ex ante methodologies, rules, processes, requirements and evaluation criteria.

reliant on technology. Moreover, faced by the prospect of regulation or regulatory change, a firm is likely to engage in a long and intensive period of lobbying to try and secure the best possible outcome. This disproportionate effort on regulatory affairs might distract the firm's management from other important matters, including decisions on future welfare-enhancing investments.

That being said, there are all sorts of uncertainties which firms must, and do, constantly deal with, not just regulatory ones. These include uncertainties of input costs (such as unexpected cost increases), material and labour supply, increasing competition from other firms, product/service demand fluctuations, the price of substitute goods, and exchange rate fluctuations. Confronted by such uncertainties, firms do not typically wither away and perish. They continue to go about their business routinely, including innovating and committing to investments.

There are at least three questions related to the issue of regulatory uncertainty which will be further investigated in stage 2 of this project. First, is regulatory uncertainty a "special" kind of business uncertainty (for example, because of the firm's degree of controllability vis-à-vis other types of uncertainty) that policy-makers and regulators should be aware of? Secondly, how does the nature and extent of regulatory uncertainty compare to other uncertainties faced by firms and investors? Thirdly, is the claim that regulatory uncertainty is a significant obstacle to innovation and capital investment (dynamic efficiency) backed up by empirical evidence?

13.5.3 *Regulation and property rights*

Property rights are a hotly debated topic in New Zealand's political and regulatory discourse.⁶⁷ There are significant instances in the past, in both electricity and telecommunications, where regulatory intervention may be argued to have resulted in the effective appropriation of property rights from shareholders by the state. In the case of electricity, a principal example was the controversial requirement for full ownership (structural) separation by energy companies of their natural monopoly distribution network activities (lines businesses) from their generation and retail activities, in accordance with the Electricity Industry Reform Act 1998.⁶⁸ The forced regulatory

⁶⁷ See Richard Boast and Neil Quigley "Regulatory Reform and Property Rights in New Zealand" (ch 5) for a discussion of what property is protected under New Zealand law, and see Russell Brown "Possibilities and Pitfalls of Comparative Analysis of Property Rights Protections, and the Canadian Regime of Legal Protection Against Takings" (ch 6) for a discussion of Canadian law and United States law of regulatory takings (both in this volume).

⁶⁸ As already noted, most companies became ELBs, retaining their lines businesses and choosing to sell off their generation and retailing businesses (see [13.2.2]).

unbundling of Telecom's local loop from its other businesses is another prime example that generated prolonged argument about property rights being encroached. But perhaps the most substantive example to date is the pending uncompensated structural separation of Telecom's network business, Chorus, into a completely independent company as a precondition of Telecom's participation in the Government's ultra-fast broadband initiative.

As discussed earlier (at [13.4.2]), the government recently announced it had concluded deals with Telecom and other parties in relation to the roll out of two broadband initiatives. On 20 April 2011, it announced agreements reached with Telecom and Vodafone for a \$285 million infrastructure roll out to provide extended and faster broadband coverage to rural areas over the following six years. Then, on 24 May, the government announced it had signed agreements with Telecom and Enable Networks Limited as part of its initiative to roll out ultra-fast broadband to 75 per cent of New Zealanders where they live, work and study over ten years. These two agreements are in addition to those previously negotiated with UltraFast Broadband Limited and Northpower Limited.⁶⁹ The government will be investing up to \$1.5 billion in open-access infrastructure to accelerate the ultra-fast broadband roll out. As part of a co-investment model, the private sector is expected to at least match the government's investment.

Significantly, for both broadband initiatives the government has set preconditions for private sector partners intended to promote competition. As part of the rural broadband initiatives, Telecom and Vodafone must supply their competitors with non-discriminatory access to rural broadband infrastructure funded by government. Under the deal, Telecom is required to structurally separate its network business, Chorus, into an independent company.⁷⁰ The aim of this is to limit Telecom's market power by virtue of it having vertically-integrated businesses (network/wholesale and retail), thus allowing broadband retailers to compete fairly in the on-selling of wholesale ultra-fast broadband.⁷¹

⁶⁹ Each of the government's four partners in the ultra-fast broadband initiative is responsible for roll outs in specific geographical areas. Telecom will build a fibre optic network in Auckland, the eastern and lower North Island and most of the South Island. Enable Networks, a Christchurch City Council wholly-owned company, will build an ultra-fast broadband network for Christchurch, Rangiora and surrounding areas. UltraFast Broadband Limited and Northpower will cover the remainder of urban New Zealand.

⁷⁰ As previously noted, Telecom is presently operationally separated into three business units – the network business (Chorus), the wholesale business (Telecom Wholesale) and the retail business (Telecom Retail). Under structural separation, Chorus and Telecom will have separate shares and be separately listed.

⁷¹ In addition to the ultra-fast broadband network, Chorus would continue to own the legacy fixed copper network. Telecom, in addition to undertaking retail functions, would continue to operate its mobile telephony networks. The local free calling and universal service obligations under the Telecommunication Service Obligation will be split appropriately between Chorus and Telecom.

Telecom has committed to structural separation under threat of an unattractive counterfactual whereby the government funds a rival entity to overbuild (and destroy the value of) Telecom's existing network investment. By comparison, the Australians, for example, have adopted a totally different (and some might think more sympathetic) attitude to the protection of property in their telecommunications industry. As part of their ultra-fast broadband initiative, the government-owned NBN Co (National Broadband Network Company) Limited⁷² will take over the infrastructure and customers of Telstra and Optus, two of the largest telecommunications companies in Australia. The acquisitions by NBN Co of the infrastructure and customers is subject to compensation. Total payments by NBN Co to Telstra over time are estimated to deliver approximately \$9 billion in June 2010 post-tax net present value to Telstra.⁷³ Total payments to Optus over time are estimated by Optus to deliver a post-tax net present value of approximately \$800 million.⁷⁴

Stage 2 of this project will assess to what extent is New Zealand's approach to property rights different to other similar jurisdictions and how might any differences be justified? For instance, why does Australia consider it necessary to pay (significant) compensation for the appropriation of property rights as a result of its ultra-fast broadband initiative, whereas under the same initiative in New Zealand, Telecom will receive no compensation for its enforced structural separation as a precondition of its participation in the initiative?

There are also important matters to consider at a practical level. For instance, is the perceived appropriation of property without any compensation likely to have a significant effect on business confidence and economic growth?

13.6 Conclusion

This chapter has looked at the regulatory regimes for the electricity and telecommunications industries insofar as the regimes are generally concerned with promoting economic efficiency. Such regulation is commonly located within the field of competition policy, law and regulation.

The electricity and telecommunications industries are significant contributors to New Zealand's way of life. Both underpin economic growth and the social well-being of New Zealanders. But economic regulation by the

⁷² NBN Co was established in April 2009 to design, build and operate a wholesale-only national high-speed broadband network for all Australians.

⁷³ See www.nbnco.com.au/assets/media-releases/2011/nbn-co-and-telstra-sign-binding-definitive-agreements-23-jun-11.pdf (last accessed 15 September 2011).

⁷⁴ See www.nbnco.com.au/assets/media-releases/2011/nbn-co-and-optus-sign-binding-agreement-23-jun-11.pdf (last accessed 15 September 2011).

state has been a major determinant of the way these industries have developed and performed.

The chapter identified and discussed three key issues considered as being likely to contribute most to the project through further research in stage 2. One of these – regulatory change – addresses one of the more (if not the most) noteworthy features of electricity and telecommunications regulation in New Zealand, namely, the constant reviews of and changes to the regulatory regimes that have been carried out during the last quarter century. This phenomenon raises a myriad of areas for research – including the merits of light-handed regulation versus industry-specific regulation, the role of political economy in regulation, and the ramifications associated with regulatory instability – which is significant to regulatory reform. The next two issues discussed – regulatory uncertainty and the relationship between regulation and property rights – also bring to the surface some interesting and important questions for regulatory reform.