# SHARING THE SUN

## Empowering small-scale renewable generation in Aotearoa

EDITED BY
Helen Viggers, Keriata Stuart
and Philippa Howden-Chapman

STEELE ROBERTS AOTEAROA

The editors would like to give particular thanks to our external reviewer, Professor Emeritus Ralph E. H. Sims CNZM CRSNZ of Massey University.

This work was supported by the MBIE Endeavour Programme, Public housing and urban regeneration: maximising wellbeing. (Grant ID:20476 UOOX2003).

ISBN 978-1-0670190-8-2

A catalogue record for this book is available from the National Library of New Zealand

Printed by YourBooks, Wellington
Production by Matthew Bartlett
Cover image: 'Korowai o te Ra' by Alan Wehipeihana
Set in Minion 10.5/13.3 & Gotham HTF

*Published in 2025 for the*
New Zealand Centre for Sustainable Cities
centred at University of Otago, Wellington
www.sustainablecities.org.nz


*by*

Steele Roberts Aotearoa
299 Manly Street, Paraparaumu Beach 5032, Aotearoa New Zealand
info@steeleroberts.co.nz • www.steeleroberts.co.nz

CHAPTER THREE

# Regulation in the Aotearoa New Zealand electricity market

Geoff Bertram

A spectre haunts the electricity industry in Aotearoa New Zealand: the spectre of actual 'competition for the market' intruding into the cosy and highly profitable oligopoly that has dominated the sector for the last four decades. All the powers of the status quo have entered into an unholy alliance to exorcise this spectre, but they are up against the march of technological progress, common sense and basic fairness.

In this chapter, I shall:

- review the history of those four decades;
- show how and why the design of the so-called 'electricity market' has brought energy poverty to masses of ordinary households for the benefit of a small set of investors, managers, large corporations, and the government (as the recipient of dividends and tax revenues);
- look at the new market dynamics unleashed by the appearance, for the first time, of genuine competitive market pressures that threaten those entrenched vested interests; and
- consider some options for change.

**I shall show how the design of the so-called 'electricity market' has brought energy poverty to masses of ordinary households**

The history of the electricity industry in Aotearoa New Zealand over the past half century is a microcosm of a great pendulum swing in the ever-evolving balance of the state versus the market. Mid-20th century Aotearoa New Zealand was a mixed economy constructed by and for the white settler community, with a cradle-to-grave welfare state, and a strong system of central and local government overseeing a public sector that supplied a wide range of the essential services underpinning the welfare state's high standard of living and low inequality.[1] That mixed economy had emerged from political reaction (within the worldwide white-Anglo societies of Europe, America and the settler

colonies) against the 19th-century ravages of unregulated private markets and political/social privilege. In its turn, the 20th century social-democratic equilibrium was overwhelmed around 1980 by a neoliberal reaction that attacked both the welfare state's egalitarian ethos and the mixed economy's large public sector. By the 2020s that neoliberal reaction has carried the pendulum far to the right, reviving in the process the old 19th-century ills of unregulated markets, inequality, and social decay, while at the same time the unchallenged supremacy of the white-settler state in the 20th century has given way to the return of confidence and agency to Māori. Not only the balance between state and economy, but the balance between Māori and the state, are now in contention.

**Not only the balance between state and economy, but the balance between Māori and the state, are now in contention**

Since embarking on a crusade against the New Zealand Electricity Department (NZED) and the local Electricity Supply Authorities in the 1980s and early 1990s, successive governments have been somewhat in the situation of Mary Shelley's fictional Dr Victor Frankenstein who, inspired to test a new scientific theory, created a predatory monster that he failed to control, which then wreaked havoc. The present electricity system is an artificial creation from an economic laboratory, not something that emerged from the voluntary engagement of willing participants in a mutually advantageous set of exchanges, as in the economics textbook story of a market. The new set of institutions and practices were the product of consultants and committees charged with imposing ostensibly 'market' features and financial engineering onto the supply chain of a product that is nothing like the baked beans confidently and repeatedly talked about by the first chair of Electricorp, John Fernyhough, in his attempts to present his business as just another competitive enterprise.

The special character of the electricity 'market' is exemplified by the way the wholesale spot price is set in a form of auction. In this mock-auction the various owners of generating plant make offers to supply specified quantities at offered prices. The offers are made not to buyers of electricity, but to a technocratic 'system operator' whose sole job is to rank the price offers in ascending order, up to the quantity that is expected to be demanded in each half-hour. There is none of the to-and-fro of a normal auction, and no actual buyer of electricity is in the room. Consumers are completely shut out of the process; their only role is to pay whatever turns out to be the price of the last tranche of offered supply that the system operator schedules to run in the half-hour in question. That 'marginal' price is then collected by all the other generators that had offered to supply at lower prices. As a recipe for enriching the owners of the low-cost hydro and geothermal plant inherited from the past eight decades of public investment by NZED, this can hardly be improved on – which is precisely why this 'market' design was chosen in the first place. It is ideally suited to manipulation by the big players, who have a shared interest in ensuring that high-cost plants like the Huntly thermal generator are eternally 'on the margin of the market' to keep the

price high. This is achieved by holding back investment in new capacity while making cut-price deals to recruit big electricity users like Tiwai Point smelter. Both of these tactics keep the market 'tight' and the price high. All players in this lucrative closed-shop arrangement loudly proclaim that the process is 'competitive'.

**All players in this lucrative closed-shop arrangement loudly proclaim that the process is 'competitive'**

To understand the path to creation of the monster, and the reasons why it is so dysfunctional, it helps to start by distinguishing two different ways in which a consumer can obtain and use electricity. One, which might be called 'bottom up' or 'standalone', is observed in everyday life when we use a torch to follow a path in the dark, or listen to a podcast on a battery-powered device, or ride a bicycle that has a pedal-powered generator to power its lights at night, or operate a petrol-powered generator to run the lights and audio equipment at a festival in an isolated rural location. Here the electrical system is self-contained with its own inbuilt settings for voltage and its own limits to supply capacity, and there are competitive markets for the required equipment: batteries, generators, fuel.

The other supply technology is large-scale and involves transmission and distribution of centrally generated electricity from large dams, geothermal and thermal power stations, held within tightly controlled quality limits (voltage, frequency and so on) by a planning hierarchy of physical and financial engineers using sophisticated communication and control equipment, with individual consumers locked into a single integrated system from which the uniform standardised supply is drawn. Operating this system effectively requires direct supervision and effective control exercised by some supreme authority standing outside any market, with the power to pick and choose which generation plants are to be operated at any time and how the transmission and distribution systems are to perform their tasks. The system is, in other words, planned and deliberately organised, in the sense of having a human agency directing the whole, as the conductor directs a symphony orchestra.

Both of these supply technologies are straightforward in principle and easily understood by the general public, which was certainly the case in Aotearoa New Zealand up to the 1980s.

**there is now a newcomer: affordable small- and medium-scale renewable generation technologies that can be installed by individual consumers or local community groups**

In between the small-scale local and the large-scale centralised technologies, there is now a newcomer: affordable small and medium-scale renewable generation technologies (solar panels, wind turbines and so on) that can be installed by individual consumers or local community groups to produce the same product as the big central system: AC electricity at 50 MHz, suitable to power fridges and washing machines and heat pumps, charge electric vehicles, run power tools. These distributed renewable installations can be operated stand-alone in isolation, but they can also be connected to, and integrated into, the centralised supply system. Their arrival is potentially disruptive not just in the sense of physically

displacing central supply, but more because they threaten the super-profits and sky-high asset valuations of the existing industry titans, while holding out the prospect (albeit still distant) of an end to energy poverty for residential consumers.

So, to the history.

The technological imperatives of large-scale electricity supply in the 20th century faced countries with a choice between two possible institutional arrangements to coordinate multiple players and levels of activity: state monopoly, or vertically-integrated private monopoly. The first was common in Britain, France and their former colonies. The second was the norm in the USA (with FD Roosevelt's Tennessee Valley Authority a notable exception). In each case the political imperative, prior to the neoliberal era of the 1980s, was to hold down the cost of power for the general public by limiting the exercise of monopoly power. In the state monopoly model this was done by imposing a non-profit public-service objective on the system's managers. In the US, Public Utility Commissions were tasked with the job of regulating the industry's investment and pricing to restrict profiteering. Under both systems integrated monopoly prevailed at national, regional and local levels, for the common-sense reason that it was the cheapest and most efficient way to deliver the service.

**the political imperative, prior to the neoliberal era of the 1980s, was to hold down the cost of power for the general public by limiting the exercise of monopoly power**

As described in John Martin's comprehensive history[2]* and summarised in Chapter Two, our country's electricity supply started out small-scale, with local stand-alone systems in mining towns and the main cities. But from the 1920s on, the advantages of large scale, combined with the desire for universal supply to rural as well as urban Aotearoa New Zealand, led government to undertake the construction and operation of state-owned large hydro, geothermal and fossil-fuelled generating stations, connected to a high-voltage transmission grid, which became a nationwide network with the completion of the Cook Strait cable in 1965. NZED owned and operated both generation and transmission and delivered its electricity to local distribution networks at a uniform nationwide price (the bulk supply tariff, which was set by the government at a level designed to cover average supply costs over time), while retail prices were also subject to price control.

Distributing and retailing the bulk supply coming off the grid was a task assigned to a special kind of local government agency: Electricity Supply Authority (ESAs), established by legislation pushed through by Gordon Coates as Minister of Works in 1918. (Similar municipal council-owned operations became Municipal Electricity Departments, MEDs.) Here again public ownership and democratic accountability prevailed: the ESAs had elected boards and undertook distribution of electricity over local lines networks, plus operation

* Second edition Martin [3] See also Reilly [4] and Wikipedia [5].

of ripple-controlled devices in water heaters to cut demand at peak times, sale of both electricity and electrical appliances, and operation of small local hydro plants and other generation connected to the network.

This government-driven electrification of the nation was a huge project relative to the size of the population and the available resources. It was at least equivalent to the US moon-landing project of the 1960s, the sort of public 'mission' described by Mariana Mazzucato,[6] and it enjoyed enduring support from the public, who got the benefit of an essential service at a price among the lowest in the world. By the 1980s Aotearoa New Zealand had an efficient, reliable and increasingly resilient electricity supply chain at both wholesale and retail levels, with just one dark cloud on the horizon: coping with dry years. Fast forward to 2025, and the physical engineering components of that system are pretty much the same: central generation, transmission grid, distribution networks. The dry-year threat remains, unsolved by three decades of market-based 'solutions'. What have disappeared are the low residential price, the democratic accountability, the public sense of ownership of a national asset, and the management culture of engineers and officials committed to serving the public interest. In their place stand corporate managers and financial engineers, maximising profit and 'shareholder value' in an industry where the cost advantages and synergies of integration have been dumped overboard and replaced by fragmentation of the old portfolio of generation assets and separation from the Transpower grid, all in the name of a mythical 'competitive market discipline'.

**This government-driven electrification of the nation was a huge project relative to the size of the population**

There are, therefore, good reasons to recall what was lost in the neoliberal upheaval of the industry that began in 1986 and that had consolidated the new order by about 2014. (As Joni Mitchell sings, 'You don't know what you've got 'til it's gone'.) It is important, though, to be clear-eyed about the emerging weaknesses of the electricity system in the 1980s that made it a soft target for the neoliberal programme of cutting back the state, widening the sphere of markets, and elevating self-interest and profit above community values.

First off, as any successful mission reaches its goal, the key players are faced with the question, what next? With a nationwide grid and generation portfolio built to high engineering standards, the decades of catching up to rising demand were over, and the shape of future growth was increasingly controversial. The big state agencies – the New Zealand Electricity Department (NZED) and the Ministry of Works (MoW) – that had built up momentum in the hydro construction programme, were reluctant to scale down; but the best hydro sites were already developed and the new ones, such as Rangipo and Clyde, presented greater engineering and cost difficulties. Any monopoly, whether public or private, can lose social licence by actual or perceived misuse of its market power. This increasingly happened to the NZED and the MoW

**Any monopoly, whether public or private, can lose social licence by actual or perceived misuse of its market power**

during and after the Muldoon government's period of 'Think Big' growth projects, when the two agencies came under criticism (ironically, much of it driven from the Treasury) that they were bureaucratic monoliths and insensitive to public concerns. The tone of the critique is captured in Culy's description:[7]

> At the State level, control was exercised through the normal departmental procedures that were characterised by very rigid constraints, centralised bureaucratic systems, mixed objectives and lack of effective delegation and accountability. Licences from the Minister were required to generate and sell electricity … and all investments of any significant size were approved by the Cabinet Works Committee. Short term political and fiscal factors, both national and regional, played a significant, if not dominant, role in pricing and investment decision making. The nature of the decision making and accountability systems meant that little attention was paid to risk assessment, monitoring and control of investment projects.

While there were elements of truth in this account, the architects of neoliberalism greatly oversold the negatives while ignoring the positives,* in a quest to eliminate two powerful institutions of the welfare state that was their ultimate target for destruction. At the same time, in the background, Aotearoa New Zealand's own version of the 'fiscal crisis of the state'[9] was running. The Think Big projects had left huge public debts, and, for Treasury officials desperate to increase revenue, the electricity industry stood out as a potential cash cow if its monopoly power were to be exercised a bit more – or if a private buyer could be lured to pay a high price for the assets.

**in 1986, came the transformation of NZED into a profit-driven State-Owned Enterprise, Electricity Corporation of New Zealand**

Into this conjuncture the neoliberals jumped with enthusiasm. First, in 1986, came the transformation of NZED into a profit-driven State-Owned Enterprise, the Electricity Corporation of New Zealand (ECNZ) or Electricorp, promoted with the familiar claims from more-market advocates that commercial management would 'eliminate waste', while competition would force the resulting cost savings through to lower prices for the same or better quality of service.

Where the heralded competition was to come from was a mystery in the setting of our small country. Much of the neoliberal thinking was imported from the US, where the structure and economics of electricity are quite different, and where pressure to open the market to new entrants had led the Carter government to introduce the 1978 PURPA Act which forced big utilities to accept power produced by independents. In the USA the technologies and costs of both incumbents and would-be new entrants were high-cost thermal and nuclear generation, so that new entrants could be immediately cost-competitive, provided institutional and regulatory barriers to entry were removed. In Aotearoa New Zealand any independent newcomer would have

* For a strongly supportive history of the Ministry of Works see Tompsett [8].

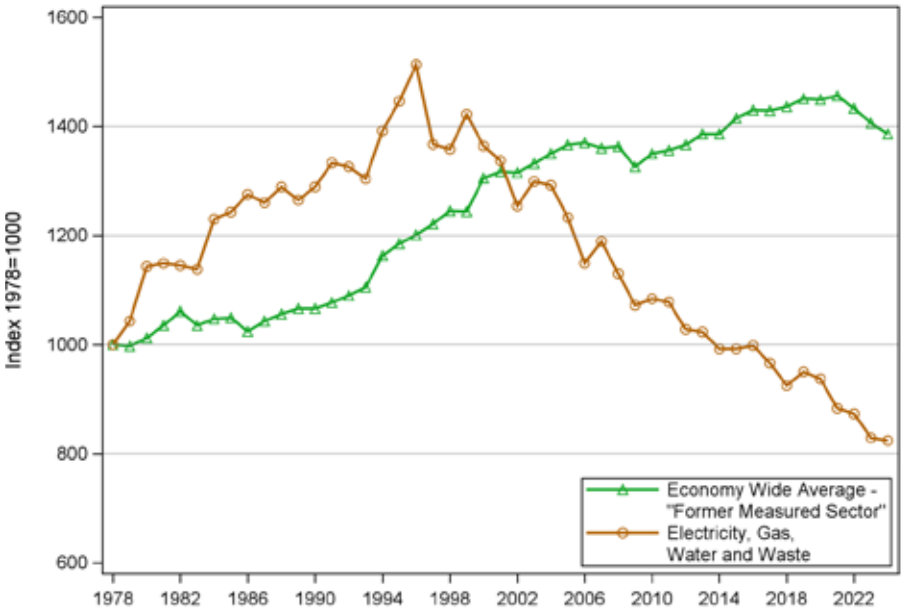


**Figure 1:** Multifactor productivity: two trends.
Source: Statistics New Zealand Infoshare Table PRD014AA

to enter against established hydro and geothermal generators with their asset costs long sunk, their operating costs near zero, and their electricity able to be priced well below the cost of new-entrant supply. Only three decades later, as windfarm economics improved, would the country see competitive newcomers to generation, by which time the owners of the existing hydro and geothermal assets were well entrenched as low-cost/high-price oligopolists.

**the neoliberal reformers pushed ahead on the path towards break-up and privatisation of ECNZ**

Undeterred, the neoliberal reformers pushed ahead on the path towards break-up and privatisation of ECNZ, again following a US idea – breaking up monopolies into independent firms which could compete amongst themselves even if no outside new entrants appeared. By 1999 the unified, integrated organisation had been converted to four large companies holding the main generation assets, with a couple of smaller independents that had picked up small-hydro crumbs from the breakup. By 2014 one of the four dominant 'gentailers' was fully privatised and three were 49% privatised, with government as a passive 51% shareholder happily taking large dividends. The transmission grid had been spun off along the way as a separate profit-focused State-Owned Enterprise, Transpower.

Without the internal synergies and economies of scale and scope that had enabled NZED to hold down its costs and prices, and with no incentive on the gentailers to sacrifice profits in a zero-sum competitive struggle, the promised efficiency gains and price reductions from commercial management evaporated.

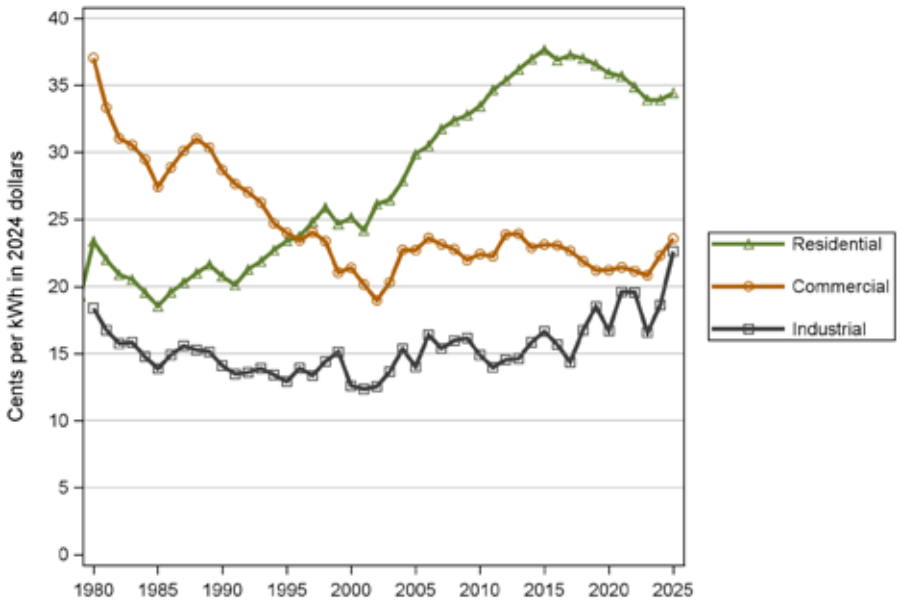


**Figure 2.** Real electricity prices 1980–2025.
www.mbie.govt.nz/assets/Data-Files/Energy/nz-energy-quarterly-and-energy-in-nz/prices.xlsx

Since the mid-1990s, overall 'multifactor' productivity in the industry has fallen steadily under its profits-driven model,[10] to the point where by 2023 productivity was 17% below the level it had reached before corporatisation was pushed through in 1986;[11] see Figure 1. Electricity is at the bottom of the league table for productivity performance, in an economy that is already scoring low on productivity. At the same time, the average price of electricity in real terms had risen 33% above the 1986 level by 2021, while for residential consumers the real increase was 80%;* see Figure 2. The dry-year problem remained as intractable as ever.

**the average price of electricity in real terms had risen 33% above the 1986 level by 2021, while for residential consumers the real increase was 80%**

Two things are crucial to understanding why competition in electricity wholesale and retail supply was not a realistic expectation, before the recent arrival of cheap rooftop solar and other small-scale new renewables-based options.

The first is that each gentailer inherited a particular set of generation assets from ECNZ, combined with a matching set of retail customers purchased in a 1999 goldrush (described below). Despite some government-directed shuffling around of assets in 2011, no gentailer had any reason to expand its share of the market significantly beyond what it could generate for itself. Certainly at no stage has there been any sign that any gentailer had any interest in a hostile takeover of another's generation assets in order to increase its output and wholesale

* From MBIE data; MBIE [12] and MBIE [13].

market share; nor any sign that any of the big four gentailers were interested in selling out of their existing generation assets. (One second-string gentailer, Trustpower, 51% owned by private company Infratil, realised its capital gains by selling off its customers in 2022 to Mercury and its generation assets in 2024 to Contact, a process which simply consolidated the oligopoly*). With market shares thus locked in, competition was never more than token. And with the prime sites for potential new generation projects in hydro, wind and geothermal locked up by the gentailers – either by actual occupation and use, or by land-banking of undeveloped but consented sites that were thereby unavailable to independent entrants – a comfortable cartel arrangement became the industry equilibrium.

**a comfortable cartel arrangement became the industry equilibrium**

The second crucial flaw in the competition model has been vertical integration of generation with retailing. In 1999 the 'Bradford reforms' kicked in, compelling all the local distribution companies (former ESAs and MEDs) to separate their lines and energy businesses, and to divest one or the other – a destructive policy driven by more-market ideology rather than common sense[14] that is discussed further below. Almost all the former ESAs (the exceptions were Tauranga and Central Otago) chose to stick with their lines networks, which meant that their retail customers were cast adrift to be picked up by new retail operators. Had the big generators been barred from moving into retail, this might have led to a whole new set of retail businesses competing for the market – but instead the government left the way open for the generators to snap up those groups of retail customers by direct purchase from the local distributors. Each of the big generators sought to acquire a retail customer base matched to its generation volume, and to achieve this they spent very large sums of money to buy just enough customers to meet their target market shares.† After that the generators sat tight on those established shares, while engaging in the performative charade of a 'what's my number?' campaign, shuffling customers from one to another, but all the time ensuring that proportional market shares were preserved – which meant of course that there was no 'competitive pressure' of the kind described in economics texts, that might have put sustained downward pressure on prices in general. At best, a customer switching from one gentailer to another could get a temporary reprieve, at the expense of others whose prices would rise, while total revenues to the gentailers held steady or rose.

Over the decade and a half from 2000 to 2015 as the gentailers banked their payoff from vertical integration, residential prices

**as the gentailers banked their payoff from vertical integration, residential prices in real terms (adjusted for inflation) rose in every single year**

* The sale of the generation assets to Mercury remains subject to Commerce Commission acquiescence at the time of writing.

† The cost of acquiring retail customers in the competitive scramble of 1999 was entered into the gentailers' books as 'goodwill', an asset which could subsequently be amortised at customers' expense.

in real terms (adjusted for inflation) rose in every single year while industry spokespeople, government ministers and the token regulator (the Electricity Authority) assured everyone that all was well and that healthy competition was underway. As with many other experiments in neoliberalism, big business and its allies celebrated their success while dispersed, unorganised consumers were steadily squeezed.

**All of this, of course, relied on the absence of regulation**

All of this, of course, relied on the absence of regulation. The neoliberal ideology has at its core a desire to sweep away regulatory restraints on the market, and in the case of the former public utilities (gas, electricity, telecommunications, rail, postal services and so on) the doctrine of 'light-handed [soft] regulation' was applied by successive governments. De Boer and Evans summarise as follows:[15]

> Public policy towards oligopolistic markets with firms tending to natural monopolies has undergone dramatic change in many countries. None more so than in New Zealand where the concept of 'soft regulation' was first implemented. This form of regulation was adopted in 1987 as part of the economy-wide deregulatory experience dating from 1984. It eschews industry-specific regulation, relying instead on the potential for entry to discipline behaviour within the context of a business environment for which the competitive practices of all firms are subject to a single Commerce Act.

The enviable situation of both generators and lines businesses in New Zealand is that their prices could become 'disciplined by potential new entry' only at very high levels that deliver huge profits (really rents) to the incumbent firms. In generation, the market has been designed to drive the wholesale price up to the level required to draw in marginal fossil-fuelled plant such as Huntly – that is, in general the wholesale spot price is set by (or in relation to) the supply prices bid into the market by plants with high operating costs. Any owner of a hydro station with zero operating cost is sheltered under the umbrella of that fossil-fuel-parity price, and as a result collects a torrent of revenue that is pure economic rent – money that can be spent on high salaries and bonuses for management, high dividends for shareholders, glamorous branding, and occasional investment in maintenance and repair of fixed assets.

This is the socially destructive and economically unnecessary basis for most of the cash flows squeezed out of captive electricity-using households – an enormous and continuing wealth transfer from those households to the owners of heritage hydro and geothermal generation assets.

The politics of reversing this wealth transfer are tough, because many of the current owners of the assets bought their stakes at high prices, reflecting profits-driven asset revaluations, and will therefore face capital losses if profits and valuations are brought back down to earth.

Meantime, for lines businesses which are natural monopolies, new entry could be a competitive threat only if a newcomer were to install a complete duplicate set of poles, lines, transformers and connections to consumer

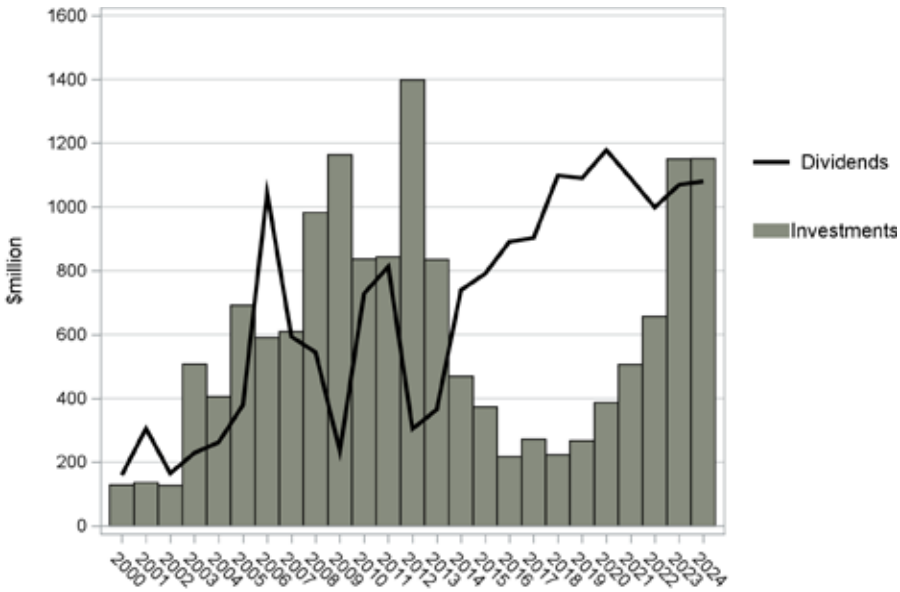


**Figure 3.** Four big gentailers, dividends versus investment.
Company annual reports

premises. No 'competitive discipline' could therefore apply unless the prices charged were high enough to justify investment in such a complete replacement system. In thrall to light-handed regulation, in the 1990s and early 2000s the government pushed lines businesses to raise the book value of their assets to the hypothetical cost of a replacement system, and to charge customers accordingly, even though no actual competition for the market was in prospect. The resulting charade of 'Optimised Deprival Valuation' (ODV) delivered enormous cash benefits to anyone who secured control of lines networks at their initial book value, then sold out and banked the capital gains – a process which transferred over $2 billion of wealth from consumers to the companies by 2004,[16] rising to $7 billion by 2023 (see Figure 6 later in the chapter)*[17] and which left the natural monopolies as free from competitive pressure in 2008 as they had been at the start in 1994. Only in 2008, with monopolistic valuations and prices firmly entrenched, was the Commerce Commission finally given the task of 'regulating' lines company revenues – which basically meant defending their enjoyment of the fruits of monopoly on an ongoing basis. Under the rules prescribed for the Commission's regulatory work, the upward march of prices and asset values of lines businesses has continued, with a 26% increase in lines charges in 2025.[18]

**Under the rules prescribed for the Commission's regulatory work, the upward march of prices and asset values of lines businesses has continued**

* Tables 1 and 2 in Bertram [17] calculate the cumulative wealth transfer by 2018 at $10–17 billion if historic revaluations are cumulated forward at 5% rather than zero as in Figure 6.

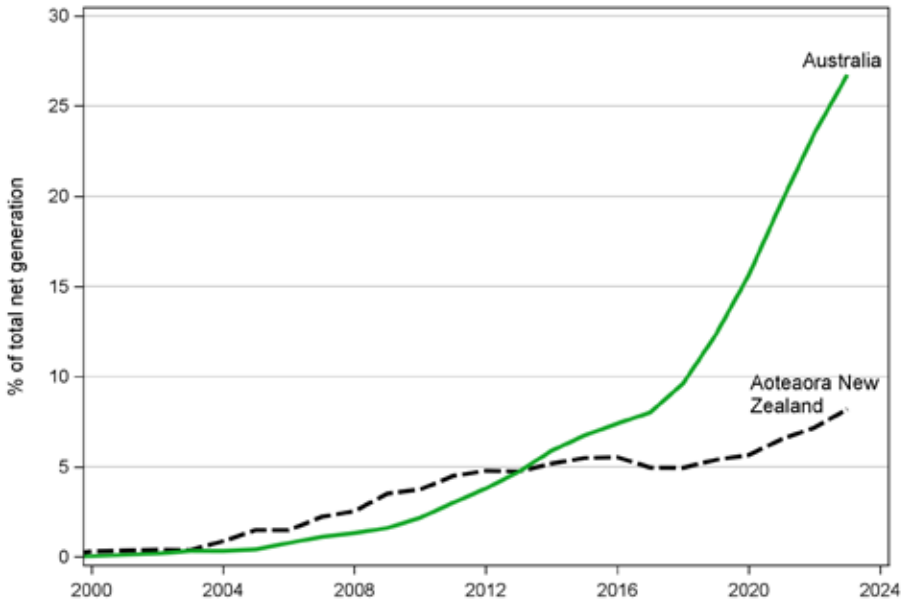


**Figure 4.** Market penetration by wind and solar.

The absence of regulation other than from 'discipline by new entry' has had (at least) two other malignant effects. One is that by strategically manipulating the wholesale market in normal times, and by taking huge profits in occasional price spikes when supply runs short, the gentailers have raked in 'excess profits' even on top of their already-large market rents. These run into the billions of dollars,[19–23] again a straight wealth transfer from households who have borne the brunt of increased prices. The other effect of non-regulation is that because the gentailers' profits are continually at risk if scarcity is accidentally overcome by installation of new generation capacity, the gentailers have withheld new investment in their own systems (see Figure 3), while continuing to keep consented wind and hydro sites out of the hands of potential new entrants. In addition, as another way to maintain scarcity, they have given cut-price deals to big industry in order to keep demand pressing up hard against total generating capacity – a tactic that has surrendered some gentailer profit (transferred wealth) to large users such as Rio Tinto, while recouping far larger amounts from ordinary consumers whose prices have been thereby kept high.

**This consciously constructed and government-protected rent-seeking arrangement is finally under threat from actual new entry by independent generators, in the shape of households putting solar panels on their roofs**

This consciously constructed and government-protected rent-seeking arrangement is finally under threat from actual new entry by independent generators, in the shape of households putting solar panels on their roofs, farmers installing solar arrays in their fields, and new independent windfarms and solar arrays both

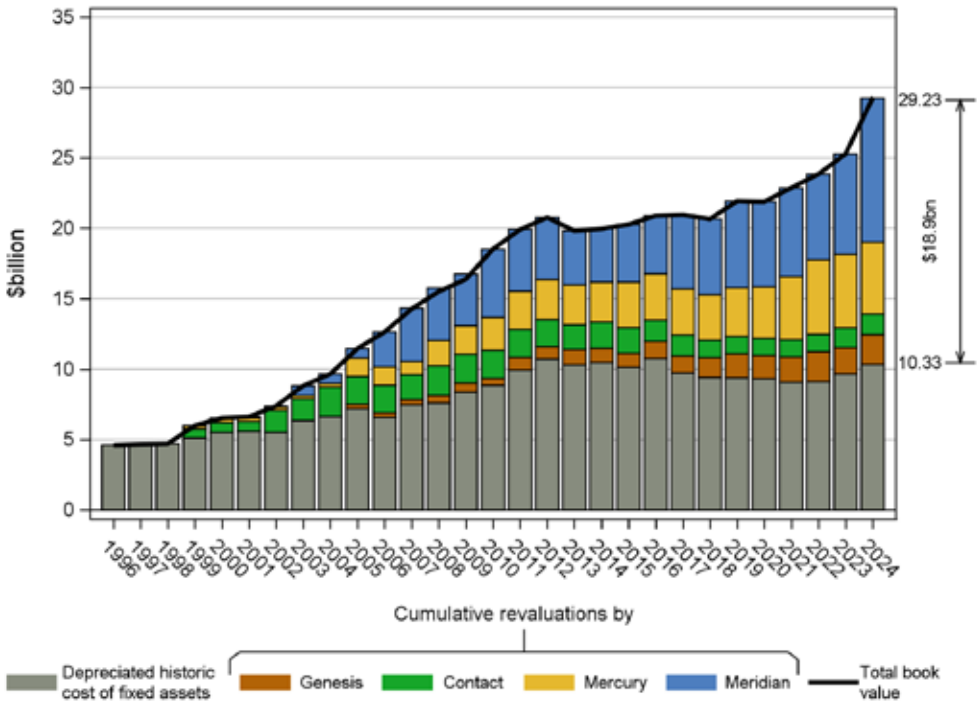


**Figure 5.** Four gentailers' gains from revaluation of their fixed assets.
Company annual reports

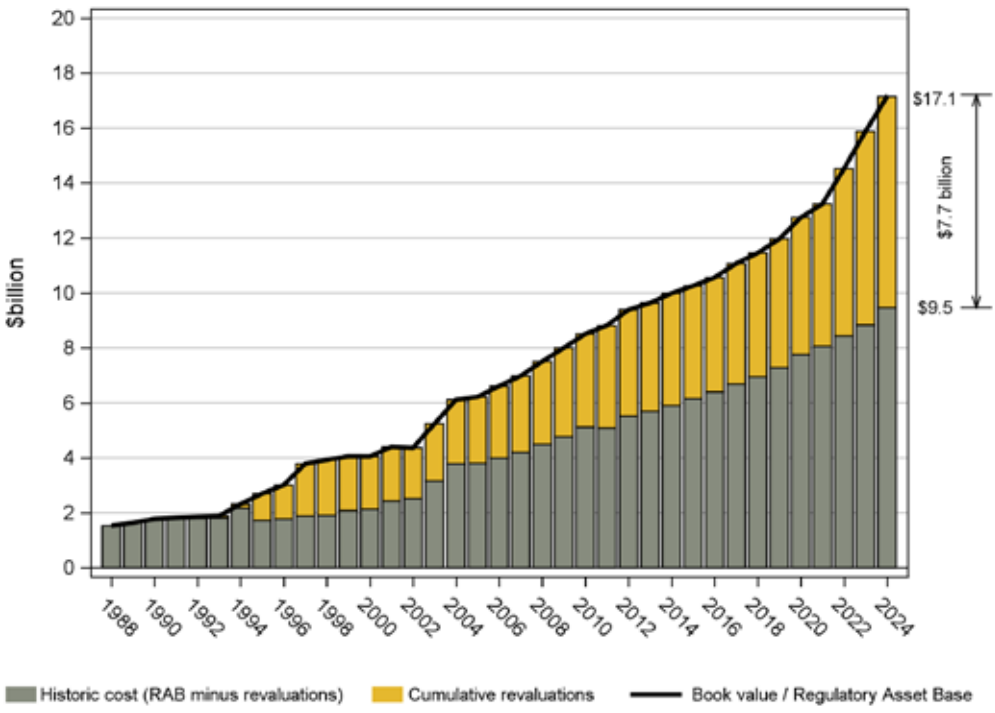


**Figure 6.** Distribution companies gains from asset revaluations.
Company annual reports plus regulated information disclosures

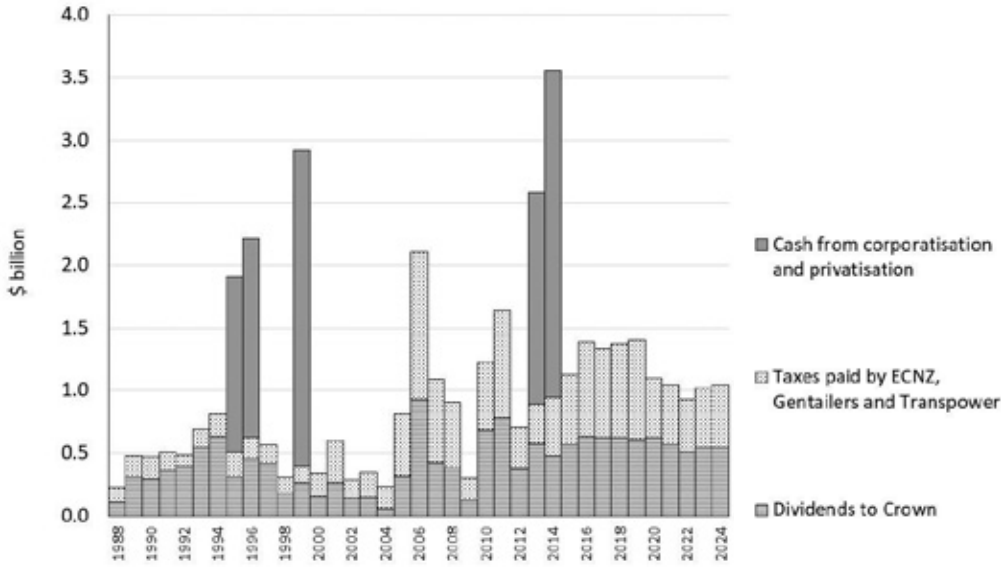


**Figure 7.** Crown cash receipts from gentailers and Transpower.
Company annual reports

onshore and, potentially, offshore. The country has lagged internationally in adoption of these new technologies; while in Australia over a third of households have solar on their roofs, in Aotearoa New Zealand the figure is just 2.7%.[24] The divergence between the two countries really took off from 2014 (Figure 4) as Aotearoa New Zealand's gentailers were part-privatised and embarked on their investment freeze while dividend payouts soared (Figure 3 above). Meantime Australia through financial incentives proceeded with decarbonising its electricity sector, more than doubling its renewables share of total generation from 15% to 34% between 2014 and 2023.

Three big outcomes sum up the history of Aotearoa New Zealand's neoliberal experiment in electricity. First, prices in real terms (after inflation) are traced in Figure 2 above, showing how the price charged to residential customers was pushed up to the profit maximum by 2015, triggering a demand response as energy poverty and consumer resistance put the brakes on that market segment. Subsequently, the gentailers compensated for that obstacle by increased price pressure on industrial users, leading to some factory closures by 2024.

**consider the government's revenue (over $1 billion annually since the mid-2000s) from industry profits**

Second, the asset values of gentailers and lines companies are traced in Figures 5 and 6, showing the upward 'fair value' revaluation of their assets totalling over $26 billion, reflecting the capitalised value of profits running above competitive levels:

Finally, consider the government's revenue (over $1 billion annually since the mid-2000s: Figure 7) from industry profits, in the shape of dividends and tax

from the four gentailers and Transpower, which speaks volumes about why the government will hesitate to break ranks and bring asset values, profits – and so tax – down to earth.

We come finally to the new market dynamics unleashed by the appearance, for the first time, of genuine competitive market pressures from suppliers who are not dependent on the gentailers and Transpower but rather are confronting them across the market platform of local lines companies' networks. In the original thinking about the role of local networks, it was believed that they should operate as neutral platforms on which wholesale supply and retail demand players would compete on the merits. Pretty well the only half-credible reason for splitting the old ESAs' lines from their energy businesses was to prevent the former being used to cross-subsidise the latter (in the same way as the gentailers' generation businesses have been sustaining the anti-competitive advantage of their retail arms by providing within-company hedging for the retail businesses on terms that have been systematically withheld from independent retailers).

In the case of the former ESAs, once they had been corporatised, there was certainly a theoretical possibility that undue advantage might be taken of their control of both local retail operations and the distribution system. Whether this would actually have happened was not tested because the lines/energy split was imposed at the same instant that monopoly local retail franchises were abolished in 1999. But (giving the 1990s decision-makers the benefit of the doubt) suppose that the former supply authorities – even those run by community trusts accountable to local consumers – might have somehow manipulated their control of the physical wires and transformers to exclude competitive retail entry. That could easily have been forestalled by simple regulatory measures. But the entrenched lines/energy split now forecloses the opportunity for local distribution companies (or new entrants!) to regain their original role of integrated operation of local energy systems, networks and markets – both investing in, and coordinating, decentralised renewable generation and battery backup at community level.

**the entrenched lines/energy split now forecloses the opportunity for local distribution companies to regain their original role of integrated operation of local energy systems, networks and markets**

The much-hyped (back in 1998) but purely hypothetical possibility of undue within-company cross-subsidisation by local integrated energy operators fades into insignificance compared with the two outstanding issues of the next decade:

- how best to integrate into the national system the operation and management of local energy communities that combine local distributed renewable supply (including rooftop solar) with grid-delivered centrally generated electricity, to provide consumers with the most cost-effective supply;
- how to remove the anti-competitive effect of fixed grid charges that are currently passed through to all final consumers and prosumers (electricity producers/consumers) unless their entire local networks go off-grid.

Transpower's profits and asset values, along with the gentailers' market dominance and profits, hinge on that compulsory pass-through of grid charges, which effectively forces distribution network owners to tax the owners of rooftop solar in order to subsidise the market dominance of their main competitors.

The idea raised in the 1989 Electricity Task Force report of making local networks a neutral platform on which competing suppliers would earn market share on the basis of merit and cost, rather than from the exercise of pre-existing market power, remains attractive. But it requires, as a first step, a pushing-back of the grid fixed charges that currently foreclose the potential market share of distributed renewables. One obvious solution is to return to the wholesale pricing practice that prevailed up to the 1980s, with central generation costs and grid costs bundled together in a bulk supply tariff charged at the grid exit points. To hold retail market share, the gentailers and Transpower would then be forced to adjust their asset values and wholesale pricing to meet distributed renewables on a level playing field.

**One obvious solution is to return to a bulk supply tariff charged at the grid exit points**

This would leave open the question of how to reward the grid for the ways in which it can provide positive value to distributed 'prosumers' in the form of backup to cover for periods when the sun is not shining and the wind is not blowing, along with ancillary services like frequency control. These particular components of grid service would have to be separately priced in some way, but that would involve charges far lower than the present all-in grid fixed charges. Here, for the first time, Transpower should genuinely face the light-handed-regulators' test of 'discipline from competing entry', in the form of the local option to go off-grid with battery storage. A political decision to protect Transpower's market by maintaining the current pricing arrangement would be quite likely to end up being substantially more economically damaging (by triggering a death spiral for the grid) than moving early to change the regulatory set-up, and accepting some write-downs for the balance sheets of Transpower, the gentailers and the Crown in the process.

How, then, might one think about changes to the current industry institutions to make a constructive transition to the new technological order, while taming the monster?

- First, breaking the market power of the gentailers and Transpower is essential. At a minimum that should include forcing divestment of retail from generation, and restoring public control of the heritage hydro assets, to enable them to be operated in a coordinated fashion to provide a battery backstop to the new wave of intermittent renewable generation. Re-nationalising those assets would be the obvious way to achieve this.*

* Other arrangements might be possible, provided that the system operator has the authority to direct the flexible response of hydro, within the environmental limits for its rivers and lakes, to perform that backstop role.

- Second, bundling the two components of wholesale supply – central generation and grid transmission – and pricing this bundle at grid exit points will be a prerequisite to achieve a level competitive playing field for distributed versus grid supply.
- Third, immediately cancelling the lines/energy split at the level of distribution systems would open the way for integrated community-level energy systems with the means to coordinate distributed renewable supply with grid supply into the local network, and the capability of maintaining local and regional supply in the face of grid failures such as those seen during 2024 in Hawkes Bay in Cyclone Gabrielle and in Northland following the collapse of a pylon later the same year.
- Fourth, Transpower needs to be freed of its SOE status, which (under section 4(1) of the neoliberals' State-Owned Enterprises Act 1986) subordinates social responsibility to the quest for profit, and should be given a non-profit mandate to develop a genuinely smart grid. This will almost certainly require both an asset write-down and some new investment.

**Transpower should be given a non-profit mandate to develop a genuinely smart grid**

- Fifth, the regulation of lines businesses under Part 4 of the Commerce Act 1986 should end and those businesses should face the rigour of survival in the marketplace without the protective shield currently provided by the industry's captured regulator. (In an ideal world, the Commerce Act 1986 would be replaced by an updated version of its predecessor, the Commerce Act 1975, Part 2 of which gave the Commerce Commission and Examiner of Trade Practices the teeth to bite profiteers without the cumbersome machinery of Part 4).
- Sixth, the Electricity Authority should be either abolished, or made fit for purpose as a regulator, with an explicit mandate to achieve fairness in the retail pricing of electricity and revisions to the current market rulebook to open the way for innovation by independent players.
- Seventh, a serious boost is needed for rooftop solar, taking a leaf from Australia's successful use of subsidies and attractive feed-in tariffs.
- Eighth, the low-priced wholesale contract currently enjoyed by the Tiwai Point smelter should be replicated in a compulsory purchase (or an excess-profit tax) from the heritage hydro system to enable the immediate delivery of low-priced power to residential consumers, targeted to the most energy-poor groups. If government enters into low-priced procurement contracts with developers of large windfarms and solar arrays (see next bullet point) these could also be a source of low-priced residential tariff arrangements –

'lifeline tariffs' that ensure households' basic electricity needs are met for a fixed, initial tranche of supply.*

- Ninth, the urgent task of electrifying transport and industry – both to meet climate-change goals and to minimise import requirements for fossil fuels – while building out adequate renewable and backstop capacity to service the increased demand in dry years, without having to resort to large-scale use of fossil fuels, requires planning, procurement, and industrial development policies. The policies required include options such as flexible-response industries designed to operate in normal conditions, but shut down in periods of constraint, and tendering out of procurement contracts to underwrite development of large scale windfarms and solar arrays.
- Tenth, the rights and role of Māori under Te Tiriti o Waitangi in relation to water and geothermal resources will need to be recognised and incorporated into the industry's governance structure.

These suggestions involve recovering some still-relevant aspects of the pre-1986 arrangements, while recognising the technological and Te Tiriti-related transformations that have occurred since then, which have rendered the 20th century's monolithic industry structure unsuited to the 21st century world of widely distributed renewables-based supply and iwi rights.

**the New Zealand electricity market design has blocked new technology, renewables, distributed generation and competition**

By giving priority to protecting and enhancing the value assigned to sunk investments over the pursuit of dynamic economic efficiency, and by failing to regulate against profiteering and rent-seeking, the Aotearoa New Zealand electricity market design has blocked new technology, renewables, distributed generation and competition for the market. The incumbents' intensive rent-seeking deployment of resources to foreclose market entry means that neither demand-side efficiency nor distributed generation have been able to get off the ground. This is not the economic efficiency promised by the neoliberal reformers; it is a manifestation of the exercise of market power, combined with industry capture of government policy. The great opportunity now is to overturn monopoly and renewably electrify Aotearoa New Zealand.

* Proposals for including such a low-priced tranche of households as part of the reform programme were set out in Bertram et al [25].

**Three: A history of regulation in the New Zealand electricity market post-reforms – Geoff Bertram endnotes**


1. Weststrate C. New Zealand: Portrait of a modern mixed economy. Wellington: New Zealand University Press, 1959.

2. Martin JE, editor. People, politics and power stations: Electrical power generation in New Zealand 1880-1990. Wellington: Bridget Williams Books and ECNZ, 1991.

3. Martin JE, editor. People, politics and power stations: Electrical power generation in New Zealand 1880-1998. 2nd ed. Wellington, New Zealand: Electricity Corporation of New Zealand and Department of Internal Affairs, 1998.

4. Reilly H. Connecting the country: New Zealand's national grid 1886–2007. Wellington: Steele Roberts 2008.

5. Wikipedia. Electricity sector in New Zealand [updated 20 May 2025]. Available from: https://en.wikipedia.org/wiki/Electricity_sector_in_New_Zealand.

6. Mazzucato M. Mission economy: The moonshot guide to changing capitalism: Allen Lane 2021.

7. Culy J. Electricity restructuring: towards a competitive wholesale market: Address to the annual general meeting of the New Zealand Institute of Economic Research, 1992. In: Baldwin T. History of electricity security in New Zealand 2005. Available from: http://www.tonybaldwin.co.nz/publications/history%20of%20electricity%20security%20in%20nz%20may%2005.pdf.

8. Tompsett G. Carved on their hearts: A short history of the Ministry of Works and construction of the Tongariro Power Development 1954—1984. Forthcoming.

9. O'Connor J. The fiscal crisis of the state. New York: St Martins Press, 1973.

10. Stats NZ. Productivity statistics 1978-2023. Wellington, 2024. Available from: https://www.stats.govt.nz/information-releases/productivity-statistics-1978-2023/Table 5.03 Productivity by industry.

11. Stats NZ. Series S1MDD1I (Electricity, gas, water and waste services) in Infoshare table PRD014AA 2024 [cited 10 September 2024]. Available from: https://infoshare.stats.govt.nz.

12. Ministry of Business, Innovation and Employment. Electricity data tables 2025. Available from: https://www.mbie.govt.nz/assets/Data-Files/Energy/nz-energy-quarterly-and-energy-in-nz/electricity.xlsx.

13. Ministry of Business, Innovation and Employment. Real annual average energy prices – 2024 prices 2025. Available from: https://www.mbie.govt.nz/assets/Data-Files/Energy/nz-energy-quarterly-and-energy-in-nz/prices.xlsx

14. Kalderimis D. Pure ideology: The 'ownership split' of power companies in the 1998 electricity reforms. Victoria University of Wellington Law Review 2000;31:255-315.

15. de Boer B, Evans L. The economic efficiency of telecommunications in a deregulated market: The case of New Zealand. The Economic Record 1996;72(216):24-35, p.24

16. Bertram G, Twaddle D. Price-cost margins and profit rates in New Zealand electricity distribution networks since 1994: The cost of light-handed regulation. Journal of Regulatory Economics 2005;27(3):281-307.

17. Bertram G. Identifying and measuring excess profits in the New Zealand electricity industry. New Zealand Association of Economists conference. Wellington, 2019. Available from: https://geoffbertram.com/wp-content/uploads/2023/06/identifying-and-estimating-excess-profits-in-the-new-zealand-electricity-industry-final.pdf.

18. Commerce Commission. Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft decision reasons paper 2024. [Accessed 10 September 2024]. Available from: https://comcom.govt.nz/__data/assets/pdf_file/0031/353983/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2025-Draft-reasons-paper-29-May-2024.pdf.

19. Commerce Commission. Investigation report: Commerce Act 1986 s.27, s.30, and s.36 Electricity investigation: Wellington: Commerce Commission, 2009.

20. Wolak FA. An assessment of the performance of the New Zealand wholesale electricity market (public version): Report to the Commerce Commission, 2009.

21. Brown O, Poletti S, Young D. Simulating market power in the New Zealand electricity market. New Zealand Economic Papers 2012;46(1):35-50.

22. Poletti S. Market power in the NZ wholesale market 2010-2016. University of Auckland Business School Working Paper, 2018. Available from: https://cdn.auckland.ac.nz/assets/business/about/our-research/research-institutes-and-centres/energy-centre/reports/Market%20Power%20in%20the%20NZ%20wholesale%20market%202010-2016.pdf.