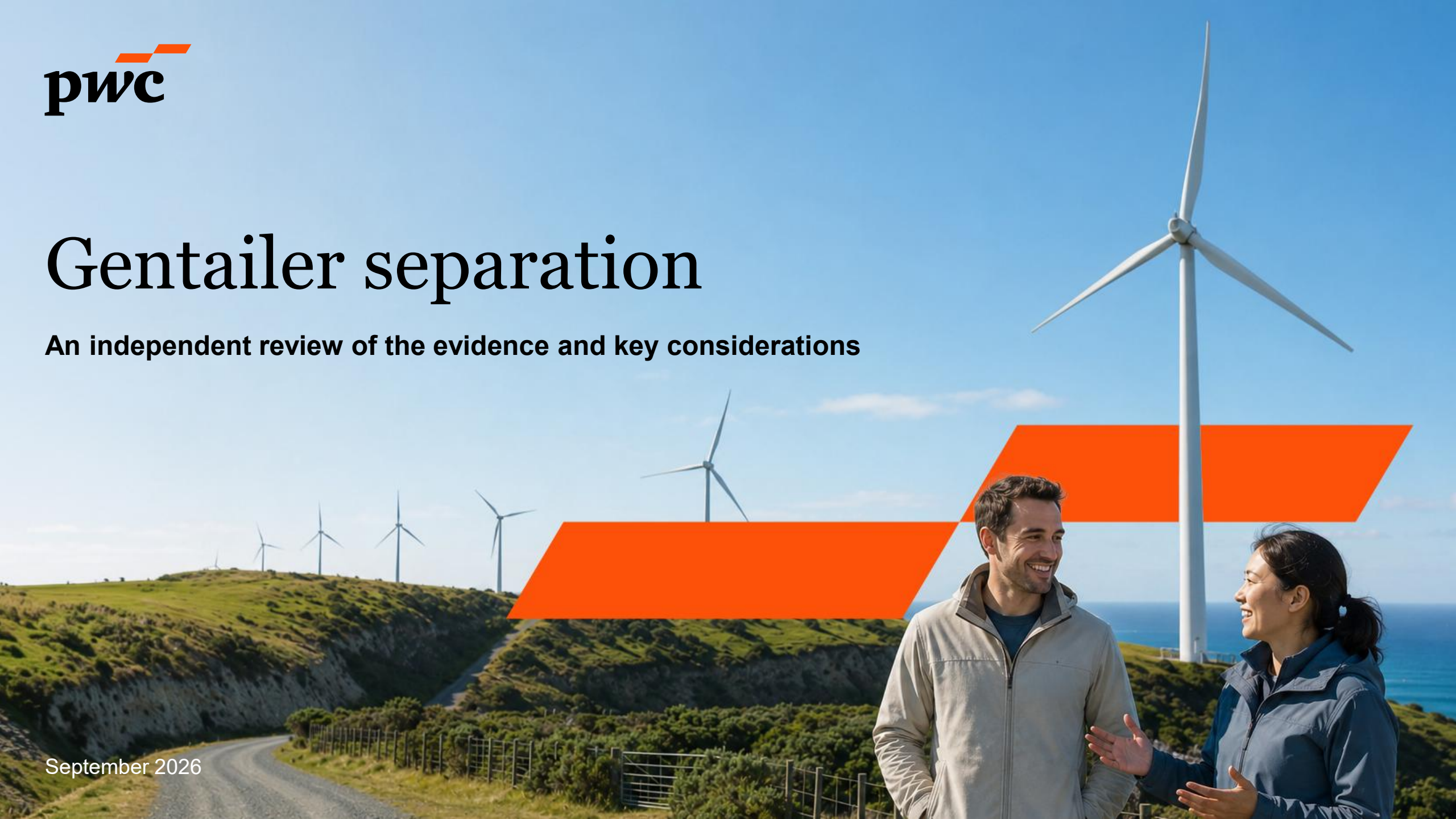




Gentailer separation

An independent review of the evidence and key considerations

September 2026



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This document does not make recommendations and does not advocate for or against any separation option or the status quo. The document draws together insights and highlights market context where we see market structures being debated. The international evidence covers those jurisdictions deemed relevant to the scope and New Zealand's context, where separation measures have been implemented or there has been relevant debate on generation and retail market structures.

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Gentailer separation: An independent review of the evidence and key considerations

Kia ora koutou,

In accordance with the terms of our engagement, we are pleased to provide our report, 'Gentailer Separation: An independent review of the evidence and key considerations', prepared for Contact Energy, Genesis Energy, Mercury NZ and Meridian Energy.

The purpose of this report is to synthesise the New Zealand evidence base, assess relevant international experience, and evaluate the practical implications and potential consequences associated with separation options within the New Zealand electricity sector. The report has been prepared to support consideration of the issues currently being debated in the context of New Zealand's energy market structure and future policy settings.

Our approach has been grounded in an objective and evidence-led assessment of available information. The report does not advocate for any particular policy outcome. Rather, it seeks to present the evidence, competing perspectives, and practical considerations in a balanced and accessible manner, allowing readers to form their own conclusions.

The report should be read in conjunction with the scope, assumptions, limitations, and reliance provisions agreed as part of our engagement. As with any analysis of this nature, the findings and conclusions are dependent upon the information available at the time of preparation and the assumptions set out within the report.

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We trust that this report provides a useful contribution to the ongoing discussion regarding market structure, competition, affordability, security of supply and investment in New Zealand's electricity sector. We also appreciate the contributions of the various subject matter experts and reviewers who assisted in informing and challenging our analysis.

Should you wish to discuss any aspect of the report, or require any clarification regarding the analysis and findings, please do not hesitate to contact us.

Yours sincerely,

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Foreword

Accompanying note by Dr. Paul Nillesen, Global Power & Utilities Advisory Leader, PwC

As the report by PwC New Zealand shows, the case for structurally separating electricity retail from generation at ownership level should be approached with considerable caution. While vertical integration can create competition concerns, economic theory and international experience suggest that integration between generation and retail is also a natural response to the unusual risk characteristics of electricity markets. Structural separation therefore risks eliminating an important risk-management mechanism for firms, while not addressing the underlying competition concern. Behavioural reforms that focus on (i) market access and generation competition, (ii) stimulating deep and liquid power markets, and (iii) effective market monitoring and regulation, help in ensuring competitive power markets at lower cost and quicker timescales.

Electricity retailers face a fundamental mismatch. They typically sell electricity to customers at prices fixed in advance while the quantity ultimately consumed is uncertain and the wholesale price of supplying that demand can be extremely volatile. Retailers can manage these exposures through forward contracts and other financial instruments, but contractual hedging is not necessarily a complete substitute for physical generation.

Academic work consequently identifies vertical integration as a form of natural hedge: losses in retail caused by rising wholesale prices are partly offset by higher generation earnings, while the reverse occurs when wholesale prices fall. For example, showing that vertical integration and forward contracting are alternative mechanisms for managing electricity-market risk, but that integration can provide protection that linear forward contracts cannot. Empirical studies also find material economies associated with vertical integration, including through the reduction of market and coordination risks.

The New Zealand experience illustrates the point particularly clearly. Following structural reforms in 1998, the market initially contained independent retailers, but subsequently reconsolidated around vertically

integrated generator-retailers, or “gentailers”. The most striking example was On Energy. By 2000 it had acquired more than 20% of the retail market but controlled only around 5% of generation capacity. During the dry winter of 2001 it was inadequately hedged and exposed to wholesale prices that rose dramatically. It subsequently exited retail. The experience illustrates that separation does not eliminate the economic incentives for vertical integration: firms may simply seek to recreate integration in another form to manage wholesale-market risk.

This does not mean that vertical integration should be unconstrained. Integration becomes problematic where control over scarce or pivotal generation assets allows a vertically integrated firm to disadvantage independent retailers, restrict contracting opportunities or exercise wholesale market power. The appropriate policy question is therefore not simply whether generation and retail should be separated, but whether independent retailers have access to the inputs and risk-management instruments required to compete effectively.

This points to two priorities. First, wholesale and forward markets should be sufficiently deep and liquid to allow retailers to hedge price and volume risk on reasonable terms. Thin forward markets increase the economic value of owning generation and therefore make vertical integration more, rather than less, attractive. Second, there must be sufficient competition in generation. Market design and competition policy should minimise circumstances in which individual generators own pivotal assets or capacity and can exploit that position either through wholesale prices or through the terms on which hedging products are made available to competing retailers.

The implication for remedies is important. Structural separation is a highly intrusive and potentially irreversible intervention and should therefore be considered only where a serious competition problem remains after less intrusive measures have been exhausted.

Behavioural and market-design remedies should come first. Examples include transparent and non-discriminatory access to wholesale and forward markets, market-making or liquidity obligations where appropriate, effective monitoring of wholesale conduct, restrictions on

discriminatory contracting, and measures addressing pivotal generation capacity. The New Zealand experience from over 25 years ago is a useful warning: structural intervention can produce unintended consequences, and the market may subsequently reorganise itself around precisely the economic risks that the structural remedy overlooked.

The objective should therefore be *contestability* rather than *separation* for its own sake. Where generation is competitive and independent retailers can obtain effective long-term hedges in deep and liquid markets, vertical integration need not prevent vigorous retail competition. The international evidence provides clear guidance, with strong examples from markets like New Zealand.

The discussion about market structure is strongly correlated with periods of elevated prices. The common argument being: prices are (too) high because of the way the market is organized, and firms benefit from this in the form of higher profits. The discussion about high energy prices is happening in almost all developed countries and is not the result of market structure because – as the PwC New Zealand report also demonstrates – it differs between countries. It is driven by five factors: (i) an investment cycle related to replacing ageing infrastructure dating from the 70s and 80s, (ii) infrastructure investments related to the energy transition, with new generation capacity and associated grids, (iii) a rise in levies and taxes associated with carbon costs and subsidy schemes for the transition, (iv) disappointing growth in electricity demand (and decline even in some markets) that push up average system costs, and (v) global energy shocks responding to geo-political and supply chain constraints.

Dr. Paul Nillesen

Global Power & Utilities Advisory Leader
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Disclaimer: Dr Paul Nillesen has been asked to provide his thoughts on retail and generation structures observed across the globe. This does not form part of PwC New Zealand's report and liability and responsibility for the content of the report sits solely with PwC New Zealand.

Foreword

Accompanying note by Simon Oates, UK Economics Leader, PwC

One of the clearest lessons from the UK's recent experience is that energy market design is not an abstract policy question. It has direct consequences for prices, resilience, investment and economic performance. When markets come under stress, the strengths and weaknesses of the system are exposed quickly. And when intervention is poorly targeted, it can solve one problem while creating another.

That is why the debate now underway in New Zealand matters. Although New Zealand's electricity market has its own distinct characteristics, the core questions are familiar across competitive markets. How do you promote effective competition while maintaining resilience? How do you improve consumer outcomes without undermining investment? And how do you respond to concerns about market structure without creating new risks elsewhere in the system?

In Great Britain, we have seen both the benefits and the limits of reform. Efforts to increase retail competition supported new entry and lower prices for consumers. But the disruption that followed Russia's invasion of Ukraine also showed how quickly problems can emerge when competition is not matched by sufficient resilience. A significant number of independent retailers lacked the hedging capability or financial strength to withstand sustained wholesale price volatility. The result was market disruption and higher costs for customers. The lesson is not that competition is undesirable, nor that any one market structure is inherently right. It is that reform must be judged in the round, with a clear understanding of both the benefits it may unlock and the risks it may introduce.

That principle is highly relevant to questions of generation and retail separation. Structural or behavioural interventions may help address some concerns, including barriers to entry or access to risk management products. But they can also create new complexities around hedging, risk allocation, capital requirements and investment incentives. As markets evolve through distributed generation, storage, electric vehicles, flexibility

services and more data-driven business models, those trade-offs are likely to become more, rather than less, complex.

From the UK's perspective, three disciplines matter if reform is to deliver durable benefits. First, intervention should begin with a precise understanding of the problem being solved, including the nature of any market failure and the scale of consumer detriment. Second, success must be defined clearly at the outset. Lower prices, stronger competition, greater resilience and better consumer outcomes do not always move together. Third, reform should be considered in the context of the wider system. Market structure cannot be separated from the operational, commercial and regulatory arrangements that support security of supply and long-term investment.

That is what makes this report timely. Drawing on both New Zealand and international experience, it considers the implications of different approaches to generation-retail separation through the lens of affordability, sustainability and security of supply. It also recognises an important truth in energy policy: there are rarely simple answers, and lessons from one market cannot be transplanted directly into another.

New Zealand's circumstances are unique, and its choices must reflect its own market conditions and policy objectives. But the UK experience does offer one clear message. Durable reform depends on confronting trade-offs honestly and testing policy against real-world consequences. In that respect, this report makes a valuable contribution to a more informed debate.

Simon Oates

UK Economics Leader
PwC

Disclaimer: Simon Oates has been asked to provide his thoughts on the UK and GB Energy Sector experience. This does not form part of PwC New Zealand's report and liability and responsibility for the content of the report sits solely with PwC New Zealand.



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Glossary

Key terms

Accounting separation	Separate reporting of generation and retail results within a single legal entity.
Day 1	Date when separated entities must be operationally ready.
Day 1 hedge	Initial arm's-length hedge protecting RetailCo and GenCo from wholesale-price exposure at separation.
Energy trilemma	Balancing electricity affordability, security of supply, and sustainability.
Financeability	Ability to obtain funding on workable terms given risks, contracts, credit quality and cash flows.
Firming	Generation, storage or demand response managing intermittency, peaks and dry-year risk.
Gentailer	Integrated company that both generates and retails electricity.
Hedge-market liquidity	Ability to buy or sell hedge products in sufficient volume without materially moving price.
Legal separation	Corporate separation of generation and retail into standalone entities with common ownership.
Market making	Quoting buy and sell hedge products to support liquidity and price discovery.
Natural hedge	Offset between generation earnings and retail supply costs when wholesale prices move.
Ownership separation	Corporate and ownership separation of generation and retail into standalone entities with different ownership.
Ring-fencing	Rules limiting information sharing, cost allocation or conduct between related units.
Vertical integration	Common ownership or operation of generation and retail within the same corporate group.

Key acronyms

C&I	Commercial and industrial	NDOs	Non-discrimination obligations
CFD	Contract for difference	OTC	Over-the-counter
EA	Electricity Authority (New Zealand)	PPA / PPAs	Power purchase agreement(s)
ERCOT	Electric Reliability Council of Texas	RetailCo	Retail business or entity
GenCo	Generation business or entity	RGM	Retail gross margin
HFO / HFOs	Huntly Firming Option(s)	RPCA	Retail Price Consistency Assessment
ITP	Internal transfer price	SME / SMEs	Small and medium-sized enterprise(s)
MBIE	Ministry of Business, Innovation and Employment	TSA / TSAs	Transitional service agreement(s)
MDAG	Market Development Advisory Group	VPP	Virtual power plant

Key New Zealand reports

2009 ComCom investigation	2009 Commerce Commission Electricity Market Investigation ⁴
2009 Ministerial review	2009 Electricity Technical Advisory Group (ETAG) & Ministry of Economic Development – Electricity market review ²⁰
2018 CEG	2018 Competition Economists Group Report on competition in New Zealand electricity markets ²⁴
2019 EPR	2019 Electricity Price Review ¹⁹
2021 Wholesale market review	2021 Review of wholesale market competition ⁵
2021 ITP consultation	2021 Internal transfer pricing and profitability ⁸
2023 MDAG	2023 Price discovery in a renewables-based electricity system ³⁰
2025 Frontier	2025 Frontier Economics – Review of electricity market performance ²¹
2025 LPF	2025 Level playing field measures ¹²
2026 NDO	2026 Non-discrimination obligations ¹⁸
2026 Market making review	2026 Market making review ¹⁶
2026 Super-peak decision	2026 Standardised super-peak hedge contract ¹⁵

Note:

1. Appendix 3 includes a full list of defined terms and acronyms.
2. Superscript numbers throughout this report refer to the bibliography, while slide-specific footnotes provide additional context or qualifications where needed.

Executive summary

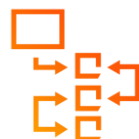


1.1

At a glance

Concerns with vertical integration and the potential benefits and costs of separation are well documented in international and New Zealand energy market reviews. Evidence of the net benefits of corporate separation and jurisdictions choosing this path are limited. Available evidence provides clearer support for targeted remedies directly addressing identified problems.

1 Vertical integration is an efficient risk management response and common structure in similar electricity markets to New Zealand



There are few electricity markets of similar structure to New Zealand which have chosen to mandate separation of gentailers. Vertical integration is a common model for managing energy market risks. It has re-emerged in several markets with many examples of standalone retailers adding generation to their portfolio as they expand in size.

2 Hedge market liquidity, product availability and competition are leading market concerns cited internationally and in New Zealand



A competitive retail market requires independent retailers to be able to access a complete range of baseload and peak hedging products, in sufficient volumes to trade in both normal and stressed markets. Regulators generally favour targeted measures to deepen hedge markets, such as standardised products and trading requirements, while viewing forced separation as a high-cost, blunt intervention with potential downside risks.

3 Conduct regulation is used in some markets to alleviate concerns over fair competition while retaining the benefits of vertical integration



Behavioural conduct and transparency measures are commonly used to manage competition risks in vertically integrated markets. These include non-discrimination and arm's-length dealing requirements, disclosures, and information ring-fencing designed to prevent gentailers favouring their own retail businesses in the supply and pricing of risk-management contracts. New Zealand applied gentailer Non-discrimination Obligations (NDOs) from July 2026.

4 New Zealand is aligned with international practice of favouring proportionate interventions over more intrusive forms of separation



New Zealand's approach of using targeted regulatory interventions to address risks associated with vertical integration aligns us with most of our international peers. The adoption of higher forms of separation is not common, and is not supported in New Zealand market reviews. Texas is the only comparable jurisdiction mandating legal separation. Western Australia trialled legal separation, but unwound it in 2014.

5 Corporate separation is expected to involve significant costs and risks that may be passed to consumers



Corporate separation of the gentailers would take multiple years to implement and involve significant one-off and ongoing costs, while introducing additional market and investor risk through the loss of the natural hedge. These impacts may be passed through in retail prices and potentially delay investment in the energy transition.

6 Targeted measures show stronger evidence of delivering better outcomes across the Energy Trilemma than more intrusive forms of separation



The benefits of more intrusive forms of separation are concentrated on potential affordability and competition outcomes, but the evidence is mixed with its high costs and risks often raised. Targeted measures provide clearer evidence of improved outcomes across affordability, incentives to invest in renewables, energy security and sovereignty, and market resilience.

1.2 Background to the work

This paper is the result of an independent review of the evidence from New Zealand and similar overseas markets for, and implications of, further separation of generation and retail activities within New Zealand's four gentailers.

Purpose and scope

This report presents an independent review of the evidence for, and implications of, further separation of electricity generation and retail activities within New Zealand's four largest power companies – commonly referred to as the "gentailers".

To inform dialogue on this topic, the four gentailers have commissioned PwC to undertake an independent review of:

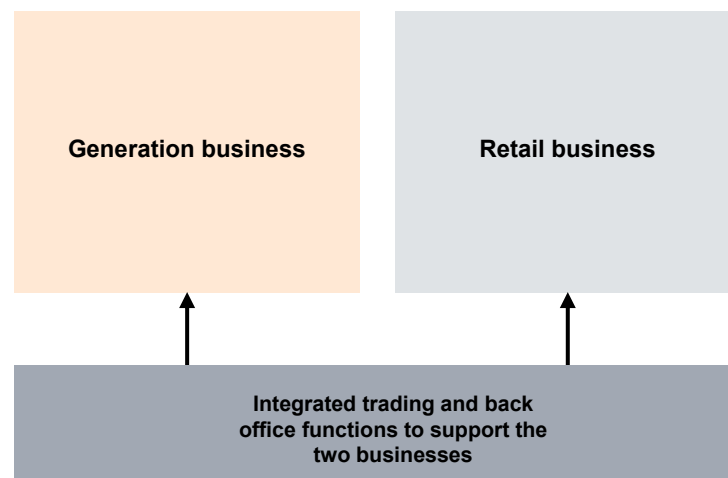
- available literature and evidence on the separation of retail and generation activities in New Zealand and relevant overseas markets
- the practical implementation considerations and market implications of further separation of the four gentailers.

The purpose of the review is to provide a broad base of evidence, analysis, and insights to support further dialogue on the merits and drawbacks of a spectrum of separation measures.

How are gentailers currently structured?

Gentailers combine electricity generation and retail activities within a vertically integrated business that generates electricity, trades in wholesale markets and competes for end consumers.

Vertical integration helps businesses manage wholesale and retail market risk exposure across an integrated portfolio through offsetting buy and sell positions. This creates a 'natural hedge'. Gentailers generally use internal transfer prices for accounting and performance-reporting purposes, although these do not necessarily determine retail pricing.

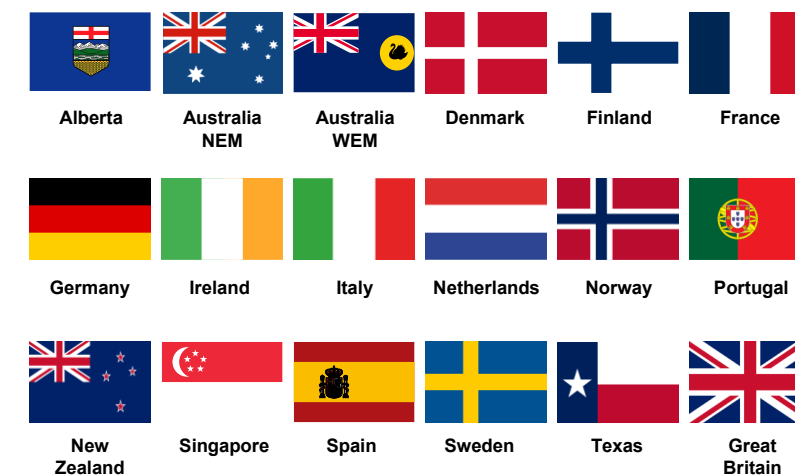


What markets have we sought evidence from?

17 comparable jurisdictions were shortlisted in our assessment, with markets selected based on four criteria:

- the presence of private commercial suppliers
- an independent competitive retail market
- active wholesale electricity markets
- a developed economy.

Applying this approach produced a shortlist of relevant jurisdictions (see below) across Great Britain, Ireland, Australia, North America, Singapore, and European markets.



1.3 Forms of separation considered

International experience reveals that ‘separation’ is not a single measure but a spectrum of policy and regulatory tools that can be applied, each with different requirements on industry participants.

Extent of separation required Least Highest	Separation option	Definition	Highest form of separation in each jurisdiction	Practical considerations if adopted in NZ
	1 No separation requirements	No specific structural or regulatory limitations on owning or operating retail and generation.	Denmark, Sweden, Norway, Finland	Not applicable
	2 Regulatory transparency & behavioural obligations	Regulation	New Zealand ^[1] , Australia (NEM) ^[2] , Western Australia WEM (post-2014), Germany, Netherlands, Singapore, Alberta, France, Portugal, Spain, Italy	Currently applies to New Zealand gentailers
	3 Accounting separation		Great Britain	12–18 months to implement - No transitional period \$10m–\$15m one-off costs per gentailer
	4 Functional separation	Virtual	Ireland	1–2 years to implement - Up to 1–2 years transitional period \$40m–\$80m one-off costs per gentailer
	5 Legal separation	Corporate	Texas Australia WEM (2006–14)	2–4 years to implement - Up to 3 years transitional period \$100m–\$190m one-off costs per gentailer
	6 Ownership separation		No examples	3–5 years to implement - Up to 3 years transitional period \$115m–\$235m one-off costs per gentailer \$28m–\$40m ongoing costs per gentailer p.a. - NZ would be alone in our comparable market set to apply this level of separation

Note:

[1] New Zealand's new non-discrimination regime falls principally within level 2, with selected information-control and governance features associated with functional separation.

[2] Australian power companies may be voluntarily legally separated, but there is no mandatory obligation. There are also observations of voluntary separation in European markets, and in New Zealand Trustpower/Manawa voluntarily separated in 2022 via the sale of its retail business to Mercury.

1.4 Current forms of separation adopted in New Zealand

New Zealand has aligned with other jurisdictions in regulating conduct, market liquidity and information flows while preserving vertical integration.

#	Type of Measure	Problem targeted	How it works	Implementation in other jurisdictions
1	Transparency and financial reporting	Transparency required over hedge transactions, pricing, and gentailer retail margins and costs to ensure competitive outcomes.	Retail Price Consistency Assessments (RPCAs) require disclosure of mass-market prices, costs and margin information, supported by verification and audit. Disclosure of hedge contract terms.	Common in European jurisdictions. Great Britain uses segmental reporting and disclosed internal-transfer bases, while European and Nordic markets apply wholesale reporting and surveillance.
2	Liquidity and product availability	Thin or unreliable trading limits, standalone retailer access to suitable hedges, and observable forward prices.	Require two-way quotes for standardised ASX electricity futures products and super-peak products, within prescribed volumes, spreads and maturities, supported by trading-data disclosure.	A number of jurisdictions have imposed market making obligations. For example, Great Britain imposed baseload and peak market making; Australia has applied market making and product-design interventions; France's Accès régulé à l'électricité nucléaire historique (ARENH) scheme provides competing retailers with regulated access to EDF's nuclear output.
3	Market conduct and contracting safeguards	Market power risk, competitive discrimination risk and weak contracting practices may undermine competitive wholesale outcomes.	Set conduct expectations, monitor generator offers, scrutinise large contracts and promote fair and efficient over-the-counter (OTC) dealing.	Market monitoring is standard across all studied jurisdictions.
4	Non-discrimination obligations	Risk that gentailers may favour their own retail arm when selling wholesale supply and hedge contracts, which could undermine competition.	NDOs require comparable treatment of internal and external buyers, backed by information controls, records, board oversight, RPCAs and external audit.	Many jurisdictions apply arm's-length or non-discrimination safeguards. For example, Great Britain and Ireland combine them with ring-fencing and market-access rules.
5	Targeted hedge contract regulatory controls	Bespoke or very large bilateral contracts may discriminate inefficiently, restrict access or shift costs to other consumers.	Large contracts must meet net-value and resale safeguards or obtain EA clearance. The voluntary OTC Code sets expectations for fair, liquid and efficient bilateral dealing.	New Zealand's clearance regime is relatively bespoke but a number of jurisdictions rely on regulated supply contracts, including Ireland, Singapore, Alberta and France.

1.5 Key considerations for and against separation

International evidence highlights market power and competition risks associated with vertically integrated structures, but also material costs, market resilience and risks associated with separation. This has generally led regulators to favour targeted interventions over separation.



Key concerns with vertical integration

Across the jurisdictions, regulatory attention clusters around four recurring market concerns:

- **Market power and restriction of competition:** Concentrated ownership of generation and wholesale risk management products can create a risk that individual firms have greater ability to influence market outcomes or constrain competitors, particularly where flexible or firming generation is difficult to substitute.
- **Availability of liquid wholesale and hedging products:** Independent retailers need suitable wholesale supply and risk-management products in sufficient volume, at transparent prices and on workable terms. Limited access to shaped, peak or firming products can constrain retail entry, competition and the ability of independent retailers to grow.
- **Discrimination against independent retailers:** Affiliated retailers may receive preferential pricing, contract terms, information or access to generation products. Several regulators have found that standalone retailers often face higher wholesale costs than vertically integrated peers. This partly reflects legitimate collateral, transaction and risk-management costs, but concerns arise where differences reflect discriminatory treatment rather than underlying transaction costs or risk.
- **Capture of market rents during times of shocks:** Incumbents controlling scarce or strategic generation may capture substantial scarcity rents during periods of fuel scarcity, low hydro inflows or other market shocks. Concerns arise where concentrated ownership of flexible generation strengthens pivotal-supplier positions or limits the ability of competitors to access equivalent risk-management products.

These concerns are generally more acute in concentrated or isolated markets. In Europe, interconnection and market coupling provide imports from other markets which provide an additional competitive constraint to nationally dominant vertically integrated suppliers.



Key concerns with separation

Counter concerns around higher market costs, risks and increased market fragility have been weighed by regulators internationally:

- **Loss of the natural hedge:** Vertical integration provides an efficient natural hedge between generation revenues and retail wholesale costs. Separation would require this protection to be replicated through external contracts, potentially increasing hedging costs, collateral requirements, working-capital needs, basis risk and dependence on market liquidity.
- **Costs of separation:** Separation would involve significant one-off implementation costs associated with separating people, systems, contracts, governance, financing and operational functions. It may also create ongoing potential dis-synergies and duplicate corporate costs.
- **Risk to investment and security of supply:** Separation does not create new generation, firming capacity or dry-year resilience. Transition uncertainty, transaction inefficiencies, weaker counterparties and changes to contracting arrangements may, however, delay investment.
- **Market fragility during shocks and scarcity:** Retailers without strong asset backing or effective hedge cover may be more exposed to wholesale price spikes, collateral calls, tightening credit and supplier failure during periods of market stress. Separation could increase the vulnerability of the market to market shocks or prolonged scarcity events.
- **Risk of transition and unintended market outcomes:** Separation requires complex decisions around assets, contracts and risk allocation and may take multiple years to implement. Poor design or implementation can create unintended outcomes, as illustrated by Western Australia, where generation and retail were separated in 2006 and re-integrated in 2014 following financial sustainability, risk-allocation and coordination concerns.

These concerns are commonly cited as reasons to favour more targeted and lower-cost regulatory interventions.

1.6

Summary of New Zealand market review findings on gentailer separation

New Zealand market reviews have considered gentailer separation and have concluded that higher forms of separation are not recommended, instead preferring more targeted measures.

NZ reviews highlight gentailer market power risk but find no evidence of anti-competitive behaviour

The Commerce Commission investigated gentailer market power in 2009. It concluded that each periodically exercised wholesale market power but no anti-competitive purpose or breach of competition law was found.

*"The Commission considers that each of the four largest gentailers - Contact, Genesis, Meridian and Mighty River Power - is likely to have held substantial market power on a recurring basis, particularly during dry years...The Commission has found no evidence of an anti-competitive purpose...This behaviour does not meet the criteria of 'taking advantage' of market power for a proscribed purpose, namely the hindering or deterring of competitors, under section 36 of the Act, and is therefore not a breach"*³

The EA's more recent Level Playing Field market review (2025 LPF) made a similar conclusion:

*"...no evidence has been provided that causes us to definitively conclude that the exercise of market power to reduce competition is occurring. However, the risk that market power is being exercised remains clear."*¹³ [Paragraph 6.27]

Targeted measures have continually been favoured over higher forms of separation

2019 Electricity Price Review (EPR):¹⁹

"We do not favour the option of forcibly separating the generating and retailing activities of vertically integrated businesses. We consider the benefits of vertical integration outweigh the costs, even after the costs of promoting competition in a vertically integrated industry are included. Forced separation would also be disruptive, undermine investor confidence and stall or delay the huge amount of generation investment" [p. 41]

The 2023 MDAG review:³⁰

"We have also considered whether a retail-generation split would improve competition for flexible supply. The short answer is no, because the source of the market power (i.e. a concentration of ownership for flexible supply assets) would be unchanged by such a split." [Paragraph D.53]

MDAG recommended a specific form of virtual disaggregation (i.e. requiring a portion of flexible supply to be offered to market on regulated terms) but only as an escalation mechanism. The EA later abandoned plans for a formal escalation pathway (that may have considered separation), as part of its 2026 NDO decision.

The 2025 Frontier report concluded that scarce fuel and firm generation capacity, rather than gentailer structures, drove stressed-market outcomes:

*"...the proposals for non-discrimination of contracts and virtual disaggregation of the gentailers should not be adopted as these options will not resolve the underlying issue in the market"*²¹

The EA's 2025 Level Playing Field review (2025 LPF) considered but did not recommend accounting or legal separation:

"We are not persuaded that more significant interventions can be justified on the basis of the evidence of the problem definition:

- Corporate separation would represent a significant shift in operating model and would likely require primary legislation. It also represents the most expensive option, requiring structural change to gentailers' businesses. This would result in the loss of the existing efficiencies associated with vertical integration (e.g. resources, systems and risk management)...*
- While accounting separation would improve transparency, we do not consider that the introduction of accounting separation would be justified at this time, given the potentially significant costs and difficulties involved. The incremental benefit of transparency beyond the RPCA would not justify this intervention"*¹⁸ [Paragraph 5.35]

NDOs were instead introduced as a 'low-cost' and 'targeted' response, requiring gentailers to supply risk management contracts on a non-discriminatory basis to standalone retailers.

1.7 Summary of overseas evidence on generation-retail separation

While market power concerns remain, vertical integration is not considered anti-competitive in itself, and generation-retail separation alone does not resolve hedge liquidity, fair access or market resilience concerns.

Market power and restriction of competition

International evidence highlights scrutiny over market power and conduct, but vertical integration itself is not seen as inherently anti-competitive. For example:

- EU competition law cases against E.ON in Germany and EDP in Portugal identified market power and competition risk. E.ON voluntarily split and EDP's merger application was declined.
- In Australia, the ACCC opposed AGL's acquisition of Macquarie Generation over concerns that it could reduce hedge-market liquidity and weaken retail competition. The acquisition was nevertheless authorised, finding that public benefits outweighed likely detriments.⁵²
- The UK Competition and Markets Authority (CMA) reached a different overall conclusion in Great Britain. After an extensive investigation, it found that vertical integration itself did not have an adverse effect on competition.

Wholesale and forward-market depth

Independent retailers require fair access to wholesale supply and risk-management contracts, including from large competitors. These products must be available in sufficient volumes and on workable terms to support retail entry, competition and growth. Separation does not solve this challenge, which arises even in markets where legal and functional separation are present (e.g. Texas, Australia and Ireland).

Across the jurisdictions reviewed regulators have more commonly sought enhanced market and consumer outcomes through targeted pro-competitive measures (e.g. contract-access obligations, market-making, transparency rules and conduct controls) over more intrusive forms of separation. For example:

- In Great Britain, Secure and Promote rules required designated firms to quote standard baseload and peak-load products.
- Ireland's Directed Contracts, France's ARENH regime and Alberta's PPAs similarly release incumbent generation output to competing suppliers without changing ownership.
- Texas implemented multiple measures alongside legal separation, with constant refinement to better address wholesale market concerns as they arose.

Fair access to wholesale products

Vertical integration may lead to a perception that a firm will favour its own retail business over its competitors. Jurisdictions have addressed this risk through transparency and conduct measures that limit the ability of dominant firms to transfer advantages between generation and retail. These include non-discrimination rules, accounting separation, information barriers, operational ring-fencing and arm's-length transaction requirements. Key evidence includes:

- Great Britain's generation licence conditions.
- Ireland's ring-fencing arrangements.
- Western Australia's post re-merger rules.

Fragility during shocks and scarcity

Standalone retailers can become vulnerable when wholesale prices spike, hedge supply tightens, collateral calls rise or counterparties withdraw. Evidence points to higher failure rates and limits on entry and expansion during these times. Vertical integration can strengthen both firm-level and market resilience due to the natural hedge, but does not guarantee consumer protection or physical supply of energy.

Experience in Great Britain, France and Australia during periods of market stress, including the 2022 energy crisis, demonstrates how under-capitalisation and insufficient hedging can contribute to the failure of standalone retailers, resulting in forced customer transfers and wider market costs. Vertically integrated businesses were generally less exposed to these risks. New Zealand has its own notable example of this in the failure of On Energy in 2001 due to wholesale market stress.

Independent retail resilience is affected by a range of factors, including prudential standards, hedge liquidity, fallback supply arrangements, fuel and capacity security, consumer protections as well as their own hedging and commercial structure decisions.

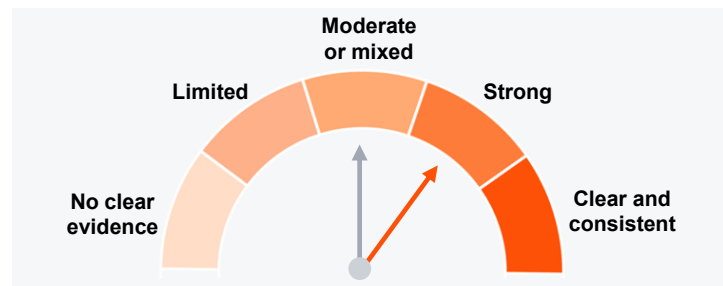
1.8

Summary of evidence against the Energy Trilemma outcomes

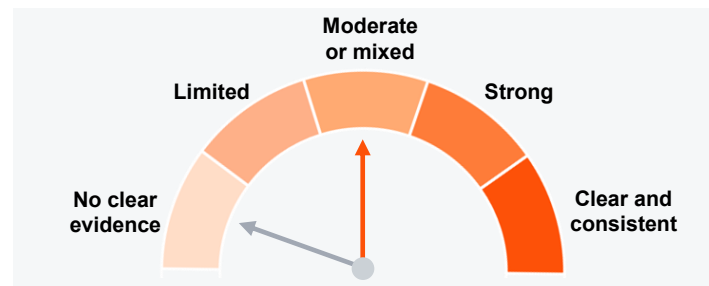
Available evidence shows targeted regulatory measures provide more conclusive net benefits than more intrusive forms of separation.

Evidence-based assessment

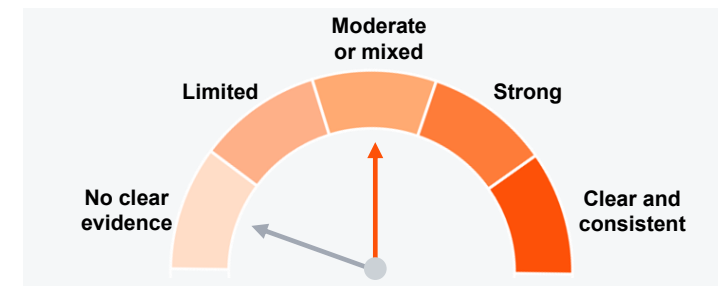
- Corporate separation
- Less intrusive or targeted regulation/separation options^[1]



Affordability



Security of supply



Sustainability

Summary of evidence

Evidence indicates that corporate separation could improve hedge transparency, retail competition and arm's-length wholesale dealing, although direct evidence of flow-through impacts to consumer prices is limited. In Texas, legal separation supported by targeted regulatory measures have been in place for over 25 years, but the evidence is inconclusive on its impact on consumer prices.

In choosing not to pursue higher forms of separation, many jurisdictions noted risks to affordability from removing the natural hedge, raising collateral and funding costs, and increasing exposure to wholesale price shocks. Targeted measures, such as improved hedge access, market-making, switching tools, market-power remedies and better flexibility-market settings, have been used more commonly to target areas of concern, and improve access and conduct while retaining integration benefits.

Separation could improve transparency, arm's-length access to firming and shaped products, and opportunities for independent investment and flexibility services. However, there is no clear evidence it increases physical firming capacity or dry-year resilience, potentially adding transition uncertainty, weakening retailer credit and reducing the pool of investment-grade counterparties. Targeted measures have been used offshore to more directly address resilience improvements in markets with vertical integration.

Separation could improve arm's-length access to offtake and PPAs for independent renewable developers and reduce concerns of gentailers favouring their own projects. However, the reviewed evidence does not establish that separation accelerates renewable investment. Transition uncertainty and greater reliance on external firming and offtake may delay projects given New Zealand's lower secondary market liquidity. Overseas markets, including Texas which has enforced legal separation, have focused on targeted liquidity reforms to improve hedge market and PPA access and targeted incentives to meet sustainability goals.

Note:

[1] 'Less intrusive options' includes accounting separation, functional separation, enhanced regulatory oversight and targeted hybrid measures. Legal separation is expected to have implications closer to ownership separation than to targeted regulatory measures.

1.9

Practical implementation considerations of ownership separation

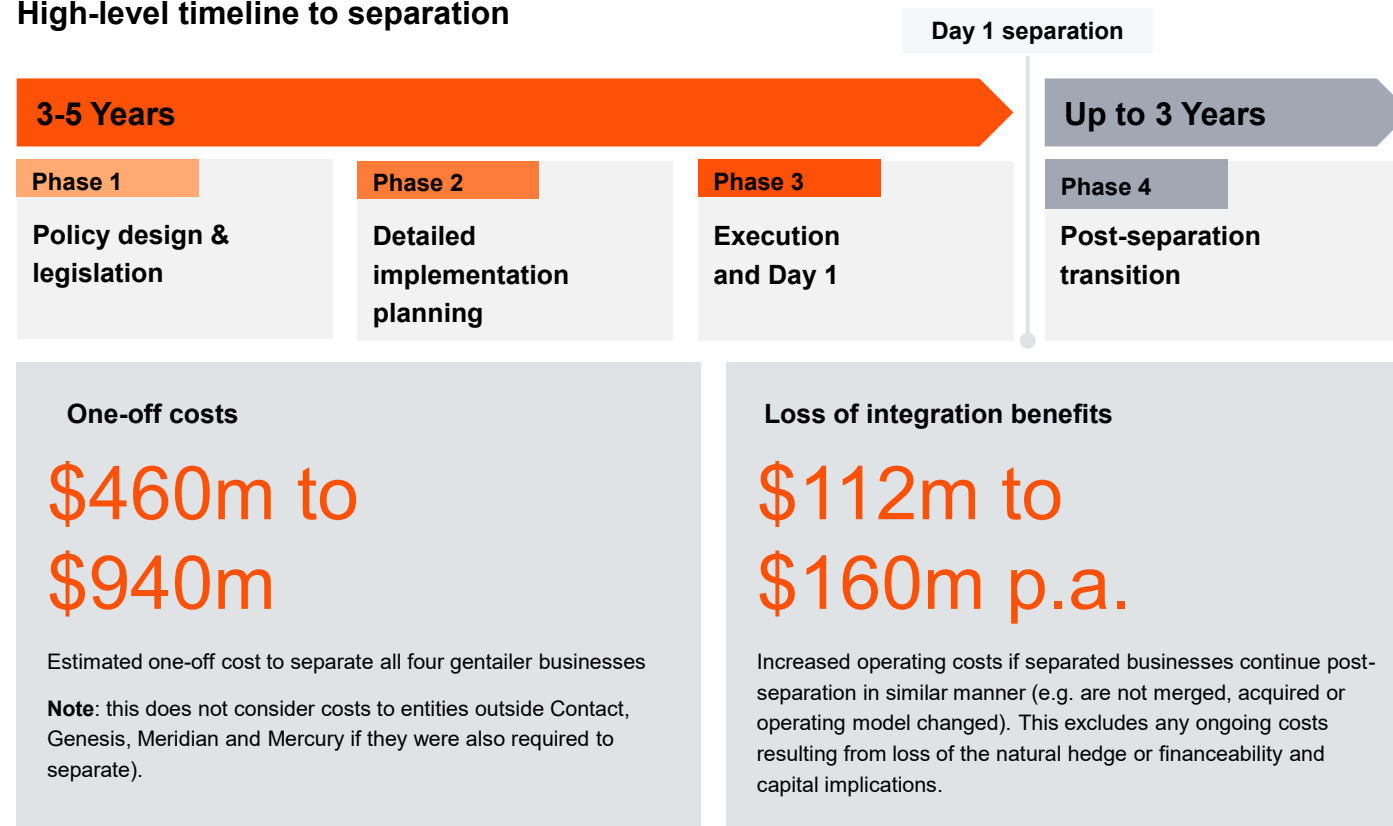
Ownership separation of New Zealand's gentailers is expected to be complex, costly, and take time to implement.

There are a number of practical implications to be aware of when considering ownership separation of the gentailers.

- 1. Regulation and market design:** Ownership separation would likely require primary legislation and supporting regulatory refinements to govern the new generation and retail business structures (GenCo and RetailCo respectively).
- 2. New organisation design and readiness:** Establishing clear delineation for the new RetailCo and GenCo businesses, path to separation and ensuring organisations are ready to operate independently (likely with transitional services) from Day 1. This is not as clear as may be assumed, as lines between retail and generation are becoming increasingly blurred with the move to greater distributed generation and responsive demand. Market rules would also need to be in place for other generators and retailers, including restrictions on those businesses entering retail and generation markets respectively.
- 3. Establishing new hedging arrangements:** A complex task to ensure appropriate risk management and market settings from Day 1.
- 4. RetailCo financeability and capital requirements:** Standalone RetailCos could require more liquidity, capital and collateral to support its market and contractual obligations, given large contract positions, potential market exposures and small asset backing.

High-level estimates are provided opposite for ownership separation. These exclude the costs of the loss of the natural hedge, increased regulatory monitoring and compliance activities. Estimates for other separation options are provided in Section 6.

High-level timeline to separation



2

Introduction



2.1 Purpose and scope

An independent review of the evidence and implications of separating electricity generation and retail activities.

Purpose

This report presents an independent review of the evidence for, and implications of, separating electricity generation and retail activities within New Zealand's four largest power companies^[1] – commonly referred to as the “gentailers”.

Tight supply conditions, energy security concerns and elevated energy prices have increased public and political scrutiny of the role of the four major power companies in New Zealand. Debate on gentailer market power and whether further changes should be made to electricity market structures has consequently re-emerged. Political parties and other stakeholders are now considering energy market reform with potential changes to gentailer structures as a possible response.

To inform dialogue on this topic, the gentailers have commissioned PwC to undertake an independent review of:

- available literature and evidence dealing with the separation of retail and generation activities in New Zealand and relevant overseas markets
- the practical implementation considerations and market implications of further separation of the four gentailers.

[1] Contact Energy Limited (Contact), Genesis Energy Limited (Genesis), Mercury NZ Limited (Mercury) and Meridian Energy Limited (Meridian) (together, the “gentailers”)

The scope of the review includes:

- **Consideration of relevant separation options**, including corporate, accounting, and functional separation as well as regulatory oversight and behavioural measures.
- **Collating, reviewing and synthesising evidence** from New Zealand and relevant overseas markets.
- **Examining market structures and insights from relevant overseas markets**, drawing on PwC's global energy and regulatory specialists.
- **Assessing the practical implementation considerations of further separation of the gentailers**, including investment, commercial, operational and transitional matters. This assessment was supported by workshops and information requests involving the gentailers.
- **Exploring the potential implications of separation options on New Zealand energy market outcomes**, having regard to the energy trilemma framework, and underlying evidence categories that support it.

The purpose of the review is to provide a broad base of evidence, analysis, and insights to support further dialogue on the merits and drawbacks of a range of separation measures.

Matters falling outside the scope described above included legal, financial and investment advice, recommendations on different separation options, and an evaluation of the merits of different policy proposals.

Importantly, the review does not make recommendations, and it does not advocate for or against any particular separation option or for the status quo. Its purpose is to draw together insights and learnings from other geographies on regulatory approaches, market settings and industry structures relevant to New Zealand energy outcomes.



Note: Superscript numbers throughout this report refer to the bibliography, while slide-specific footnotes provide additional context or qualifications where needed.

2.2 Approach

A practical, evidence-led assessment grounded in the energy trilemma, real-world experience and expert review.

PwC has sought to present the available evidence and real-world insights in an objective and practical fashion. Our methodology comprises the following principal elements.

Global and local literature review

PwC collated, reviewed and synthesised a broad body of New Zealand and international evidence relating to the separation of generation and retail activities, and considered relevant market contexts and concerns in which separation is being assessed. The sources drawn upon include academic literature, expert reports, legislative and market frameworks, policy and regulatory consultations and decisions, and market commentary.

We use this to draw together insights and themes from relevant markets, including the circumstances in which different forms of separation have been adopted and the outcomes they produce.

Where evidence is contested, incomplete or context-specific, we have identified those limitations. We also distinguish between findings that are well supported and those that are more uncertain or depend on the particular features of a given market.

A broad range of overseas markets is considered. The final shortlist of relevant jurisdictions includes Australia, Great Britain, the Single Electricity Market (SEM) of Ireland and Northern Ireland, Europe, the 'Nordics', Texas, Alberta and Singapore.

Markets were selected based on four criteria:

- The presence of private commercial suppliers.
- An independent competitive retail market.
- Active wholesale electricity markets.
- A developed economy.

Assessment frameworks

In assessing the potential implications of different separation options for New Zealand, we have used the energy trilemma – affordability, sustainability and energy security – as a guiding framework.

We have had regard to the long-term benefit of consumers, workable competition, and economic efficiency, which are guiding principles adopted in New Zealand energy policy and regulatory frameworks.

Real-world case studies

To assess practical implementation considerations, we worked with each of the gentailers to understand their business structures and the investment, commercial, operational and transitional issues that could arise under a scenario of ownership separation.

The information provided has been analysed in the context of real-world examples in which separation has been implemented, proposed or attempted. The report presents case studies and precedents, which includes the Telecom NZ demerger, Trustpower demerger, the formation of the Texas ERCOT market, the failure of On Energy, and attempts to separate Western Power in Western Australia and EDF in France (Project Hercule).

International insights and peer review

The report has been peer reviewed by PwC energy-market, competition and regulatory specialists, Dr Paul Nillesen (PwC Strategy& Netherlands) and Simon Oates (PwC Strategy& UK).

Paul leads our Dutch Energy & Economics practice and advises globally on energy-market structures, regulation, competition and the energy transition. He is familiar with New Zealand's electricity market, having co-authored published academic research on ownership unbundling and market outcomes.

Simon leads our UK economics consulting practice, specialising in regulation, competition and government policy. He has held senior roles across government, regulators and regulated corporations, bringing practical experience of regulatory decision-making and market reform.

Their reviews are summarised in the foreword to this report and has helped to test our analysis against international experience and expert perspective. We have also sought input from PwC experts in other jurisdictions to corroborate our findings.

3

Review context



3.1

Background

Separation of the gentailers has been debated from time to time, usually in response to affordability pressures, wholesale-price spikes, and competition and security concerns.

How are gentailers currently structured?

Gentailers operate generation and retail businesses within a vertically integrated company. They operate in wholesale markets (e.g. sale and purchase of electricity inputs and risk management products) and in retail markets competing for end consumers.

New Zealand's gentailer model emerged from reforms in the 1990s that separated monopoly transmission and distribution networks from competitive generation and retail sectors, and divided the Electricity Corporation of New Zealand (ECNZ) into competing generation businesses. The reforms did not require generation and retail to be separated from one another, allowing firms to operate across both activities as vertically integrated gentailers.

The nature of this vertical integration creates a 'natural hedge', allowing gentailers to manage wholesale and retail market risk across a combined portfolio. Gentailers generally use internal transfer prices for accounting and performance-reporting purposes, although these may not explicitly determine retail pricing.

By contrast, standalone retailers meet their electricity needs through wholesale market purchases and manage price exposure through a mix of financial hedges, and PPAs. A number have incorporated generation into their business structures and are now vertically integrated (e.g. in New Zealand Pioneer/Pulse, Nova and Lodestone).

What is separation?

In the extreme, separation refers to mandated ownership separation of generation and retail into independent businesses.

However, the literature identifies a spectrum of measures, including accounting, functional and legal separation, which involves ring-fencing business activities, reporting, systems, governance and decision-making within a corporate group.

Regulation can also be used to impose transparency and behavioural obligations on gentailers to ensure they act fairly and separately. These can include pricing and retail-margin disclosures, behavioural rules governing non-discriminatory dealings with independent retailers and generators, restrictions on cross-subsidisation, and mandatory trading or market-making obligations intended to improve hedge-market liquidity.

See Section 3.7 for further discussion on separation options.

What resulted from previous NZ reviews?

Periodic market reviews are an important feature of a well-functioning regulatory system. They provide the opportunity to assess whether market settings remain fit for purpose, identify opportunities for improvement, and respond to changes in market dynamics, investment settings and technology.

Such reviews may also reflect the priorities of incoming governments or ministers. A recurring area of focus in recent reviews is whether the structure of the market allows firms to exercise market power or create barriers to effective competition.

Gentailer separation has been explicitly considered in several New Zealand market reviews. It has sometimes received greater attention during periods of high prices, constrained supply or concerns about competition, and these conditions are part of the wider context rather than the sole reason for a review.

Previous reviews have considered most forms of gentailer separation but most did not support or recommend further separation due to the costs and risks involved or its poor targeting of the market problem.

Can separation improve market outcomes?

The effects of separation depend on the form of separation adopted, the market issue it is intended to address, and the wider design of the electricity market.

Cited benefits of separation identified in the literature include greater market transparency, reduced risk of discriminatory conduct or cross-subsidisation, and improved confidence that independent participants can access wholesale supply and risk-management products on comparable terms.

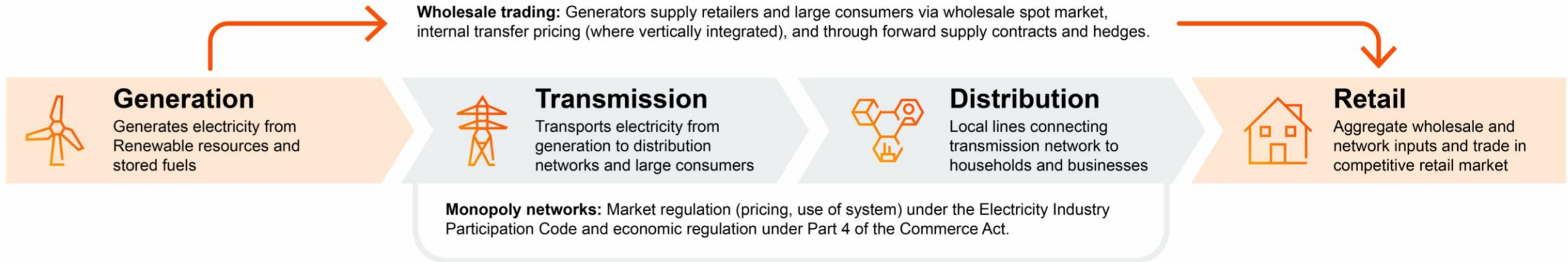
Potential costs of ownership separation include implementation and transaction costs, higher trading risk and risk-management costs, greater retail exposure to wholesale price volatility and market shocks, and possible effects on financing costs and investment incentives.

Lighter forms of separation are also available to regulators and are often used in New Zealand and internationally as targeted tools in the management of specific market concerns or problems. Measures implemented to date in New Zealand have generally focused on targeted, pro-competitive disclosures, interventions and behavioural rules.

See Section 4.6 for a summary of separation measures already applied to the gentailers.

3.2 Current market structure

The New Zealand electricity market structure separates competitive generation and retail activities from the provision of monopoly transmission, system operator and distribution lines services.



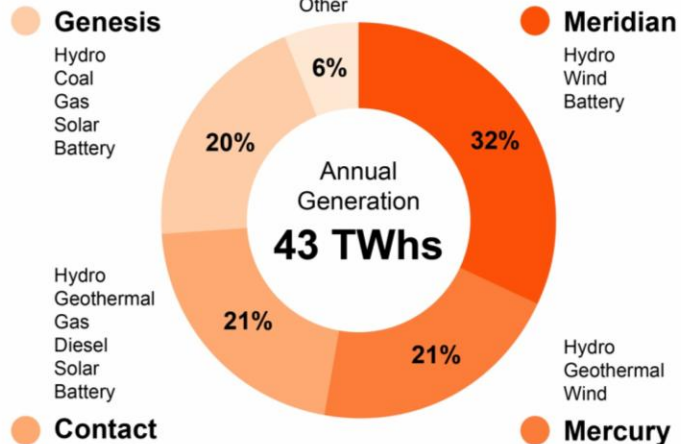
Installed Generation
9,750 MW



Generation pipeline
26,118 MW



Average wholesale price:
12c per kWh
10-year average



No. of Retailers:
49



10 Year Switching Rate
26,118 MW



Average residential price:
42c per kWh
May 2026

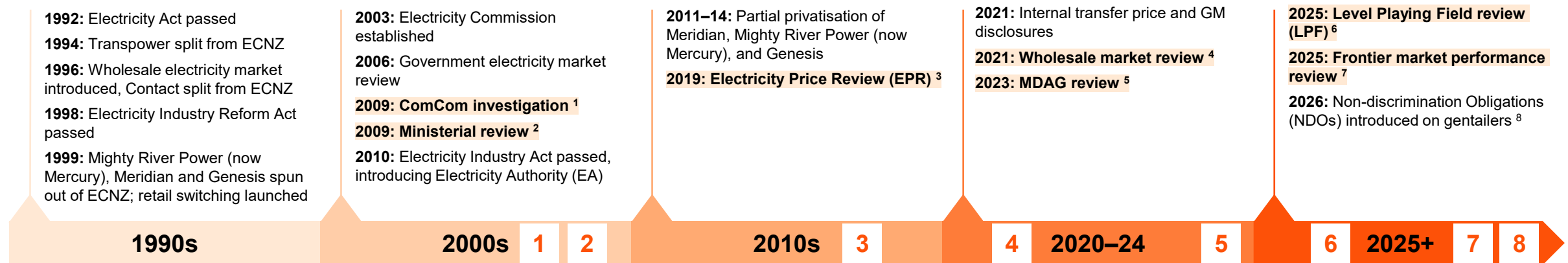


3.3

History of New Zealand market structure reforms

New Zealand electricity market evolution has followed Great Britain and Australia, prioritising privatisation, ring-fencing of monopoly networks, and pro-competitive and energy transition enabling market reforms.

Wholesale market key events



Key reviews: outcomes and insights

- 2009 ComCom investigation.** Found gentailers each held wholesale market power and periodically exercised it. As part of this review, Wolak estimated market-power rents over a six-and-a-half-year period of \$4.3 billion. This was contested by a number of economists over the treatment of hydro opportunity costs and gentailer incentives to exercise market power, and was subsequently viewed by Treasury as not credible. The Commission concluded there was no anti-competitive purpose or Commerce Act breach and left wider regulatory responses to the contemporaneous Ministerial Review.⁴
- 2009 Ministerial review.** Recommended virtual asset swaps and hedge-market reforms, including standardised contracts, clearing and market-making. It considered gentailer separation but found it unlikely to deliver net benefits.²⁰
- 2019 EPR.** This found uneven retail competition benefits, barriers for independents, and wholesale contract-market weaknesses. It resulted in internal transfer price and retail gross margin disclosures.¹⁹
- 2021 Wholesale market review.** This review followed sustained high prices since mid-2018 and concluded structural reform was not justified by available evidence and preferred conduct monitoring, support for new entrant retailers and demand response.⁵
- 2023 MDAG.** Identified a risk that declining thermal generation could weaken competition in longer-duration flexibility. Recommended targeted measures first, with market-making and virtual disaggregation as contingent backstops.³⁰
- 2025 LPF.** This paper, developed by the EA through the Energy Competition Task Force, examined concerns that independent participants may face limited or unequal access to hedge and firming products. It assessed NDO, accounting separation, negotiate-arbitrate arrangements and legal separation, and concluded that principles-based NDOs were the most proportionate first response, with stronger interventions retained as backstops.¹² NDOs were introduced on 1 July 2026 arising out of the LPF review, requiring the gentailers to supply price risk-management contracts on a non-discriminatory basis.¹⁸
- 2025 Frontier.** Commissioned by Ministers, it assessed if current market settings supported affordability, reliability and investment. It found the energy-only market encouraged renewables but did not adequately provide dry-year fuel security and long-duration firming. The Government supported action on dry-year security but did not pursue proposals for a new Crown firming entity or further gentailer privatisation.²¹

3.4

Distinguishing network and generation-retail separation

Network unbundling and generation-retail separation are distinct measures addressing different problems and resting on different economic foundations.

A critical distinction is drawn between two forms of vertical separation that are sometimes conflated in discussion.

Network separation (or unbundling) is the separation of transmission and distribution networks from generation and retail. It is conceptually and practically different to the separation of generation from retail supply. Network unbundling addresses the non-competitive and natural monopoly characteristics of network infrastructure. Network competition is seen as not viable as networks cannot economically be duplicated, due to the high barriers to entry and material economies of scale.

Vertically integrated firms that control both networks and supply (generation and retail) may be incentivised to subsidise their competitive wholesale and retail elements from their non-competitive network business, and to prioritise access to the network.

The economic rationale for network unbundling is well-established and broadly uncontested in the academic and policy literature.

Practically, it allows for ring-fencing of the non-competitive part of the value chain so that economic regulation can be applied (e.g. regulated revenues).

Generation-retail separation addresses a different question: whether common ownership of electricity supply and retailing permits a firm to discriminate against standalone retailers in accessing wholesale inputs to the detriment of competition.

The two forms of separation serve different purposes and rest on different economic foundations.

Where this report discusses other jurisdictions, care is taken to distinguish between obligations arising from network unbundling requirements and any distinct measures addressing generation-retail integration.

A final consideration, horizontal separation (ring-fencing of strategic generation assets) is a further form of separation. This has been explored in NZ within market reviews and by market participants, but has not gained the required level of support. Detailed examination of benefits and costs of horizontal separation is outside the scope of this work.

Key takeaway: Network separation refers to separating interests in monopoly assets from competitive markets. Gentailer separation is about creating separation of interests between two competitive markets.

Case study:

Telecom separation is not directly relevant

The Telecom NZ demerger, finalised in November 2011, is an often-cited example of the benefits of ownership separation. It is used as evidence of the potential benefits of gentailer separation, although it's not directly comparable.

Why did Telecom separate?

The driver for Telecom to separate was for it to be able to participate in the government's initial \$1.35b Ultra-Fast Broadband (UFB) programme.

Telecom was given the choice of not participating in UFB and competing against a new government-backed fibre network with its legacy copper network, or separating its business at Layer 2 (a demarcation of the fibre network). It chose the latter.

The demerger resulted in Chorus (i.e. the regulated infrastructure network) and Telecom (now Spark) (i.e. the retail, wholesale and mobile business).

Parallels to gentailer separation

The Telecom demerger separated a monopoly fixed-line network from competitive retail and wholesale telecommunications services.

This Telecom example is therefore more akin to the electricity market reforms of the late 1990s where networks were separated from retail and generation to avoid cross-subsidisation.

The experience in 1990s electricity reform (separating monopoly assets from competitive markets) was often cited as an example when UFB separation policy was being developed by the government.

Further parallels with gentailer separation are limited. Spark primarily retails network access and wholesale services rather than producing the content carried over the network. Gentailer separation is closer to separating the producer of content from the retailer that sells it.

Source(s): Spark NZ, Telecom Scheme Booklet, PwC

3.5

Vertical integration is a choice on the boundary of the firm

The theory of the firm is not jurisdiction-specific: the same economic principles govern vertical integration across markets, even if their effects differ by context.

Why firms choose to integrate

Vertical integration is fundamentally a make-or-buy decision. A firm can obtain wholesale inputs or services through an arm's-length market transaction, or bring that activity within its own organisational boundary.

Neither arrangement is costless. Market transactions require search, negotiation, contracting, monitoring and enforcement, while vertical integration requires investment in long-life assets, fundamentally changing the risk profile of the firm and bringing its own management and coordination costs. Integration becomes more attractive where market transactions are complex, uncertain, difficult to specify in advance or depend on investments that have substantially greater value within a particular relationship.

Ownership changes control, risk and incentives

The boundary of the firm also determines who controls assets and who has the incentive to invest, adapt and perform when contracts cannot specify every future contingency. Bringing an activity inside the firm can improve coordination, internalise spillovers and reduce exposure to renegotiation or hold-up.

Integration can also weaken the stronger incentives that standalone owners or counterparties may have to invest, innovate or respond to local conditions. The theoretical choice is therefore not simply between more or less coordination: it involves a trade-off between control, coordination, risk and incentives, and there is no single organisational form that is efficient in all circumstances.

Vertical integration does not imply dominance

Vertical integration describes the organisation of activities across stages of a supply chain; dominance describes a firm's competitive position within a market. The two are conceptually distinct. A vertically integrated firm need not be dominant, and a dominant firm need not be vertically integrated. There are many vertically integrated power companies in New Zealand ranging in size from medium to large. No one firm has more than ~25% of the retail market.

Integration can nevertheless alter competitive dynamics where the structure enables a firm to disadvantage rivals, for example through foreclosure, discriminatory access or raising rivals' costs. But theory does not imply that these outcomes are inevitable. The same integration can reduce transaction costs, improve coordination and eliminate duplication of margins, so its ultimate effect on prices and consumer welfare can be hard to unpick and needs to be assessed in context.

The Lafontaine and Slade (2007) review²⁷ found that even in industries selected because exclusion was considered plausible, around half of the studies found no evidence of foreclosure; where foreclosure was identified, efficiencies were also sometimes observed. More broadly, the authors conclude that the empirical evidence generally finds voluntarily chosen vertical integration to be efficiency-enhancing, including for consumers, while imposed separation has often resulted in higher prices or lower service. Their review therefore cautions against treating vertical integration itself as evidence of harm; its effects need to be assessed in the circumstances of the market concerned.

The EA has recognised the merits of different business models and the value of diversity in market offerings and business structures as a feature of a healthy competitive market.¹² [Paragraph 3.19]

Vertically integrated and standalone retailers provide different ways of managing risk, deploying capital and serving customers, giving investors and market participants a range of risk-return profiles and routes to market.

Notable characteristics

Vertical Integration

- Natural hedge to wholesale and retail market variability and more resilient to market shocks
- Typically lower prudential, collateral and liquidity costs with lower external hedging on net sales/purchases
- Operational synergies from common head office functions
- Capital intensive model with investment risk in long-life assets

Standalone Retailing

- Less capital intensive model focusing on working capital and system investments
- Purchases majority of wholesale inputs and hedges in market
- Flexibility to target competitive niches and customer segments
- Supports consumer choice through diversity of offerings

3.6 Gentailers and the role of the natural hedge

Vertical integration provides a natural hedge which helps manage portfolio risk across the business, but which could give rise to competition concerns if wholesale inputs are tightly held and unfairly traded.

The role of the ‘natural hedge’

Gentailers manage their generation and retail business across an integrated portfolio, with generation providing a natural offset against the wholesale cost of serving retail load. Portfolios will commonly be long (net seller to the market) or short (net purchaser) at different times, locations and contract horizons, meaning gentailers still purchase and sell electricity and hedge products through wholesale and contract markets.^[1]

This structure creates a natural hedge that helps manage portfolio risk and reduces gross margin variance. For example, when wholesale prices rise, a generator earns more on generation output, while a retailer faces higher purchase costs and lower retail margins if it is unable to pass costs on in competitive markets. Within an integrated group, those effects can partially offset each other to the extent generation covers retail load.

Standalone retailers and net purchasers typically choose to hedge their supply commitments through forward supply and firming contracts. Where hedge markets have breadth and depth and prices are efficient, it is possible to create a hedge book that mimics a vertically integrated portfolio. There may, however, be transaction costs, trading risk, prudential requirements, and counterparty risk that add a premium to trading in this way.

Alternatively, standalone retailers can invest or integrate with their own generation, as many have done (e.g. Pulse, Nova).

A natural hedge can reduce portfolio risk and support investments in generation by lowering exposure to price volatility and reducing dependence on external hedge products which incur transaction, trading and counterparty-related costs.

Competition concerns

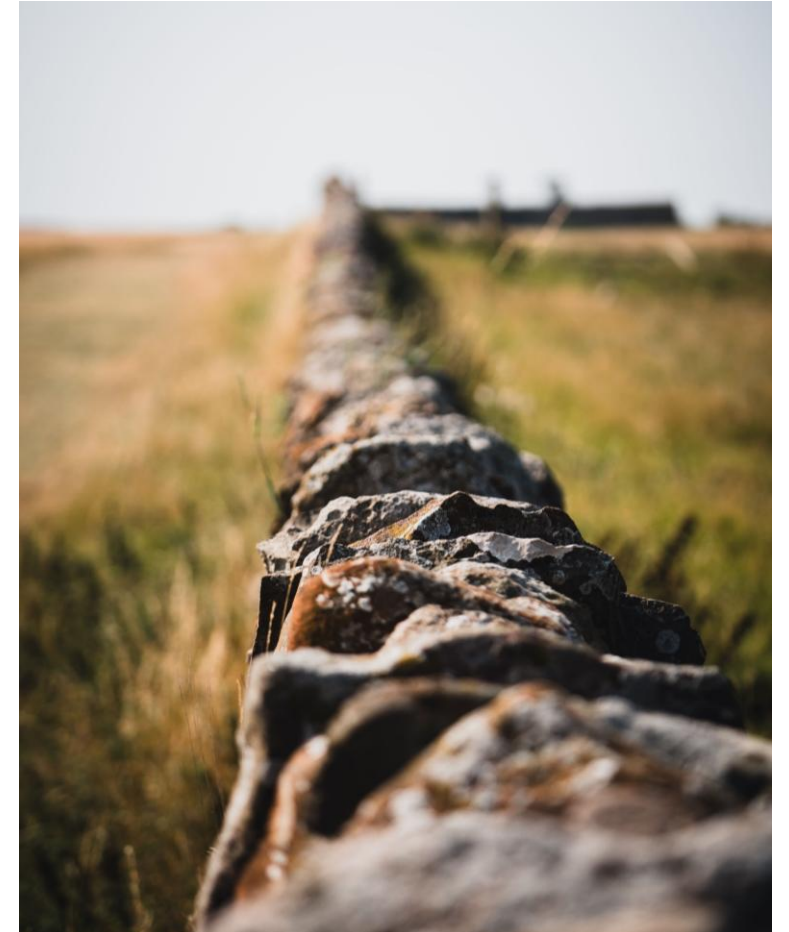
Vertically integrated structures can raise competition concerns. A gentailer that operates significant or strategically important generation may have incentives to restrict availability and access to supply contracts or offer non-competitive pricing and terms to independent retailers.

The 2025 LPF framed NDOs around this issue, stating that hedges are critical for competition and that gentailers control much of the flexible generation base needed to support risk-management products.¹²

From the evidence, vertically integrated and independent retailers face different risk-management cost profiles:

- Gentailers can offset retail purchase costs against generation revenues and can also deploy different generation options (e.g. backup generation, flex, batteries) as customer demand changes.
- Standalone retailers must procure equivalent protection through external contracts and incur hedge-related transaction costs and risks, while retaining residual exposure where available products do not fully match the shape or volume of their customer load.

These differences may affect how quickly changes in wholesale costs are passed through to retail prices or absorbed in portfolio holdings, but do not by themselves demonstrate anti-competitive conduct.



3.7 ‘Six degrees of separation’

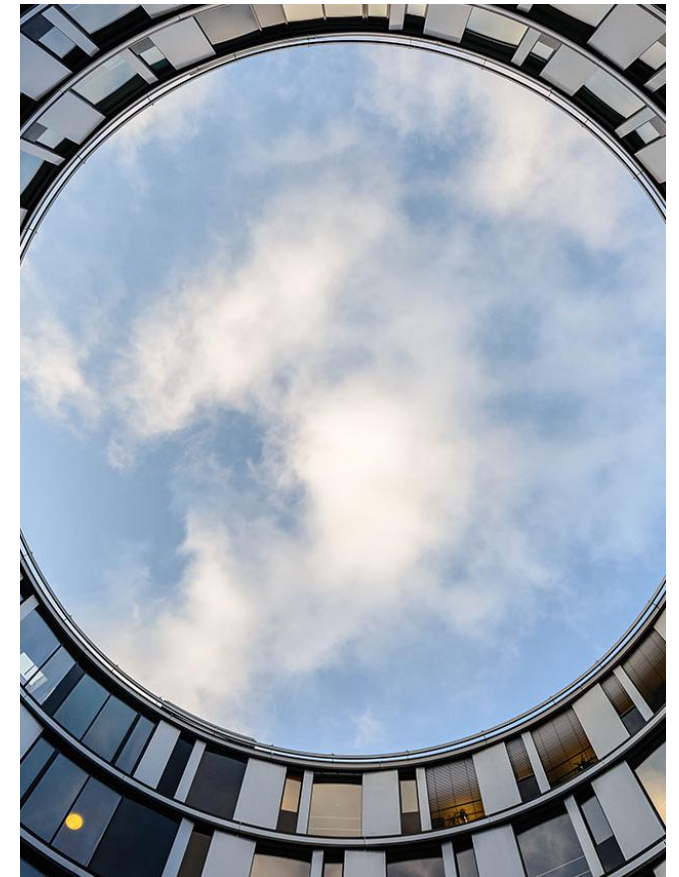
International experience reveals that ‘separation’ is not a single measure but a spectrum of policy and regulatory tools that can be applied, each with different requirements on industry participants.

Extent of separation required

Least

highest

Approach	Definition	
1 No separation requirements		No specific structural or regulatory limitations on retail and generation operations.
2 Regulatory transparency & behavioural obligations	Regulation	Regulatory measures employed to provide transparency over margins and pricing and incentivise behaviours that support fair competition. Typical measures include reporting, market-making obligations, conduct rules, and regulatory contracts.
3 Accounting separation		Generation and retail activities are ring-fenced in the accounts of a single legal entity. Separate published financial statements with distinct profit-and-loss statements and allocations of shared services and assets to prevent cross-subsidisation. Incorporates features from transparency and behavioural obligations from 2.
4 Functional separation	Virtual	Generation and retail activities sit within a single legal entity but are operated as distinct arm's length business units. Ring-fencing arrangements, information barriers, and separate systems and management reporting are used to limit the flow of competitively sensitive information between the two activities. Incorporates features from 2 and 3.
5 Legal separation	Corporate	Generation and retail activities moved into separate legal entities, each with its own governance and management, but both entities can be subsidiaries of a commonly owned holding company. The holding company may hold equity in both businesses but is not itself involved in operations of either activity. All commercial dealings must be on arm's-length commercial terms.
6 Ownership separation		Generation and retail activities are undertaken by separate legal entities with no common ownership. There may also be legislative restrictions on ongoing permissible financial, managerial, or operational relationships.



4

New Zealand
evidence



4.1 The New Zealand evidence base

The evidence base for gentailer separation is anchored in seven key market reviews, related regulatory consultation processes, and academic papers.

This section assesses New Zealand evidence on gentailer market structures and regulatory mitigations, and the debate on whether greater separation would improve market outcomes. It examines the regulatory and policy record alongside academic and expert analysis, market commentary and stakeholder submissions. The focus is on evidence relevant to generation and retail structures and interactions, including competition, hedge access, investment, affordability and security of supply.

The report focuses on official reviews and decisions undertaken or commissioned by the EA, MBIE, Commerce Commission (or their predecessors) as well as Ministerial reviews. These provide the strongest foundation for assessing market performance because they use regulator-held data, test issues through formal consultation and link findings to statutory objectives and possible regulatory action. Reviews that materially influenced legislation, market settings or subsequent regulatory work are shortlisted, and our analysis traces the issues identified, options considered, recommendations made, decisions adopted and measures implemented.

Electricity-market reviews are a normal feature of an evolving regulatory system. They allow regulators to test whether existing settings remain fit for purpose as retail, generation and technological conditions change. Governments and incoming ministers may also commission broader reviews to revisit policy settings or respond to emerging public and political concerns.

Reviews do not always lead to regulatory change. Regulators and governments may accept, decline, defer or revisit recommendations, while options raised during consultation may not progress to a formal decision.

This report therefore distinguishes between issues identified, options considered, recommendations made, decisions adopted and measures implemented. Proposals and deferred measures are considered where they help explain the evidence, competing views or possible policy direction, but are clearly separated from measures that were formally adopted or put into effect.

More detailed summaries of the evidence are provided in Appendix 1.

Evidence base

- **Market reviews** – formal reviews led by a government body to assess market performance, identify emerging problems and recommend changes.
- **Regulatory response and decisions** – issues, options and decision papers that consider how review findings should translate into regulatory action.
- **Other evidence** – academic literature, expert reports, market frameworks and relevant market commentary.
- **Stakeholder views** – submissions on review consultations, regulatory options and proposed decisions.

Key market reviews

- 2009 ComCom investigation⁴
- 2009 Ministerial review²⁰
- 2019 EPR¹⁹
- 2021 Wholesale market review⁵ & 2021 ITP consultation⁸
- 2023 MDAG³⁰
- 2025 Frontier²¹
- 2025 LPF¹²

Key regulatory decisions

- NDOs
- Spot-market trading-conduct rule and monitoring
- Baseload futures market making
- Hedge disclosure obligations
- Restrictions on materially large contracts
- Standardised super-peak flexibility product
- Voluntary OTC market Code of Conduct
- Internal transfer-price and retail gross-margin disclosures

4.2 Summary of New Zealand evidence

The evidence shows rigorous debate over two decades on competition risk and gentailer structures, but more intrusive forms of separation have not been pursued as the benefits were perceived to not justify the costs.

Reviews consider a spectrum of responses to address specific market problems that arise

New Zealand reviews have generally focused on whether market settings allow retailers and generators to enter, expand, invest and compete effectively, rather than treating generation-retail separation as an objective in itself. They consider a spectrum of responses, from greater transparency and even-handed access through to stronger structural measures.

Across the spectrum, reviews have examined several questions:

- Does the market have sufficient flexible generation capacity and does gentailer control of this affect competitive markets?
- Are suitable hedging and firming products available and is access to these products offered on even-handed terms?
- How do gentailer structures and the above conditions affect retail entry, expansion and investment in new generation?

State of the evidence

While gentailer market positions and structures are acknowledged, market reviews focus principally on whether independent participants can access sufficient volumes of hedge and firming products on even-handed and competitive price and non-price terms.

Academic evidence identifies differences between integrated and independent retailers but does not establish that separation would improve outcomes. Gibbard, Grubb and Wesselbaum found greater pass-through of futures-based generation costs by independent retailers and identified natural hedging and customer inertia as possible explanations. Richard Meade's theoretical work similarly finds that integration can improve risk management and consumer welfare under some assumptions.

Expert evidence is also divided. The 2018 CEG report found no compelling evidence of inadequate hedge liquidity, while Geoff Bertram advanced a contrasting case for arm's-length wholesale trading and a larger role for independent retailers and generators. Peer reviewers of Frontier's 2025 analysis considered the market broadly competitive outside stressed conditions but called for further empirical analysis before pursuing stronger interventions.

Stakeholder submissions reflect the same divide. Independent participants point to concerns over market power, contract availability, credit terms, information access and product design as potential competitive disadvantages, and many have called for higher forms of separation. Gentailers and industry groups argue that fuel and firm-capacity scarcity better explain market stress and that integration supports price smoothing, creditworthiness, investment and lower transaction costs.

Overall, the evidence establishes both risk-management advantages and potential competition risks, but does not quantify the net benefits of higher forms of separation.

More intrusive forms of separation have not been pursued reflecting cost, complexity and uncertainty over incremental benefits

Where more intrusive forms of separation were considered, reviews did not recommend it as the immediate response. Targeted measures were preferred and some stronger measures were discussed as backstops. Most recently, on 26 May 2026, the EA concluded it did not support higher forms of separation, favouring lower cost and more targeted regulation:

"We are not persuaded that more significant interventions can be justified on the basis of the evidence of the problem definition:

- *Corporate separation would represent a significant shift in operating model and would likely require primary legislation. It also represents the most expensive option, requiring structural change to gentailers' businesses. This would result in the loss of the existing efficiencies associated with vertical integration (e.g. resources, systems and risk management)...*
- *While accounting separation would improve transparency, we do not consider that the introduction of accounting separation would be justified at this time, given the potentially significant costs and difficulties involved. The incremental benefit of transparency beyond the RPCA would not justify this intervention"¹⁸*
[Paragraph 5.35]

The EA is continuing to monitor the effectiveness of the NDOs and separation may continue to be debated in future reviews.

4.3 Summary of New Zealand market reviews

New Zealand reviews identify competition and market power risks but do not establish systematic anti-competitive conduct, with successive regulatory interventions targeting increasingly specific market concerns.

The 2009 reviews identified market power risk but opted for targeted intervention

The 2009 ComCom Investigation and the 2009 Ministerial Review ran in parallel. The Commerce Commission found the four major gentailers periodically exercised wholesale market power, particularly when hydro storage was low, but found no anti-competitive purpose or Commerce Act breach. Its findings were passed to the Ministerial Review to consider broader remedies.

The Ministerial Review considered generation-retail separation but did not progress the separation due to the expected transaction, risk and financing costs. It instead recommended generation asset rebalancing, development of a standardised hedge market (e.g. ASX futures) supported by clearing, market-making, and competitive measures. The resulting reforms sought to address liquidity and risk-management concerns through targeted regulatory intervention.

The 2019–21 reviews did not favour separation but strengthened liquidity and transparency

The 2019 EPR¹⁹ considered but did not favour structural change:

“We do not favour the option of forcibly separating the generating and retailing activities of vertically integrated businesses. We consider the benefits of vertical integration outweigh the costs, even after the costs of promoting competition in a vertically integrated industry are included. Forced separation would also be disruptive, undermine investor confidence and stall or delay the huge amount of generation investment.” [Page 41]

The review found no clear evidence of excessive gentailer profits but identified unreliable voluntary market-making under stress and limited transparency over internal dealings. This led to mandatory market-making and internal transfer pricing and retail margin disclosures.

The 2021 Wholesale Market Review examined whether sustained high wholesale prices in 2019–21 were driven by competitive conditions or market power. It found legitimate reasons for high prices but also indicators of supply being withheld, which academics such as Geoff Bertram have framed as being uncompetitive market design.¹ These indicators were mixed, and the review did not establish a Code breach or conclude that structural reform was warranted.

Debate moved to virtual separation

The 2023 MDAG review³⁰ focused on the risk that control of longer-duration flexibility could weaken hedge access, retail competition and independent investment. It prioritised standardised products, contracting disclosure, market monitoring and market-making.

The review did not favour gentailer corporate separation, stating the source of market power (concentration of flexible supply) would be unchanged by such a split. Instead, it recommended a specific form of virtual disaggregation as a regulatory escalation mechanism (i.e. requiring a portion of flexible capability to be offered to market on approved terms) only where market power was present.

The 2025 Frontier report concluded that scarce fuel and firm capacity, rather than gentailer structure, drove stressed-market outcomes and that separation-like measures would not create additional capacity. It concluded that:

“...the proposals for non-discrimination of contracts and virtual disaggregation of the gentailers should not be adopted as these options will not resolve the underlying issue in the market...”²¹

Conduct rules were introduced in 2026 but accounting and legal separation were viewed as high-cost

The 2025 LPF¹² compared accounting separation, NDOs, negotiate-arbitrate regulation and legal separation. It concluded:

“...no evidence has been provided that causes us to definitively conclude that the exercise of market power to reduce competition is occurring. However, the risk that market power is being exercised remains clear.”¹³ [Paragraph 6.27]

Further, it could not rule out competition risk in super-peak pricing.

NDOs were introduced as a ‘low-cost’ and ‘targeted’ response, requiring gentailers to supply risk management contracts on a non-discriminatory basis. Mandatory super-peak market-making, trading transparency and longer-maturity baseload forward products separately target liquidity and price discovery.

The EA abandoned plans for a formal escalation pathway (that may have considered accounting, virtual or legal separation). Instead, the EA indicated that it will consider the need for further reform in a late-2027 review of the effectiveness of the 2026 regulatory package.

4.4 Key competition issues

New Zealand reviews distinguish physical scarcity of firming capacity and access to hedge products. Non-discrimination obligations directly regulate hedge access as of July 2026.

Hedge-market liquidity and product availability

Deep wholesale hedge markets and the availability of a range of risk management products to enable independent retailers to compete fairly and grow are a key competition concern that has been investigated over numerous reviews.

The 2009 Ministerial review identified low standardised trading volumes, bargaining issues in bilateral negotiations and regional transmission exposure.²⁰ The 2019 EPR focused on the wholesale contract market and found that voluntary market making became less dependable during stressed market conditions.¹⁹ The EA found that retailers had obtained substantial shaped hedge cover but that more than one-third of shaped-hedge requests received only one offer.¹² It concluded that baseload and peak prices were likely to be competitive, identified scarcity as an important explanation for limited supply, and identified competition risk for super-peak products.

This issue has been addressed over time through market making, standardised products, and contract disclosure and approval obligations. Access to ASX baseload futures contracts and standardised super-peak products is supported by market making and provides a traded forward-price reference. OTC PPAs, CfDs and shaped contracts are subject to disclosure with certain large contracts subject to regulatory approval.

The 2025 Frontier report found that independent retailers could broadly cover their energy positions with existing wholesale inputs and hedging tools, and that gentailers were supplying contracts to competitors, but it also noted gaps in the available data.²¹

Availability of firming capacity

More recent reviews have identified limited long-duration firming capacity as a current and prospective constraint. The constraint is most apparent in dry years, when low hydro inflows can coincide with high demand and weak wind conditions. Existing hydro and thermal resources provide much of the capacity used to manage peak periods, multi-day low-wind events and extended dry sequences.

The four gentailers own most of the hydro and thermal generation, which is able to supply both firm and flexible capacity. Standalone retailers and generators are therefore reliant on the gentailers for firming products, while competing with them.

The constraint may increase as thermal generation retires and electricity demand and intermittent renewable generation grow. Batteries and demand response can assist with shorter events but do not yet provide a complete substitute for longer-duration flexibility. New firming options and products are also emerging, including Genesis Huntly Firming Options (HFOs), geothermal, bioenergy, pumped hydro, LNG and diesel.

The 2023 MDAG report identified a future risk that competition in longer-duration flexibility could weaken as thermal generation retires.³⁰ The 2025 Frontier report placed greater weight on the underlying shortage of firm capacity and proposed Crown-backed capacity with priority access for independent participants.²¹ The 2025 LPF review introduced mandatory super-peak products.

Fair access to wholesale products

A separate question is whether available hedge and firming products are offered to independent participants on terms comparable to the gentailers' internal arrangements and on fair and non-discriminatory terms.

From 1 July 2026, NDOs apply, requiring the gentailers to supply risk management contracts on a non-discriminatory basis. These cover hedge supply, pricing, credit terms, access to information, confidentiality and record-keeping. Board-approved policies, retail price consistency assessments (RPCAs), external audits and EA monitoring support these.

Gentailers must not favour their own retail businesses or discriminate between external buyers without objective justification, and must trade in good faith, apply objective credit assessments and provide equal access to relevant commercial information. The stated purpose is to support even-handed supply, hedge-market liquidity and competitive pricing, and to facilitate investment.

The NDOs govern how existing hedging products are offered, including expectations for even-handed access. They do not, however, increase the underlying supply of flexible capacity, so future reviews will need to distinguish between any potential constraints arising from availability versus access.

4.5

On Energy – case study on the failure of a major standalone retailer

The failure of On Energy in 2001 highlights the implications of a large stand-alone retailer getting their hedging wrong, the importance of liquid hedge markets, and the resilience of vertical integration to market shocks.

Background

Following the breakup of ECNZ, the newly formed generators began acquiring retail customers as local electricity supply companies were required under the Electricity Industry Reform Act (EIRA) to separate their network businesses from their retail and generation activities. Most retained their networks and sold their retail customer bases and local generation, creating an opportunity for large generators to build retail portfolios and vertically integrate.

On Energy was created when Natural Gas Corporation (NGC) acquired a majority stake in TransAlta NZ. The acquired retail business was split out to form On Energy, gaining ~20% retail market share by 2001 with only 5% of generation capacity. This left a significant portion of its customer load reliant on wholesale purchases and hedge cover.

What happened

During winter 2001, record-low hydro inflows and strong demand caused national wholesale spot prices to spike to \$1,888 per MWh in July, according to the EA's EMI data platform.

On Energy's limited physical and contractual cover left it heavily exposed to the price increases. Attempts to pass higher wholesale costs through to retail customers created customer-retention and political pressures. Per ASX-reported losses, NGC lost \$1.4m per day in June and July 2001, with many of its customers switching to competing retailers. On Energy exited electricity retailing in late 2002, selling its remaining 116,000 South Island customers to Meridian and 290,000 North Island customers to Genesis.³⁹

Why it failed

The core issue was that On Energy was a net purchaser of electricity and was under-hedged. Its retail supply obligations materially exceeded the combination of its own generation and hedge cover.

When wholesale prices increased sharply, its short position translated directly into cash losses. Raising retail prices offered only limited protection, as it accelerated customer losses and could not fully offset the immediate wholesale price exposure.

News articles at the time suggested On Energy had rejected hedges at around \$40–\$50/MWh, while government officials had confirmed there was no indication of a shortage of available hedges.³⁸

What is the significance

While the current market is very different, the On Energy failure demonstrated the vulnerability of a retailer with limited generation getting its hedging wrong in New Zealand's hydro-dominated, energy-only market.

The Government's 2001 post-winter review led by then Energy Minister Pete Hodgson echoed this, identifying weaknesses in risk preparedness among some exposed retailers and large users, particularly relative to participants protected by generation ownership (natural hedge), external hedges, or fixed-price supply arrangements.³⁶

Regulatory and market response

The 2001 electricity crisis accelerated reforms intended to improve risk management, market transparency and demand response. Measures included greater disclosure of forward hedge prices and generator offers, increased demand-side participation and mechanisms for managing transmission-related risk.

The Government also signalled that, if effective retail competition did not develop, stronger interventions could be considered, including mandatory hedge tendering and corporate separation of generation and retail activities. Although separation was floated, the option was ultimately not taken forward in the 2009 Ministerial review.

Market structure impact

Following the failure of On Energy, the case for vertical integration strengthened due to the benefits of the natural hedge. This allows gentailers to offset higher costs of supplying retail customers with higher wholesale generation revenues during periods of market stress.

However, it also illustrates the potential competition issue created by vertical integration. Independent retailers depend on access to hedge products supplied by generators, so that they may simultaneously compete for retail customers.

4.6 New Zealand regulatory interventions

Eight key interventions have been implemented over the last 15 years to support fair access to risk management, deeper liquidity and price discovery, greater transparency, and constraints on market power.

No.	Measure	Problem targeted	How it works	Evidence of effectiveness
1	Non-discrimination obligations	Risk that gentailers may provide or price hedge contracts on less favourable terms for independent participants than for their own retail businesses or preferred buyers, distorting competition.	The four large gentailers cannot discriminate among buyers or favour internal units in risk-management contracting. ¹⁸ Requirements cover good faith, objective credit assessment, equal information access, confidentiality, records, policies, board review, RPCAs and external audit.	Too recent to assess: first RPCAs and implementation plans are due 3 September 2026. First annual and audit reports from September 2027. EA planning a 2027 review.
2	Spot-market trading-conduct rule and monitoring	Risk that generator offer conduct may reflect the exercise of significant market power during periods of weak spot-market competition.	Generators and ancillary-service agents must offer as if no participant could exercise significant market power. EA monitors offers against conditions and costs, reports, and may refer suspected breaches for investigation or enforcement.	EA's initial review indicated better offer behaviour and prices but deemed evidence inconclusive. The 2023 MDAG found the rule and enhanced monitoring yielded offers consistent with competitive outcomes. ³⁰ Weekly monitoring and six-monthly structure-conduct-performance reviews continue.
3	Baseload futures market making	Insufficient reliability, liquidity and price discovery in standardised ASX electricity futures, limiting access to risk-management contracts.	Regulated and contracted market makers maintain specified two-way ASX baseload-futures quotes within prescribed windows, spreads and volumes, backed by Code monitoring and enforcement.	EA's 2026 assessment found greater liquidity and stronger forward-price signals, ¹⁶ especially after 2020 changes. Scratch trading did not materially undermine objectives, so no further changes were proposed. The approved five-year extension remains unimplemented.
4	Hedge-disclosure obligations	Limited transparency and comparability of OTC risk-management contracts, price discovery and participants' ability to assess contract-market competitiveness.	Covered OTC contracts require approved-system disclosure of price, quantity, location, dates and characteristics. The 2024/2026 amendments broadened coverage, clarified PPAs, firming, demand-response and novel contracts, and strengthened publication, verification and audit.	EA found the pre-2024 regime missed growing contract diversity and inadequately supported risk management. An expanded regime has operated from August 2026.

4.6 New Zealand regulatory interventions (continued)

Eight key interventions have been implemented over the last 15 years to support fair access to risk management, deeper liquidity and price discovery, greater transparency, and constraints on market power.

No.	Measure	Problem targeted	How it works	Evidence of effectiveness
5	Restrictions on materially large contracts	Potential inefficient price discrimination in very large electricity contracts that could increase wholesale prices or costs for other consumers.	Materially large contracts require positive net value versus alternatives, no-worse-terms resale of unused electricity, or EA clearance. Contracts and information are disclosed, with reconsideration and appeal rights. ⁹ A 2026 Omnibus amendment to the Participation Code clarified exclusions and treatment of new intermittent generation. ¹⁷	The operational regime has been applied to several agreements, but EA material contains no ex-post assessment of market outcomes. Clearances show use, not effectiveness.
6	Standardised super-peak flexibility product and market making	Limited availability and price discovery for hedges covering morning and evening peak or shape risk. Becomes more important as intermittent renewable generation increases and wholesale prices become more variable.	Standardised OTC hedges cover morning and evening peaks; brokered sessions publish anonymised bids, offers and trades. From 31 July 2026, regulated market makers must quote super-peak products on an approved platform. ¹⁶	EA reported higher 2025 volumes and super-peak prices falling from about 1.5 to 1.3 times equivalent baseload hedges ¹⁴ ; early evidence of improved pricing and price discovery. EA plans a review after about 12 months. ¹⁶
7	Voluntary OTC market Code of Conduct	Conduct, access, efficiency and confidence in bilateral OTC risk-management contracting.	The industry-led Code commits signatories to OTC conduct supporting competition, liquidity, integrity and efficient risk-management product access. EA facilitated the working group but does not administer or lead it.	The voluntary Code sits alongside mandatory non-discrimination rules. EA may revisit it during its broader pro-competition hedge-market review in 2027. No formal ex-post effectiveness finding exists.
8	Internal transfer-price and retail gross-margin disclosures	Limited transparency over gentailer internal electricity-cost allocations and retail margins, and concerns about retail-market competition and cross-subsidisation.	Originally, gentailers disclosed ITPs and qualifying retailers' annual retail gross margins (RGMs). From 1 July 2026, gentailer ITP/RGM reporting ceased. Non-gentailer RGMs and specified gentailer costs remain, with RPCAs testing supply-cost and retail-price consistency.	EA's 2024 review found broad agreement that the disclosures had limited value ¹¹ and had not achieved the 2019 EPR's intended impact. The original measure was therefore materially replaced.

4.7

New Zealand academic evidence and stakeholder views

Views remain divided on whether vertical integration primarily creates competition and access concerns, or provides important risk-management, investment and financing benefits.

Academic views

Academic evidence does not provide a settled case either for or against vertical integration.

One strand of New Zealand academic literature identifies persistent wholesale competition concerns and argues that integration can give gentailers advantages that independent participants cannot readily replicate. Bertram, in particular, argues that gentailers' ability to manage generation and retail positions internally reduces their dependence on external hedge markets, while independent retailers must obtain equivalent protection from firms with which they also compete.^{1,12}

Wolak and, subsequently, Poletti provide evidence of periods in which wholesale prices may have reflected market power. However, neither establishes vertical integration as the cause. Wolak's own analysis found that greater retail commitments could reduce generators' incentives to raise wholesale prices, while his headline estimate of market-power rents was subsequently not taken further in official reviews and was regarded by Treasury as not credible. The evidence therefore supports wholesale market power as a legitimate competition concern, but does not establish vertical integration as its cause or separation as the appropriate remedy.

A second strand of academic literature, associated particularly with Meade, Hogan and O'Connor, emphasises the efficiencies created by integration. Their work argues that combining generation and retail can reduce wholesale price risk, moderate incentives to exercise wholesale market power, improve coordination of generation investment and support financing of long-lived assets. Separation does not remove these risks or coordination requirements. Rather, it transfers them into contracts and financial markets, which may provide an incomplete or more costly substitute.^{25,32}

The academic debate therefore turns on which effects dominate. Integration can create strategic concerns where firms control important wholesale inputs needed by competitors, but it can also be an efficient organisational response to the risk characteristics of electricity markets.

The literature highlights market concerns, but does not establish a general presumption that separation would improve consumer welfare. A fuller discussion of the competing academic perspectives and underlying evidence is provided in Appendix 1.

Stakeholder views

Stakeholder views divide broadly along market position. Independent retailers, some independent generators and consumer representatives argue that the central concern is not vertical integration alone, but its combination with gentailer control of flexible generation. They contend that internal hedging, information advantages, credit requirements, contracting processes and access to shaped hedges or firming can place independent participants at a structural disadvantage.

These stakeholders generally support stronger safeguards around access to hedges, PPAs and firming products, but differ on the appropriate remedy. Independent retailers have been the strongest proponents of legal or ownership separation, while others favour functional separation, accounting separation, non-discrimination obligations or virtual disaggregation, with stronger structural measures retained as a backstop. Independent generators place particular emphasis on access to long-term PPAs, sleeves and firming products needed to support project finance.

Gentailers, industry associations and supporting experts take the opposing view. They argue that recent market stress primarily reflects scarcity of fuel and flexible capacity rather than discriminatory vertical integration, and that reallocating existing firming capacity does not address the underlying shortage. They also emphasise that integration provides a natural hedge, supports retail price smoothing and creditworthiness, and can strengthen investment incentives and financing.

Another perspective is that diversity in firm structures is an important part of a healthy competitive market. Former EA CEO, Carl Hansen, on behalf of Meridian, described a "contest between business models" and cautioned that "vertical integration is not in itself the saviour for a retailer".²³ New vertically integrated entrants may face similar pressures to independent retailers where they lack the scale, long-lived generation assets and balance-sheet strength of established incumbents.

Overall, stakeholder disagreement largely reflects different diagnoses of the same observed pressures. Supporters of stronger intervention see unequal access to flexibility as a barrier to entry and competition; opponents see scarcity of firm capacity as the underlying constraint and argue that regulation should address supply and demonstrated conduct rather than organisational form.

5

International
evidence



5.1

Relevant jurisdictions

17 comparable jurisdictions were reviewed for relevant precedent and evidence on separation.

This section summarises international evidence on separation from key regions with country level summaries provided in Appendix 2.

New Zealand's energy market structures are not unique and borrow features from overseas jurisdictions. Relevant dialogue and precedent on generation and retail vertical integration and the case for separation exists across a number of key territories.

For this report we have shortlisted jurisdictions relevant to the review and which are most comparable to New Zealand, with the following features prioritised:

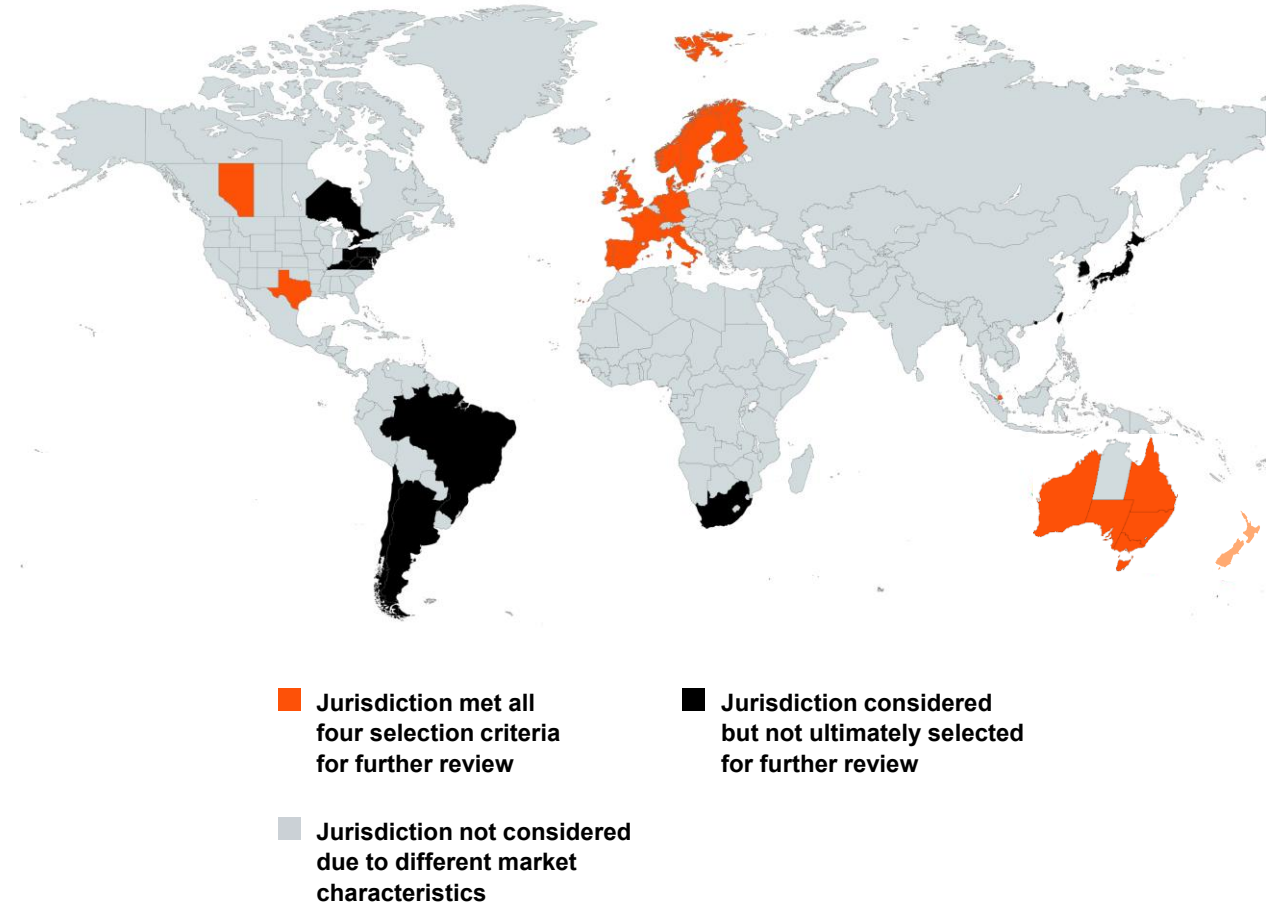
- Private ownership of energy companies.
- Presence of retail competition.
- Presence of wholesale or hedging market: where firms manage price risk through spot markets, contracts or hedges.
- High Income Country status as defined by the World Bank with similar institutions, policy and regulatory frameworks, and capital market expectations.

This enabled a focus on markets where generation, retail and risk management operate in broadly similar ways to New Zealand.

Applying this approach produced a shortlist of relevant jurisdictions (see opposite) across Great Britain, Ireland, Australia, North America, Singapore, and European markets. These jurisdictions do not all look the same, but they each provide useful evidence on how competitive electricity markets manage generation, retailing, wholesale pricing and contracting.

Other jurisdictions considered included Japan, South Korea, Taiwan, Hong Kong, Chile, Argentina, Brazil, South Africa, Ontario, and the PJM Interconnection in the US. However, these did not meet the necessary criteria for assessing generation-retail separation in a New Zealand-style market. Reasons included limited retail competition, different stages of liberalisation and market reform, material reliance on regulated tariffs, administered pricing, capacity mechanisms, mandatory contracting or policy-directed investment, non-comparable wholesale and hedging arrangements, or more centralised and state-led market structures.

This process provides a shortlisted comparator set to draw lessons from – markets that are close enough to New Zealand to be useful, while avoiding over-reliance on jurisdictions with materially different market structures.



5.2 Comparator markets reviewed

New Zealand's most useful comparators are connected either by shared institutions or deep market integration, offering different lessons on competition, access and separation.

The European Union

The EU made independent network governance a foundation of its liberalised electricity market. It combines open retail choice and non-discriminatory network access with mandatory separation of transmission from generation and retail through ownership unbundling, independent system operator (ISO) or independent transmission operator (ITO) models. Distribution businesses are also legally and operationally ring-fenced from competitive activities, while member states retain discretion over whether generation and retail remain under common ownership. This framework supported greater interconnection and cross-border market integration and is broadly comparable to New Zealand's separation of monopoly networks from competitive generation and retail.



Great Britain



Ireland



Germany



Netherlands



Italy



France



Spain



Portugal



Denmark



Finland



Sweden



Norway



Alberta



Australia
NEM



Australia
WEM



Texas



Singapore

Common law jurisdictions

These common-law jurisdictions provide useful comparators because they combine independent regulation with liberalised electricity markets and varying degrees of retail choice. Their experience addresses many of the same questions facing New Zealand, including generation-retail integration, access to hedges and firming, retail entry and competition, and the use of conduct, contracting and structural remedies.

MIBEL

MIBEL links Spain and Portugal through a shared Iberian wholesale electricity market, with common spot and forward trading. It is useful because wholesale integration sits alongside separate national retail markets and regulatory settings.

Nord Pool

Nord Pool is relevant because it operates one of the world's most integrated regional electricity markets, with shared wholesale trading across countries. It provides a useful comparator for how strong wholesale integration, hydro exposure, different ownership models and active retail markets interact without necessarily relying on generation-retail ownership separation.

5.3

Summary

Most mature markets permit vertical integration, with pro-competitive regulatory safeguards more commonly used over more intrusive forms of separation.

Introduction

The international evidence reveals some variation in approaches to generation-retail integration. The predominant approach in mature liberalised markets has been to permit vertical integration with pro-competitive market safeguards and regulatory oversight. Since 2000, there have only been two documented examples in the observed market set of mandated legal separation.

This contrasts markedly with the near-universal consensus on the necessity to separate non-competitive transmission and distribution networks from competitive retail and generation activities.

Forms of separation commonly observed

The principal mechanism observed across the comparable jurisdictions is the adoption of pro-competitive regulatory measures to address competition and market power concerns arising from generation-retail integration.

Of the 17 comparable jurisdictions examined, 14 rely primarily or exclusively on market and transparency measures, involving conduct-based regulation, hedge market liquidity rules, standardised products, market-making obligations, directed or vesting contracts, disclosures and supervisory oversight.

Since 2000, only Texas and Western Australia have implemented legal separation, with the latter re-merging generators and retailers in 2014, eight years after the initial decision to separate.

Ireland and Great Britain have implemented components of accounting separation, but continue to prioritise pro-competitive safeguards rather than more intrusive forms of separation.

Alberta, France and Singapore have gone further within this market-access model, using mandated or regulated contracting arrangements to require key generation output to be made available to retailers or the wider market, rather than separating generation and retail ownership.

Discussion of more intrusive forms of separation is limited across Europe. This partially reflects that in an integrated market unilateral separation is difficult to enforce because integrated firms from other Member States can continue supplying customers. The preference of the EU and the Nordic countries is for market access, liquidity and transparency measures. There are several examples in GB and Europe of voluntary separation, which appears to be at least partially attributable to regulatory pressures in the form of competition cases being brought against firms (e.g. in Germany) and increasing regulatory pressure (GB).

Key market concerns

Across the jurisdictions, regulatory attention focuses on five recurring market concerns related to vertical integration:

- **Market power and foreclosure:** Integrated firms may use control of scarce or strategic generation to influence prices, withhold output or disadvantage rivals.

- **Discrimination against independent retailers:** Affiliated retailers may receive preferential pricing, contract terms, information or access to generation products.
- **Liquid access to wholesale and hedging products:** Independent retailers need suitable products in sufficient volume, at transparent prices and on workable credit terms.
- **Retail entry, expansion and financial viability:** Standalone retailers may face higher collateral, transaction and risk-management costs that constrain sustainable growth.
- **Market fragility during shocks and scarcity:** Retailers without effective hedges may be more exposed to price spikes, tightening credit and supplier failure in periods of market stress. Incumbents with legacy or strategic assets may capture substantial scarcity rents when market prices exceed their underlying generation costs.

These concerns are generally more acute in concentrated or isolated systems such as Ireland, Portugal and Western Australia. In the Nordics, MIBEL (Iberian Electricity Market) and the Netherlands, interconnection and market coupling provide an additional competitive constraint.

New Zealand regulatory attention and reform has followed this international trend of targeted responses matched to problem definition, rather than ownership separation. We have not found evidence in our work that New Zealand is out of line with international direction.

5.4 Summary of international generation-retail separation approaches

New Zealand's current approach and interventions around vertical integration are similar to many international markets. Ownership separation would be unique amongst these peers if implemented.

Separation option	Highest form of separation in each relevant jurisdiction	Definition
1 No separation requirements	Denmark, Sweden, Norway, Finland	No specific structural or regulatory limitations on retail and generation operations.
2 Regulatory oversight and behavioural obligations	New Zealand ^[1] , Australia NEM/WEM, Germany, Netherlands, Singapore, Alberta, France, Portugal, Spain, Italy	Regulatory measures provide transparency over margins and pricing and incentivise behaviours that support fair competition. Typical measures include reporting, market making obligations, conduct rules, and regulatory contracts.
3 Accounting separation	Great Britain	Generation and retail activities are ring-fenced in the accounts of a single legal entity. Separate published financial statements with distinct profit-and-loss statements. Shared services and assets are allocated to accounts based on rules to prevent cross-subsidisation.
4 Functional separation	Ireland	Generation and retail activities sit within a single legal entity but are operated as distinct business units. Ring-fencing arrangements, information barriers, and separate systems and management reporting are used to limit the flow of competitively sensitive information between the two activities.
5 Legal separation	Texas, Australia WEM (2006–14)	Generation and retail activities sit in separate legal entities, each with its own governance and management. Both entities can be subsidiaries of a common holding company. The holding company may hold equity in both businesses but is not itself involved in either activity. All commercial dealings must be on arm's-length commercial terms.
6 Ownership separation	No examples in comparable market set	Generation and retail activities are carried out by separate legal entities with no common ownership. There may also be legislative restrictions on ongoing permissible financial, managerial, or operational relationships.

Note:

[1] New Zealand's new non-discrimination regime falls principally within level 2, with selected information-control and governance features associated with functional separation – level 4.

5.5

Australia and Singapore favour targeted market reforms over vertical separation

Australia NEM has retained integration after reviews and Western Australia separated then returned to integration, while Singapore has targeted generator market power through regulated contracting.

Australia NEM

Australia's National Electricity Market (NEM) does not mandate generation-retail separation. In practice, however, vertically integrated businesses commonly treat their generation and retail arms as distinct internal businesses for pricing and performance purposes. The ACCC found that most use internal transfer prices based on the opportunity cost of selling generation to third parties, meaning the retail arm faces a wholesale electricity cost broadly comparable to a standalone retailer contracting through the market.⁵³

Regulators have recognised that integrated groups benefit from genuine risk-management efficiencies, while standalone retailers can face higher hedging costs and thinner contract markets. Rather than mandate further separation, Australia NEM has focused on market-making and other measures to improve access to standard hedging products and transparent prices. The ACCC has treated concentration and access to hedging products as the more direct competition concern, rather than vertical integration itself.

Western Australia

Western Australia went further, legally separating its State-owned generation and retail businesses in 2006, before reversing the reform in 2014. Poor risk allocation, coordination problems, limited market scale and financial sustainability concerns contributed to the re-merger of Verve and Synergy.

Competition risks from reintegration were then managed through non-discrimination, standard-product access and ring-fencing requirements. However, it should be noted that the comparison with New Zealand is limited: Synergy remains state-owned and retains a protected mass-market retail position, with most small customers unable to choose an alternative supplier.⁶⁷

Singapore

Singapore faced a different problem: concentrated generation ownership created a risk that generators could withhold supply and raise wholesale prices. Rather than requiring generation-retail separation, regulators required major generators to sell part of their output through regulated forward contracts, reducing their exposure to spot prices and the incentive to exercise market power.

Singapore has continued to adjust these controls as the market has evolved. The contracting regime was reduced, redesigned and later extended as competitive conditions changed, alongside market surveillance, prudential requirements and wider retail choice.

Singapore therefore illustrates a more interventionist form of targeted regulation: generation-retail integration is permitted, but major generators are required to offer material volumes through regulated vesting contracts at administered prices, directly constraining their ability and incentive to exercise wholesale market power.



5.6

North American reforms targeted incumbent advantages as competition opened

Texas and Alberta used different forms of separation to reduce incumbent advantages, but in both cases these measures sat within broader packages of market-opening reforms.

Texas

Texas introduced legal separation in 2001 as part of a much broader effort to create a competitive retail market. Incumbent utilities were required to place generation, retail and networks into separate legal entities, although common ownership was permitted. This was accompanied by transitional retail pricing, mandatory auctions of generation capacity, open network access, limits on generation ownership, affiliate conduct rules and consumer protections. The objective was not separation for its own sake, but to create space for new entrants and limit the advantages of incumbent utilities as competition was introduced.

The important lesson from Texas is that legal separation did not fix all wholesale and retail market problems, and the Public Utility Commission of Texas continued to intervene in targeted ways as new problems emerged. Customer inertia and complex tariffs prompted comparison tools and stronger consumer protections, while wholesale-market concerns led to further measures around congestion, market manipulation, scarcity pricing and reliability.

Academic reviews on the benefits of separation to consumers remain inconclusive. Retail competition expanded, but evidence on consumer price outcomes remains contested, reinforcing that the effects of legal separation cannot be isolated from wider retail, wholesale and regulatory reforms. Some evidence suggests the Texas reforms increased the responsiveness of retail prices to changes in wholesale generation costs, although this effect cannot be attributed to legal separation alone.

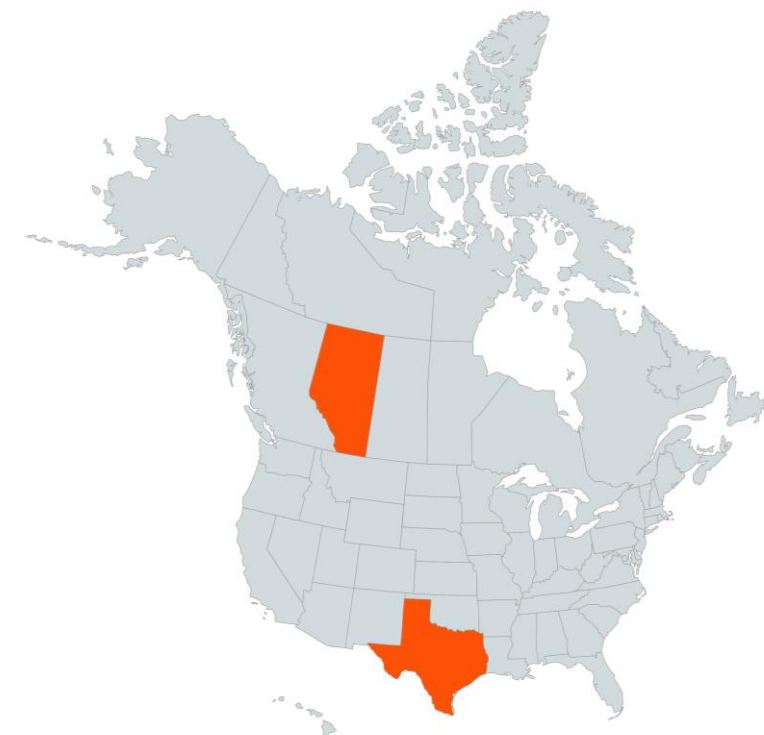
Alberta

Alberta adopted a form of virtual generation divestiture rather than legal or ownership separation. As part of market restructuring, long-term PPAs transferred the commercial rights to substantial volumes of incumbent generation to third parties, while ownership and physical operation of the underlying power stations remained unchanged. The PPAs formed part of a broader package of reforms under the 1998 Electric Utilities Amendment Act, alongside the introduction of retail competition, independent market surveillance and transmission administration, following stakeholder review and consultation on the earlier reforms.

The arrangements went materially beyond market making. PPA holders could determine how contracted generation was offered into the wholesale market and received the associated market revenues. This dispersed commercial control of incumbent generation and gave new participants access to generation without requiring the physical assets to be sold.

The approach reduced incumbents' direct control over their historic generation portfolios, but did not eliminate competition concerns. Outcomes depended partly on who ultimately held the generation rights, and the effects cannot be isolated from Alberta's wider market reforms.

Alberta therefore illustrates a form of virtual separation: competition concerns were addressed by separating commercial control of generation from asset ownership, rather than requiring generation and retail businesses to be structurally separated.



5.7

Europe has largely retained generation-retail integration

Europe addressed differing competition problems with targeted interventions, rather than through vertical separation.

Summary

Across continental Europe, the predominant approach has been to widen the competitive market and target specific sources of market power rather than separate generation and retail. The EU mandates separation of monopoly networks from competitive activities, but does not require generation and retail to be separated. Member states retain discretion over ownership structure, subject to competition law and national regulation. Where concerns have arisen, authorities have generally escalated through targeted access, conduct or firm-specific structural remedies rather than sector-wide separation.

Regional integration is central to this model. Nord Pool disciplines integrated utilities through a common wholesale platform, extensive interconnection and liquid financial markets, allowing generation across Denmark, Finland, Norway and Sweden to compete across borders. When hedge-market liquidity weakened following the 2021–22 energy crisis, Sweden and Norway introduced TSO-backed hedge auctions and Finland considered support for exchange-based market-making. MIBEL similarly retains vertically integrated utilities within a shared Iberian wholesale market, with interconnection and market coupling providing additional competitive discipline. In both cases, the response has been to strengthen market access and integration rather than change ownership structure.

The key European lesson is that market integration, access to generation and hedge products, and targeted competition enforcement have been more commonly relied on. Cross-border interconnection is less relevant to New Zealand, but matching intervention to the specific competition problem is consistent.

PwC **Note:** Further information on each jurisdiction available in Appendix 2.

Illustrative examples considering separation

France, Germany and the Netherlands provide notable examples of how Europe views generation and retail structure.

The Netherlands illustrates how wider market conditions and national strategies matter more than ownership structure alone. Dutch evidence found interconnection and market coupling had a greater effect on wholesale competition than changes in firms' generation portfolios, by reducing the ability of domestic generators to become pivotal. The regulatory focus therefore remained on interconnection, market access and specific sources of market power rather than consideration of generation-retail separation.

France preserved EDF's integrated structure and state control of its nuclear fleet. ARENH, a regulated access scheme requiring EDF to sell part of its historic nuclear output to competing suppliers at an administered price, and earlier virtual power plant auctions gave competitors access to nuclear generation. Project Hercule, a broader proposed restructuring of EDF's nuclear, hydro and customer-facing activities, was ultimately abandoned amid disputes over pricing, financing, hydro assets and competition rules.

Germany combined market monitoring and network unbundling with firm-specific remedies: E.ON divested around 5,000 MW of generation capacity and its transmission network following an EU investigation, while later restructuring involving E.ON, Uniper and RWE reflected commercial and transition strategies rather than mandated separation.



5.8

Great Britain and the Irish SEM adopted higher forms of separation

Great Britain use accounting separation and the Ireland and Northern Ireland Single Electricity Market (SEM) use functional separation to improve wholesale access and limit incumbent advantage

Great Britain

Great Britain initially separated generation and retail through the 1990–91 privatisation reforms, but market-led consolidation progressively reintegrated the sector around the “Big Six”. Regulation accommodated this while imposing safeguards: generation and supply remained separately licensed, regulatory accounts increased transparency, and licence conditions addressed discriminatory pricing and cross-subsidisation. The resulting model was common ownership with accounting separation and conduct regulation, rather than functional or corporate separation.

Wholesale liquidity and supplier resilience subsequently became the main concerns. The CMA found that vertical integration reduced external trading and could make procurement harder for independent retailers, but did not conclude that integration itself harmed competition and recognised its risk-management efficiencies. Ofgem instead introduced Secure and Promote, requiring large generators to provide smaller suppliers with fair access to specified wholesale products, transparent credit terms and market-making arrangements. This targeted potential discrimination and liquidity constraints without separating ownership.

Supplier failures during the wholesale price shocks of the early 2020s shifted attention towards financial resilience and wholesale risk management. Vertically integrated firms were generally better placed to absorb volatility, while under-capitalised and under-hedged suppliers proved more vulnerable.

Recent reforms have therefore strengthened capital, hedging and customer-protection requirements while preserving firms’ ability to manage risk through owned generation, PPAs or external hedges. Commercial integration is also continuing, with retailers such as Octopus expanding into generation, reinforcing that the market has not moved towards further separation of generation and retailing.

Ireland and Northern Ireland SEM

Within the SEM, ESB and Energia were subject to functional and accounting ring-fencing, information barriers and arm’s-length dealing, alongside Directed Contracts giving competitors access to incumbent output. This was due to the national concentration of these key suppliers.

The 2018 I-SEM redesign deepened market integration, while subsequent reforms strengthened supplier resilience and hedging requirements. Recent CRU analysis found high switching, no evidence of excessive supplier margins and no significant barriers to entry. Across both markets, reform has therefore focused on targeted wholesale access, risk management and resilience rather than mandatory ownership separation.



5.9

Key market concerns

International evidence identifies recurring competition and resilience risks but does not suggest that vertical integration is harmful in of itself or that generation-retail separation alone resolves these risks.

Market power and foreclosure

Vertical integration is often linked to market power where a firm controls generation that is scarce, flexible or difficult to replicate. The concern is not common ownership, but whether integrated firms can withhold output, influence wholesale prices, favour a retail affiliate or make rivals dependent on their essential products.

The evidence for vertically integrated power suppliers exercising and abusing market power is mixed:

- EU competition law cases involving E.ON in Germany and EDP in Portugal identified market power and dominance with specific risks of withholding or foreclosure and led to targeted divestment or merger intervention.
- In Australia, the ACCC opposed AGL's acquisition of Macquarie Generation, arguing that it could reduce hedge-market liquidity and weaken retail competition. The Australian Competition Tribunal nevertheless authorised the acquisition, finding that public benefits outweighed likely detriments.⁵²
- The UK CMA reached a different overall conclusion in Great Britain. After an extensive investigation, it found that vertical integration did not itself constitute an adverse effect on competition.

The international evidence therefore supports scrutiny of particular conduct and market positions, but not a presumption that integration is inherently anticompetitive.

Wholesale and forward-market depth

Independent retailers must be able to obtain the energy and hedging products needed to effectively manage retail trading risk. Problems arise if gentailers tightly hold supply and where baseload, shaped, peak or scarcity-period products are unavailable (e.g. in shocks), offered in limited volumes, or subject to demanding collateral and credit terms.

Regulators have generally responded to this concern through a combination of standardised hedge products, directed contracts and market-making obligations, rather than generation-retail separation:

- In Great Britain, for example, the Secure and Promote rules historically required designated firms to quote standard monthly, quarterly and seasonal baseload and peak-load products.
- Ireland's Directed Contracts, France's historic ARENH regime, Alberta's PPAs, and Singapore's regulated supply contracts similarly released incumbent output to competing suppliers without changing ownership.

Even where stronger separation measures were adopted, including legal separation in Texas and accounting or functional separation in Ireland, it was accompanied by wholesale-product, contract-access and liquidity measures. Generation-retail separation alone was not relied on for access to risk-management products.

Access to wholesale products

Vertical integration may create opportunities for a firm to favour its own retail business through internal pricing, contract terms, access to commercially sensitive information or the allocation of scarce generation products. The concern is therefore not common ownership alone, but whether gentailers deal with competitors fairly.

Jurisdictions have generally addressed these risks through non-discrimination rules, accounting separation, information barriers, ring-fencing and arm's-length transaction requirements.

Great Britain's generation licence conditions, Ireland's ring-fencing arrangements and Western Australia's post-re-merger rules all follow this approach. These measures seek to preserve integrated ownership while limiting the ability to transfer advantages between generation and retail.

5.9 Key market concerns (continued)

International evidence identifies recurring competition and resilience risks but does not suggest that vertical integration is harmful of itself or that generation-retail separation alone resolves these risks.

Retail entry, expansion and viability

Vertical integration may be perceived to weaken retail competition, or create a risk of doing so, where incumbents can rely on their own generation while independent retailers must procure energy and hedges externally. If suitable products are scarce, costly or available on less favourable terms, entrants may find it harder to enter, scale or compete sustainably, potentially reducing customer choice and competitive pressure.

Across several jurisdictions, regulators have responded with pro-competitive measures – such as contract-access obligations, market-making, transparency rules and conduct controls – rather than more intrusive forms of separation. In Great Britain, these measures coincided with substantial independent entry, declining incumbent market shares and greater product innovation; Ireland and France also developed competitive retail segments with regulated access to incumbent output. These outcomes are attributed to multiple factors, where retail competition remained uneven across jurisdictions.

Fragility during shocks and scarcity

Standalone retailers can become vulnerable when wholesale prices spike, hedge markets tighten, collateral calls rise or counterparties withdraw. Great Britain's supplier failures and Australia's 2022 crisis illustrate how under-capitalisation and under-hedging can lead to retailer exits, customer transfers and costs being shifted to the wider market.

Vertical integration may strengthen firm-level resilience because generation earnings can offset retail losses, but it does not guarantee consumer protection or physical security of supply. Texas' experience during Winter Storm Uri shows that scarcity can instead arise from plant outages, fuel failure and market-design weaknesses. Resilience depends on prudential standards, hedge liquidity, fallback supply arrangements, fuel and capacity security, and consumer protections as well as ownership structure.

Ownership structure matters, but does not determine market outcomes

International experience indicates that the effects of vertical integration depend heavily on the wider market in which firms operate. Hedge-market depth, generation concentration, access to flexible capacity, interconnection, prudential requirements, retail switching and consumer regulation can all affect whether integrated or independent business models compete effectively. Littlechild's cross-country review illustrates this clearly: markets with quite different ownership structures have produced both strong and weak competitive outcomes, while regulatory interventions intended to improve competition have sometimes created new distortions of their own.

The international debate therefore closely resembles New Zealand's. Ownership structure matters, but it cannot be assessed in isolation from the rules, institutions and market conditions around it. This helps explain why jurisdictions facing similar concerns have adopted different remedies rather than converging on separation as a common solution.

The international academic debate on vertical integration mirrors New Zealand's

Stephen Littlechild's cross-country review²⁹ shows that many of the same issues debated in New Zealand recur across liberalised electricity markets: incumbent advantage, access to wholesale products, retail entry, customer switching, risk management and the effects of regulatory intervention. Littlechild's wider review covered the United Kingdom, Nordic countries, Australia, New Zealand, Texas and other US markets. Across these markets, he finds that the core issues considered in this review, including vertical integration, access to wholesale products, retail entry and regulatory intervention, play out differently under different market designs rather than pointing to a single preferred model.

Littlechild also illustrates why ownership structure should not be considered in isolation. He notes criticism in New Zealand that gentailer integration can create barriers to independent retail entry, but also records later growth in new entry and the Electricity Price Review's assessment that retail competition was working more effectively in New Zealand than in Australia and Britain.

Internationally, he documents both competitive-market successes and cases where regulatory interventions themselves weakened entry, switching or innovation.

Themes

International experience shows that market context, access to strategic assets and wider competitive settings are important to consider alongside ownership structure.

Market and policy context matters

Concerns with and approaches to generation-retail integration typically reflect wider market conditions, including system size, wholesale design, generation mix, interconnection, incumbent ownership and strategic assets, as well as policy objectives such as security, investment and consumer protection.

The EU and Nordic markets have relied on network unbundling and cross-border competition; Ireland combined regional integration with ring-fencing and contract access; Texas paired legal separation with broader market redesign; and Australia generally retained integration within an energy-only market. The same ownership structure can therefore produce different outcomes in different settings.

Vertical integration tends to re-emerge where it is economically efficient

Retailers often seek generation exposure as they scale because internal hedging can reduce transaction costs, collateral requirements and exposure to volatile wholesale prices.

This pattern is visible in Great Britain, where the initially separated market consolidated around the 'Big Six', and in the Australian NEM, where major retailers built or acquired generation portfolios. Octopus also entered Great Britain as an asset-light independent retailer but progressively invested in generation as its customer base and market share expanded. Western Australia went further by reversing its 2006 separation and re-merging Verve and Synergy in 2014 after financial and coordination problems emerged.

Pressure to reintegrate is not inevitable, but repeated examples suggest that integration re-emerges and can be a durable commercial response where external hedging is costly, incomplete or difficult to scale. Competition authorities and regulators in Great Britain and Australia have also recognised that vertical integration can generate risk-management efficiencies and is not, by itself, evidence of a competition problem.

Interconnection and market coupling can provide stronger competitive discipline than domestic restructuring

Cross-border links between energy markets can widen the pool of generation able to serve customers and reduce the likelihood that domestic firms become pivotal.

Evidence from the Netherlands suggests that new interconnectors and market coupling had a greater effect on wholesale competition than the firm-level ownership changes observed over the same period. The Nordic market similarly disciplines integrated national utilities through regional trading and complementary generation portfolios, while Spain and Portugal now share the same day-ahead price for most hours through MIBEL.

New Zealand does not have access to comparable cross-border interconnection or market-coupling benefits. Care is therefore needed in drawing direct lessons from these markets, as some of the competitive discipline attributed to their market structures may instead reflect integration with larger neighbouring electricity systems.

Control of strategic assets is more commonly targeted than generation-retail ownership

Competition concerns often centre on who controls scarce hydro storage, nuclear output, flexible thermal generation or other assets that rivals cannot readily replicate or access in periods of scarcity. Regulators have therefore often widened access to strategic capacity rather than separated generation from retail. France's ARENH provided alternative suppliers access to EDF's nuclear output; Ireland's Directed Contracts and Alberta's PPAs released incumbent generation to the market; and Germany's E.ON case used targeted generation divestments to reduce wholesale market power. These examples highlight the importance of clear definition of the problem and the more common approach of targeted interventions (horizontal separation) to address those issues rather than ownership separation.

Other market frictions can outweigh ownership structure

Structural reform does not guarantee stronger retail competition. Italy's regulated default market weakened switching incentives, Texas required additional comparison and consumer-protection reforms despite legal separation, and Great Britain showed that rapid entry can coexist with weak capitalisation and poor risk management. Retail outcomes therefore depend on switching, transparency, prudential standards and consumer protection. These measures have been evidenced in both integrated and separated markets, so cannot be substituted by separation.

An aerial photograph of a vast solar farm. The solar panels are arranged in long, parallel rows that stretch across the landscape. The panels have a blueish-purple hue, and the rows are separated by dark, narrow paths or grass. The perspective is from a high angle, looking down at the panels, which recede into the distance.

6

Practical
considerations
of separation

6.1

Summary

Ownership separation of New Zealand's gentailers is expected to be complex, costly, and take time to implement, with potential implications for investment and credit quality for the system.

This section provides PwC insights and perspectives on the key practical considerations of separating generation and retail activities.

This includes practical requirements to separate and potential implications for the entities once separated. The assessment has been developed from:

- Our understanding of the gentailers' current operating models and experience supporting large-scale separation programmes.
- Publicly available evidence from local and selected international jurisdictions,¹ drawing out qualitative insights and, where available, quantitative evidence.
- Detailed non-public information provided by each gentailer.

Key findings

There are a number of implications to consider when determining the steps required to separate. These are summarised below:

Day 1 design and readiness

Day 1 is the point of operational and financial separation. Before separation takes effect, each entity would require committed financing, regulatory approvals, standalone governance and systems, allocated people and contracts, tested operating processes, and transitional service arrangements for functions that cannot immediately operate independently.

This would require the review, allocation and, where necessary, renegotiation or novation of a large and complex contract portfolio while maintaining uninterrupted generation, trading, settlement, billing and customer service.

Loss and replacement of the natural hedge

The integrated gentailer model combines generation and retail activities with typically broadly offsetting exposures to the wholesale market. Replicating the integrated portfolio contractually (on Day 1 and ongoing) for 94% of annual electricity generation would be complex and costly, adding transaction, collateral and risk-management costs. It may leave residual exposures that are difficult or costly to hedge, particularly in dry years and other periods of market stress.

Regulation and market design

Ownership separation would need to be accompanied by refinements to regulatory and market design. Refinements may be required for arm's-length trading, non-discrimination, information sharing, prudential requirements, reporting and the treatment of the Day 1 hedge.

The existing retailer-default arrangements would also need to be reassessed for a market containing larger standalone, asset-light RetailCos. Recent market making and non-discrimination measures would need to be reviewed to determine whether they remained workable following the simultaneous separation of all four gentailers.

As a benefit, over time, separation could substantially increase demand

for external hedging. Consideration would need to be given to the design and approach to achieve this liquidity and what products would be required by participants in the future market.

RetailCo financeability and capital requirements

The RetailCo is likely to face the most immediate financeability pressure. It is expected to be an asset-light business with high operating leverage against customer and hedge contracts, and limited physical assets available to support its credit profile.

Compared with an integrated gentailer, a standalone RetailCo could require more liquidity, capital and collateral to support its market and contractual obligations. Its credit quality could depend on the strength, duration and pricing of its Day 1 hedge and subsequent procurement arrangements.

Weaker credit quality could increase borrowing and hedging costs, make the retail market more financially fragile during periods of wholesale-market stress, and make it harder for new generation entrants to secure strong offtake arrangements to support financing.

6.1 Summary (continued)

Ownership separation of New Zealand's gentailers is expected to be complex, costly, and take time to implement, with potential investment and credit concerns for the system.

Complexity, time and cost

While much is unknown about the potential path and contractual arrangements to separation, based on local and overseas examples of separation and our own experience in separation work in energy and other industries we have made a high-level assessment of potential time and cost of ownership separation. Key assessments are contained in the diagram on the right.

From a template perspective, demerging an integrated gentailer would be expected to occur over a number of sequential phases ranging from policy design and legislation through to post-separation transition and stabilisation.

It should be noted that pathways to separation have varying complexity depending on the separation option chosen, with different regulatory and legislative requirements to implement.

- Across the potential separation options, if ownership separation is pursued it is expected to be more complex and therefore more costly and prolonged.

- Less intrusive options such as accounting separation, functional ring-fencing or enhanced regulatory oversight are less complex and therefore less costly and quicker to implement.

Differences across the gentailers

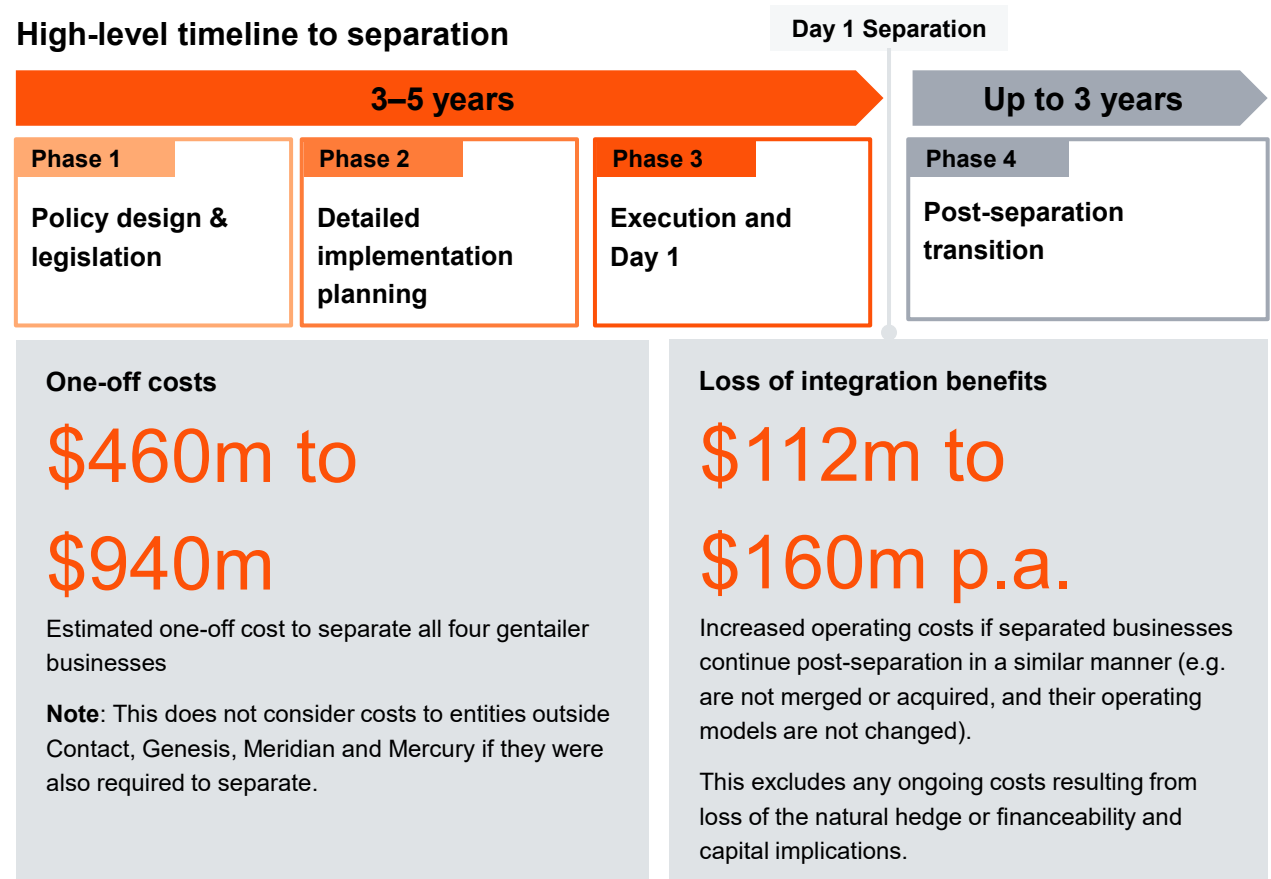
Generation mix, geography, scale and customer business design mean separation would likely affect each gentailer differently. This may be important to work through and could impact costs and timing of separation.

Experience

Overseas experience: regulators in Great Britain, Australia and Ireland have noted the costs and system-wide implications of separation as factors in decisions to focus on more targeted measures than ownership separation.

Unique position: If pursued, full ownership separation would place New Zealand as an outlier against international peer markets. Monitoring and compliance costs are also expected to be higher (although not quantified in this analysis).

High-level timeline to separation



6.2 Approach

Our approach to assessing the impacts of gentailer separation draws on operating models, public evidence and gentailer data to assess ownership separation across four key areas.

Our approach

This section provides PwC insights and perspectives on the key practical considerations of separating generation and retail activities.

This includes practical requirements to separate and potential implications to the entities once separated – providing a grounded view of what separation would involve in practice, the operational, financial and commercial considerations it would create, and the factors decision-makers should weigh before pursuing any such structural reform.

The assessment has been developed from:

- our understanding of the gentailers' current operating models and experience supporting large-scale separation programmes;
- publicly available evidence from local and selected international jurisdictions,^[1] drawing out qualitative insights and, where available, quantitative evidence; and
- detailed non-public information provided by each gentailer.

Comparable public evidence is largely qualitative, with limited consistent cost and timing data. Commercially sensitive gentailer information has therefore been used to test and cross-check our findings.

In our analysis, we have not estimated any potential benefits of separation. We expect any decision to move to formal separation would be subject to a net benefits test consistent with best practice from a

regulatory and assurance perspective.

This Section does not assess the market outcomes of separation. These are considered in Section 7. This section also does not consider implications for entities outside Contact, Genesis, Meridian or Mercury, but notes there are other entities with similar gentailer models who may also be impacted.

Separation options

The degree of cost, complexity and timing of any separation may largely be driven by the nature of the separation imposed on the gentailers. This Section adopts the separation options framework from Section 3.7 of this report, with a focus on the considerations for the most complex of separation options – ownership separation. The other options are considered for comparative purposes rather than examined in detail.

Scope

Pathways to implement separation have been assessed across the following areas:

- contracting;
- operating model;
- regulation, legislation and risk considerations.

We note there are key design choices needed to define any form of

separation. Accordingly, these assessments have been high-level to indicate likely areas of focus and time/cost.

Separation steps

Demerging an integrated gentailer is expected to occur in sequential phases:

- Phase 1: Policy design and legislation
- Phase 2: Detailed implementation planning
- Phase 3: Execution and Day 1
- Phase 4: Post-separation transition and stabilisation

Each step in the separation process has associated implications, some more material than others. Taken together, the implementation requirements and their implications give rise to a number of key findings.

Estimates only

It is worth highlighting that the costs and timelines in this Section are indicative and represent the potential cost of ownership separation. Producing robust estimates would require a detailed understanding of separation approach, contracting plans and detailed due diligence of each gentailer. Depending on the design of the separation and circumstances of each gentailer, there may be opportunities to reduce costs through alternative implementation approaches.

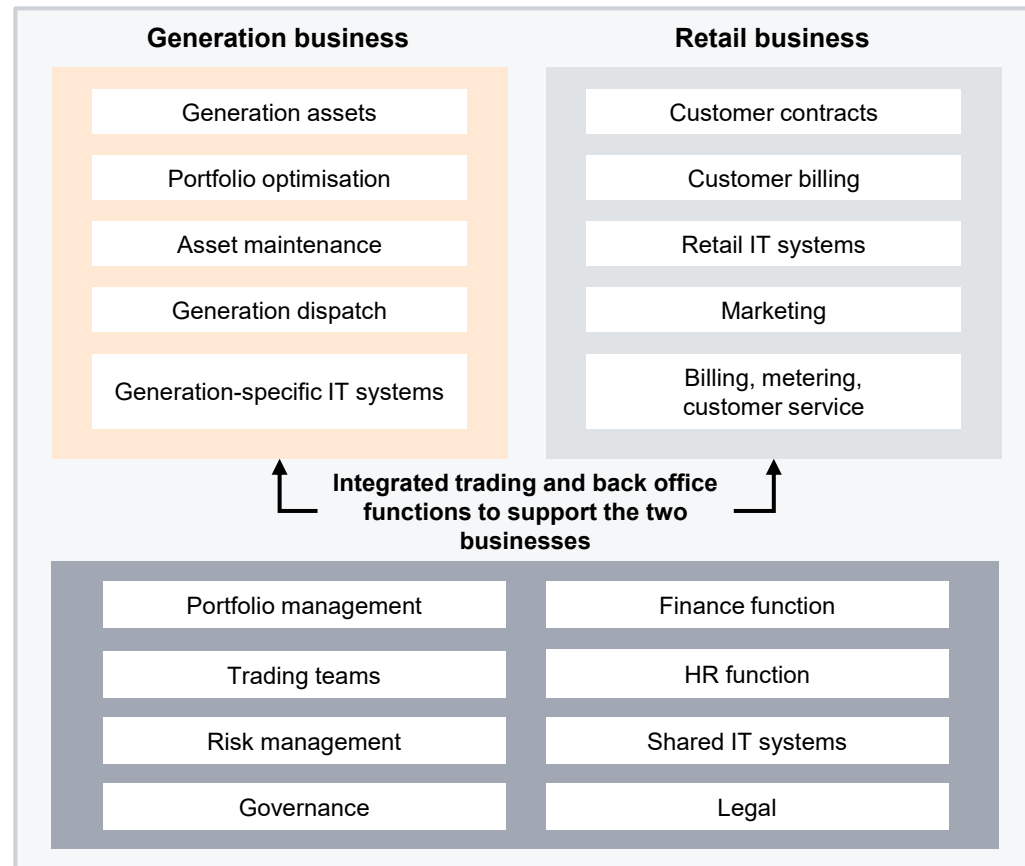
Note:

[1] Australia, France, Germany, GB, Ireland, and Texas

6.3 The gentailer model and what changes under ownership separation

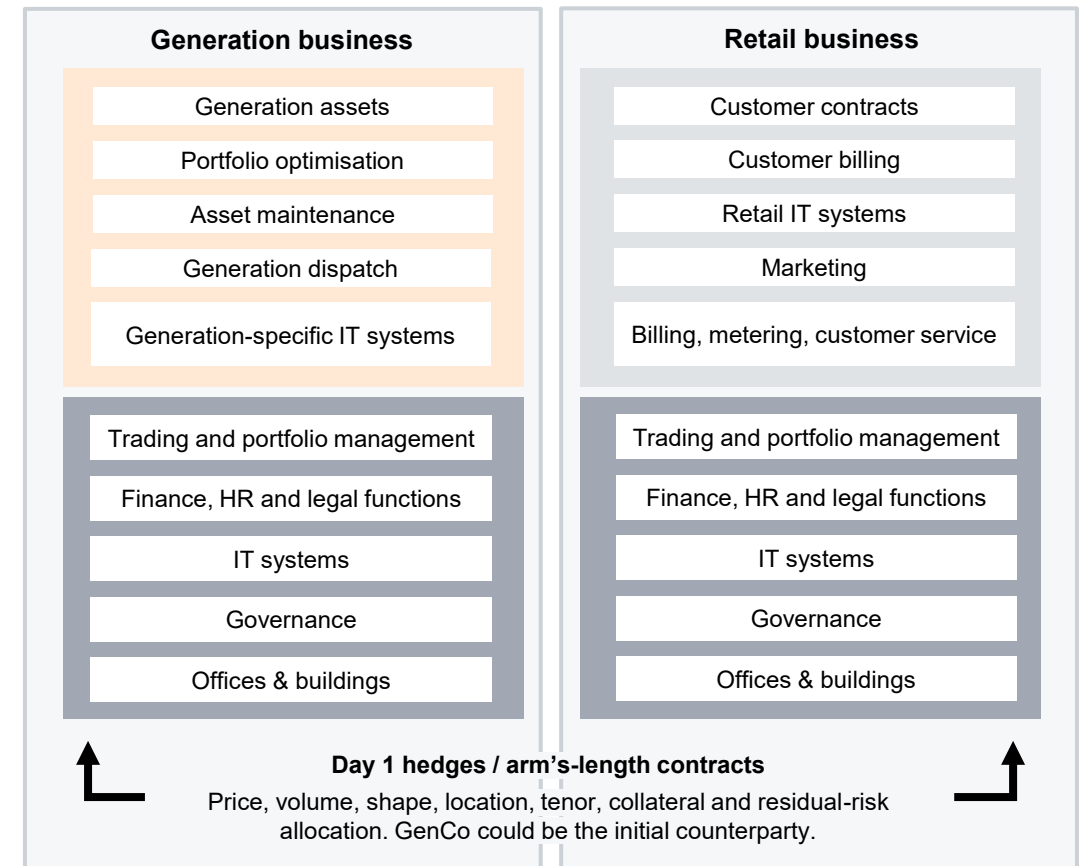
Separation reallocates functions currently managed in an integrated portfolio. The diagram below provides a high-level functional overview of the current and potential separated operating models.

Integrated gentailer business



Separation

Separated generation & retail business



6.4 Gentailer experiences will differ

Differences in generation mix, geography, scale and customer portfolio mean separation would likely impact each gentailer differently.

Gentailer-specific impacts of separation

Differences in generation mix, geography, scale and customer exposure mean separation would not affect each gentailer in the same way. The allocation of risks, assets, contracts, financing and operating capabilities would therefore need to be assessed separately for each business.

These differences mean a uniform separation model could produce materially different costs and risks across the four gentailers.

Any implementation programme would require gentailer-specific design to determine the appropriate separation boundary, Day 1 hedges, capital structure, contract allocation and transitional arrangements.

Generation mix

This affects the nature and value of each gentailer's natural hedge.

- Hydro generation is exposed to inflow and storage uncertainty, while thermal generation is affected by fuel availability, fuel prices, emissions costs and plant reliability.
- Geothermal generation provides relatively stable baseload output, while wind, solar and run-of-river hydro have more variable or limited controllability.

These differences affect the type, volume, shape and duration of hedges that a separated GenCo could provide and a RetailCo would need to purchase. Who takes on what risks, whether security products (e.g. the Huntly Firming Options) would be provided to GenCo or RetailCo and what security, if any, would be required to be posted to support contracts would need to be worked through in detail.

Geographic differences

A gentailer with generation and customer demand concentrated in different locations faces transmission, nodal-price and loss risks that cannot be managed through a simple national baseload hedge.

Separation could require additional locational hedges or financial transmission rights, and the availability and price of that protection may vary by region. These would need to be considered in light of the ability to transition to more common market products and contracts over time for each GenCo and RetailCo. Contracts may need to be designed so they are not so specific that the GenCo and RetailCo effectively become tied to each other for the long term.

Scale and portfolio balance

This influences the strength of the natural hedge and the ability to absorb market volatility. Larger and more geographically diverse customer portfolios generally reduce volume risk, while a closer match between generation output and retail demand makes the natural hedge more effective.

A gentailer that is materially long or short in generation (e.g. as they are providing significant firming products to the wider market) relative to its retail load would face different Day 1 hedge, collateral and external contracting requirements.

Customer exposure

This varies by load profile, volume, location and contract type. Mass-market customers typically create variable-volume and weather-sensitive demand, while large commercial and industrial customers may have flatter, larger or bespoke load profiles and longer-term supply arrangements.

The choice of where to draw the line in what is in and out of the RetailCo could make a large difference to each GenCo. For example, in addition to mass-market and SME retailing, the following services may be prohibited. This could have differing impacts for each gentailer:

- Commercial and industrial (C&I) sales.
- Contracting with C&I customers using PPA, CFD or other derivative contracts.
- Demand response contracts with large or small load customers.
- Direct heat, embedded generation, home solar and battery products and other potential customer relationships (e.g. financing of rooftop solar).

6.5 Implementation – designing the programme

Key operational design elements are required for Day 1.

Designing the separation programme

Separating an integrated gentailer would be a significant, multi-year transformation programme resulting in two financially and operationally independent businesses. The programme would require the allocation of assets, employees, liabilities, contracts, data, intellectual property and supporting rights between the two entities, together with the establishment of separate governance, management structures, financial reporting, decision-making authorities and performance frameworks.

Depending on the separation model adopted, the programme may also require the establishment and potential listing of a new GenCo (generation company) or RetailCo, together with the legal, regulatory and operational activities necessary to establish a standalone business.

Operating model

From Day 1, each entity would need to operate as a financially and operationally independent business with its own governance, management team, capital structure and operational capability. Assets, employees, liabilities and supporting rights would need to be legally allocated between the two businesses, while existing debt would need to be restructured to establish standalone financing arrangements, liquidity and credit support.

While some functions may initially be provided under Transitional Service Arrangements (TSAs), each business would ultimately require its own standalone operating capability.

Governance and corporate functions

Separation would require each entity to establish its own board, executive leadership and governance arrangements, supported by dedicated finance, treasury, HR, legal, procurement, risk and compliance functions. Separate financial reporting, performance management and decision-making frameworks would also be required.

Technology

The generation and retail businesses currently operate on shared technology platforms. Following separation, each entity would require its own technology environment, including finance and HR systems, productivity tools, cyber security capabilities and other enterprise applications necessary to support standalone operations. Examples of key systems include accounting/finance systems, HR and employee management systems, Microsoft Office suite, etc.

Business operations

In addition to corporate capability, each entity would require functions specific to its business model.

- **GenCo** – would require independent capability across generation operations, engineering, maintenance, dispatch, fuel procurement, forecasting, portfolio management, wholesale trading, settlement and market risk-management, supported by dedicated operational technology and market interfaces.

- **RetailCo** – would require standalone customer operations, including billing, customer service, demand forecasting, credit management and complaints handling, together with independent wholesale procurement, trading, risk management capabilities supported by dedicated retail technology platforms.

Trading functions

Each entity may require its own trading functions to manage its portfolio and hedging functions. These functions are currently combined and supported by vertical integration, which would not exist in the case of separation.

Further, the trading function would not simply be divided between GenCo and RetailCo on separation. It would likely need to expand to support greater external trading activity, as the separated businesses would no longer benefit from internal coordination between generation and retail.

6.6 Implementation – the separation process

Separation would be a substantial process, with significant work required to implement Day 1 hedges, develop transitional service arrangements and restructure debt.

Implementing the separation

Once the target operating model has been designed, the separation programme would require a series of legal, commercial and financial implementation activities to enable both businesses to commence operating independently from Day 1.

Day 1 hedge

RetailCo would require an arm's-length hedge, or an equivalent contractual arrangement, from Day 1 to manage its exposure to wholesale electricity prices. Across the four gentailers, the hedge would need to cover approximately 94% of annual electricity generation, and have to address key commercial risks, including contracted volumes, seasonal and daily demand profiles, locational and basis risk, duration, counterparty credit, collateral requirements and the allocation of residual market risks between the parties.

The agreement would provide RetailCo with an initial level of protection from wholesale price volatility. It would also transfer defined risks to GenCo or another counterparty, which would need sufficient generation, financial capacity or external hedging to manage those exposures.

If GenCo were the principal counterparty, the hedge would need transparent pricing, independent approval and appropriate regulatory treatment. Its terms should comply with applicable arm's-length, non-discrimination and information-sharing requirements. Consideration

would also need to be given to whether the hedge should include a staged roll-off rather than a single expiry date as retail and generation businesses transition to using market-traded products over time. This roll-off would also need to be considered alongside plans for increasing liquidity in required hedge, firming, dry-year support, PPA and other derivative products.

Debt restructuring

Separation may require existing debt facilities to be amended, refinanced or reallocated to establish standalone capital structures for GenCo and RetailCo. This could result in material one-off transaction costs, including lender consent fees, waiver fees, facility establishment and underwriting fees, bond issuance costs, early repayment or make-whole payments, and associated legal, tax, rating agency and advisory costs.

The extent of these costs would depend on each gentailer's existing debt portfolio, the separation perimeter and the capital structures adopted for each entity. Under the working assumption that RetailCo is spun out and most existing debt remains with GenCo, the debt restructuring costs could be lower than in benchmark separations involving a more extensive reallocation of debt and assets. However, this would depend on the terms of each instrument, lender and investor consents, change-of-control and covenant provisions, and the effect of the Day 1 hedge and other contractual arrangements on the risk and credit profile of each entity. Some instruments, such as United States Private Placement (USPP) notes, may be costly or time-consuming. These one-off

restructuring costs are separate from any ongoing changes in debt pricing that could result from standalone credit ratings and financial profiles.

Transitional Service Arrangements

During the transition period, previously shared corporate and operational services may continue to be provided under Transitional Service Arrangements (TSAs) while standalone capability is established. Depending on the separation model, these services are likely to include IT, finance, treasury, HR, legal, procurement, property and other corporate functions, with RetailCo potentially requiring additional transitional support for customer operations, billing, metering and trading.

Each TSA should have clearly defined scope, pricing, service levels, liability allocation, duration and exit arrangements. Importantly, TSAs should be temporary mechanisms to support separation rather than permanent operating arrangements, with a defined migration plan and accountable owner for each service.

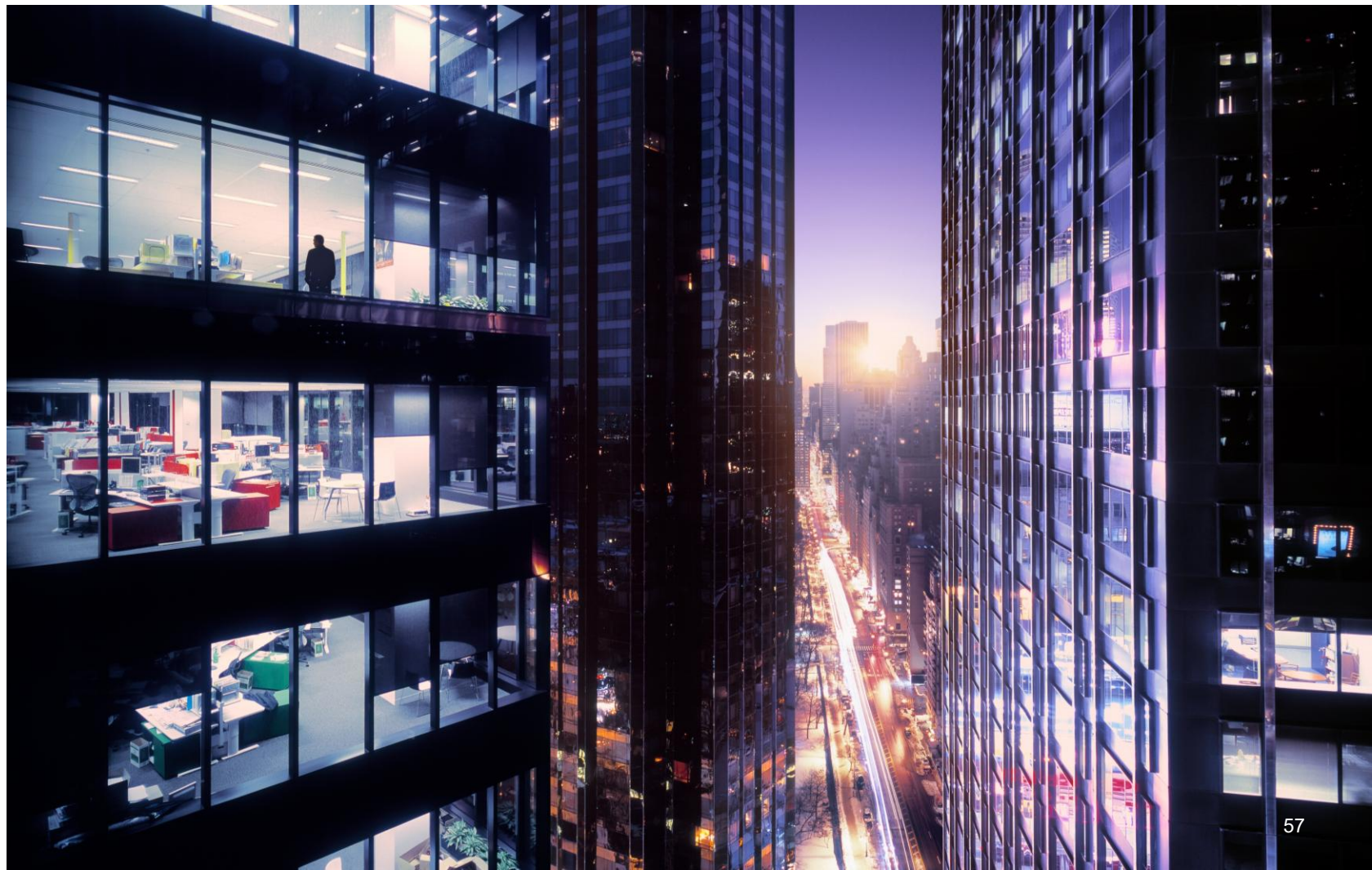
6.6 Implementation – the separation process (continued)

Separation would be a substantial process, including entering into transitional service arrangements and reviewing and reallocating contracts and debt facilities.

Contract amendments

A comprehensive contract amendment programme would also be required. Material contracts would need to be reviewed and allocated to GenCo, RetailCo or both entities before being assigned, novated, amended, replaced or terminated, as appropriate. This would extend across power purchase agreements, contracts for difference, gas supply agreements, financing arrangements, technology contracts, property leases, procurement contracts, employment arrangements and major customer contracts.

Particular attention would be required where contracts contain change-of-control or material adverse change provisions, or where they underpin critical operational capability. Gas supply agreements and bespoke commercial customer contracts may require substantial renegotiation to reflect the new corporate structure. Given the scale and complexity of the exercise, substantial legal, commercial, tax and accounting support would be required, and all material contracts should be executed and operationally tested before Day 1.



6.7 Implementation – legislation and regulation

Separation would likely require primary legislation and regulatory changes, and carries significant execution risk while maintaining continuous, reliable electricity operations.

Implementing ownership separation would require changes at several levels: primary legislation to authorise it, amendments to the mixed ownership model settings, subordinate Code and regulatory changes to operationalise it, and a review of the retailer default regime.

Legislation

The legislative pathway would depend on the form and degree of separation adopted. The 2026 NDO considers that ownership separation would likely require primary legislation, reflecting the significance of the policy decision, its implications for property rights and New Zealand's legislative history. Existing corporate separation provisions in Part 3 of the Electricity Industry Act 2010 address involvement in electricity distribution and certain generation activities, but do not require generation and retail businesses to be separately owned. Full ownership separation would therefore likely require a stronger statutory mandate than accounting separation, functional separation or enhanced regulatory oversight.

Primary legislation may need to cover the separation model, the entities and activities to which it applies, ownership restrictions, implementation and enforcement powers, transitional arrangements and the respective responsibilities of regulators and other parties. It may also need to address the implications for mixed ownership companies and Crown shareholding requirements.

In practice, the legislative process would involve policy development and consultation, Cabinet decisions, legislative drafting, parliamentary scrutiny and passage. This would need to be followed by the development of supporting regulations, Code amendments and other

implementation arrangements. Taken together, these steps would take time and effort, and they would need to proceed while electricity supply and market operations continued without disruption.

Mixed ownership model (MOM)

Genesis Energy, Meridian Energy and Mercury NZ are MOM companies listed in Schedule 5 of the Public Finance Act 1989. The Crown is required to retain at least 51% ownership and, in general, no non-Crown person may hold more than 10% of a MOM company. If newly separated GenCo and RetailCo entities were intended to have full MOM status, primary legislative amendments would likely be required to accommodate the new entities and ownership structure.

By contrast, these requirements would not apply in the same way to Contact Energy, which is not a MOM company and is instead a listed public company operating under the Companies Act 1993. Its separation would therefore raise a different set of company, shareholder and listing considerations.

Regulation

The treatment of the Day 1 hedges would require careful regulatory attention as they may represent over 90% of annual electricity generation. The regulatory framework would need to address Day 1 pricing, allocations to retailers, transparency, as well as how they are treated under arm's-length and non-discrimination requirements.

Regulatory involvement may also be required in the design, review or approval of the hedge arrangements, which could add complexity and time to implementation.

The existing Electricity Industry Participation Code is substantially capable of supporting the ongoing operation of separated generation and retail businesses. However, it does not currently provide the legal or regulatory framework needed to implement an ownership separation of the gentailers. Targeted Code amendments would therefore be required following the enabling legislation, including transitional provisions to support the move from integrated gentailers to standalone GenCo and RetailCo entities.

The regulatory framework may need refinement to govern the new relationship between GenCo and RetailCo after separation. This is likely to include changes to arm's-length and non-discrimination requirements, trading arrangements, information sharing, transfer pricing and related-party transactions. Amendments may also be required to participant obligations, market-making requirements, disclosure obligations, prudential requirements and compliance arrangements.

Default regime – retailer of last resort

Part 11 and Schedule 11.5 of the Electricity Industry Participation Code provide a process for trader and retailer default. Ownership separation would not, in itself, make this framework legally inoperable. However, separation may change the nature and scale of the risks that the regime is required to manage, especially continuity of supply after default. Retailers would be without generation asset backing with increased exposure to volatile wholesale market prices.

The EA may need to assess whether the existing arrangements are sufficiently robust to deal with the potential failure of a large standalone retailer.

6.8 Implementation – risks and mitigants

Separation creates operating and commercial risks, requiring a carefully designed and disciplined approach.

Separation would create a range of interrelated operating and commercial risks. Their significance would depend on the separation model, transition design, implementation discipline and the circumstances of each gentailer. The principal risks are summarised below, with key potential safeguards that could be used to manage each.

Risk area	Potential effect of separation on market outcomes	Key potential safeguards and mitigations
Execution and Day 1 readiness	Separation would require coordinated delivery across legislation, regulation, financing, contracts, systems, data, employees, governance, the Day 1 hedge and transitional services. These workstreams are interdependent, and delay or failure in one could leave GenCo or RetailCo unable to operate safely or meet its financial and regulatory obligations on Day 1.	Establish dedicated programme governance, clear accountabilities and integrated planning across all workstreams. Require formal Day 1 readiness criteria, operational testing, contingency arrangements and independent assurance before legal separation occurs.
Timeline and cost risk	Reliable estimates cannot be developed until the separation boundary, operating models and transitional arrangements are defined. Costs and timing could increase where systems are difficult to separate, contracts require renegotiation, debt must be refinanced or duplicated capabilities are greater than expected. Legislative passage, approvals, consents and workforce readiness could also delay implementation.	Undertake detailed bottom-up planning before committing to a timetable or budget. Include appropriate contingencies, staged decision gates, regular cost and schedule assurance, and clear mechanisms for resolving changes.
Design and incentive risk	The separation boundary, allocation of assets and customers, Day 1 hedge and regulatory framework could create unintended commercial incentives or financial exposures. Western Australia illustrates how transitional contracts intended to support separated entities can instead create financial stress or inefficient operating incentives.	Test the design under a range of market, dry-year, price and counterparty scenarios. Undertake independent economic, commercial and financial review of the interactions between contracts, market rules and entity incentives before implementation.
Credit and counterparty risk	A standalone RetailCo could have limited asset backing while remaining exposed to wholesale prices, hedge settlements, variable demand and collateral calls. A weaker credit profile could increase financing and credit-support requirements. GenCo could also face interrupted payments and replacement-contract risk if a RetailCo counterparty fails.	Define minimum capital, liquidity, hedging and prudential requirements for each entity. Stress-test the Day 1 hedge and capital structures, establish clear collateral and default provisions, and ensure that retailer-default and customer-transfer arrangements are workable for the failure of a large RetailCo.
Investor confidence and valuation risk	Uncertainty over future earnings, capital structures, credit ratings and market rules could reduce valuations and increase the returns required by debt and equity investors. This could also affect investors' perceptions of policy and regulatory unpredictability to international investors, potentially weakening perceptions of New Zealand's investability. These effects could arise before separation is completed and would depend on the credibility of the design and implementation programme.	Provide timely and credible information on the separation model, capital structures, regulatory framework and transition protections. Develop a coordinated investor and rating-agency engagement plan and reduce the period between key policy decisions and implementation where practicable.
Management distraction and investment deferral	Separation would absorb substantial board, executive and specialist capacity over several years. While future ownership, financing and regulatory settings remain uncertain, boards and management may defer or narrow discretionary investment. This could delay generation, firming, technology and customer investments while also increasing the risk of key-person attrition and weaker operational performance.	Establish dedicated separation teams so that business-as-usual leadership can remain focused on operations and investment. Protect critical investment programmes through clear decision rights and approval principles, appoint leadership early, and use retention measures for key operational, technology, trading and commercial personnel.

6.9

Estimated costs of implementing ownership separation

We have developed cost estimates for ownership separation assuming a spin out of a RetailCo from GenCo. The assessment is high-level noting detailed design choices impact costings.

Overview

This section provides an overview of the total assessed costs for ownership separation, including a high-level assessment of one-off and ongoing costs. This analysis aims to provide an indicative range of costs to inform considerations of gentailer separation.

We have drawn on PwC experience and available public information to capture insight across all components of separation. Although we have relied on specific assumptions to support our analysis, actual design choices and costs may differ.

Methodology

Our cost analysis combines both bottom-up and top-down approaches.

Bottom-up: drawing on PwC experience from relevant projects to estimate specific components of the separation process.

- **Contract novation, full-time equivalent (FTE) set-up costs and legal fees:** time and cost basis using precedent projects.
- **Organisation restructure & people:** assumed % of FTE salary from internal transformation projects.
- **Duplicated FTE & board costs:** public gentailer information on employee compensation and high-level organisation structure assumptions.

Note:

[1] TXU EV calculated using share prices pre/post separation, and debt and cash figures from most recent financial statements before and after separation.

[2] E.ON/Uniper EV calculated using share prices pre/post separation, and debt and cash figures from most recent financial statements before and after separation.

[3] Telecom EV figures sourced from scheme booklet, new Telecom and new Chorus potential market parameters table.

[4] Trustpower/Tilt EV calculated using share prices pre- and post- separation, along with net debt figures quoted in Table 27 of the scheme booklet.

PwC

Top-down: referencing comparable transactions to provide high-level numbers for separation costs.

- **Advisor & entity setup costs:** comparable local and international transactions, broken down into key workstreams.
- **Tech & systems:** comparable transaction information (particularly IT capex in the Telecom NZ demerger) and other PwC experience.
- **Required additional costs for separated entities & other operational dis-synergies:** benchmarked from comparable transactions and insight on administrative, systems and trading team costs from PwC analysis and gentailer non-public information.

Key assumptions

In our analysis, we have made several key assumptions:

- The retail business is carved out of the existing gentailer business, and subsequently listed as a separate entity.
- Some separation already exists within the gentailer business; however, core systems need to be stood up separately.
- No contracting penalties.
- Debt is largely retained in the GenCo.
- No redundancies are required.
- All costs are presented in 2026 nominal terms.

Key findings

Our initial analysis indicates one-off costs for each gentailer of **\$115m to \$235m**, or roughly **\$460m to \$940m** in total for all four gentailers – equivalent to **~1.0% to 2.0%** of enterprise value (EV).

Our analysis falls within similar ranges to those of other comparable New Zealand transactions. However, it should be noted that ownership separation of the gentailers may have different requirements and some efficiencies may be available if RetailCo can be carved out without impacting areas like debt arrangements. The comparator ranges are as follows:

- **TXU Energy demerger:** ~1.7% to 1.8% of EV
- **E.ON – Uniper demerger:** ~0.8% to 1.1% of EV
- **Telecom NZ demerger:** ~1.8% to 2.3% of EV
- **Trustpower/Tilt demerger:** ~1.9% to 2.4% of EV

We have also identified approximately **\$28m to \$40m of ongoing costs** (for each gentailer) resulting from separation due to duplicated functions. The separated entities may refine operating models over time to reduce these dis-synergies, but to stand up entities quickly we expect additional costs would be required on Day 1.

6.9

Estimated costs of implementing ownership separation (continued)

We estimate one-off separation costs of ~\$460m–\$940m for all four gentailers in total, or ~1.0%–2.0% of total EV.

	Cost category	Cost type	Description	Cost estimate (NZD)
One-off costs (per gentailer)	Legal & advisory costs	Debt restructuring costs	Debt restructuring fees, including bank establishment fees, early redemption etc.	\$30.0m–\$75.0m
		Legal fees	Legal support for separation.	\$0.5m–\$5.0m
		Other advisor costs	Advisor support for separation.	\$15.0m–\$35.0m
		Contract novation	Novating or assigning contracts, including design, testing and establishment of Day 1 hedges.	\$3.0m–\$5.0m
		Other setup costs	Governance, listing, branding, clean-up etc.	\$15.0m–\$30.0m
	Tech & systems costs	New system implementation	Cost to implement new systems required to allow businesses to operate independently.	\$50.0m–\$80.0m
	Organisation restructure & people costs	FTE setup costs	Advisor costs required to set up the recruitment process for additional FTEs.	\$0.5m–\$1.0m
		Hiring costs	Time and cost required to hire new employees.	\$1.0m–\$4.0m
	Total one-off costs			\$115m–\$235m
Ongoing costs (per gentailer)	Additional FTE & board costs	Additional FTE costs	Extra FTEs needed for separate support services.	\$21.0m–\$29.0m
		Separate board costs	Extra board members required for the separated businesses.	\$0.5m–\$1.0m
	Separate IT system costs	Separate IT system costs	Estimated cost for systems required to support business.	\$3.0m–\$6.0m
	Other operational dis-synergies	Loss of other integration efficiencies	Other integration benefits lost.	\$3.5m–\$4.0m
	Total ongoing costs			\$28m–\$40m

Other considerations

Some costs have been excluded from our analysis as we cannot easily estimate them or they are too uncertain. However, they have been cited in international research as concerns for increased system costs and ultimately higher costs for consumers.

Cost	Cost type	Description
Loss of participants with a natural hedge	Ongoing	The market and consumers would lose the efficiencies and potential cost benefit from participants being able to form a natural generation/retail hedge as an alternative to contracting
Potential lower credit quality or asset backing for retail providers	Ongoing	New standalone RetailCos are likely to have lower asset backing, may need higher prudential or security requirements, could have higher debt costs, and may become more fragile to market shocks. Overseas evidence, particularly from Great Britain, points to regulator concern, increased prudential costs and potential flow-on negative impacts to consumers especially in times of market shocks.

Note:

- All costs are indicative estimates only. Producing a robust estimate would require detailed due diligence of each gentailer, including its operating model, contractual arrangements, technology landscape, and capital structure.
- The estimates reflect the potential cost of an ownership separation. Depending on the design of the separation and the circumstances of each gentailer, there may be opportunities to reduce costs through alternative implementation approaches and, over time, transition to new operating models for GenCo and RetailCo.
- Estimates are presented on a per gentailer basis, using an average-sized New Zealand gentailer as the reference point.
- The debt restructuring estimates assume that the majority of existing debt remains with the generation business.

6.10 Timeline for ownership separation

Ownership separation could take up to 3–5 years to Day 1 start, then up to 3 years transition. This spans legislation, planning, execution, and post-separation stabilisation.^[1]

Table. Indicative phased implementation timeline for ownership separation

Phase 1	Phase 2	Phase 3	Phase 4
Policy design & legislation^[2] 1–2 years	Detailed implementation planning Up to 24 months	Execution & Day 1 Up to 12 months	Post-separation transition Up to 3 years
Activities: Policy decision: separation model design; regulatory framework refinement; public consultation; drafting legislation; parliamentary passage. Dependencies: Political mandate; election cycle; stakeholder consultation. Risks: Policy reversal; design flaws; extended consultation. Case studies: Western Australia took ~2 years from recommendation for separation to legislation requiring separation; New Zealand Mixed Ownership Model legislation took roughly 13 months from agreement to passing the Bill. Note: This phase is slightly different to pure policy changes which means there is some uncertainty in how long the process will actually take.	Activities: Business separation plan development for each gentailer; cost separation proceedings; asset valuation; contract inventory; IT systems assessment; regulatory engagement, Day 1 contract design and planning for new listing/entity establishment. Dependencies: Legislative framework enacted; regulatory guidance issued. Risks: Information gaps; underestimated complexity; regulatory delays. Case studies: TXU Energy had a deadline of ~7 months to complete separation plans; Western Power's planning for separation took place over ~2 years.	Activities: Corporate restructuring; legal entity establishment; asset and liability transfer; IT systems separation/duplication; contract novation; staff transfers; Day 1 hedge negotiation and documentation; standalone financing secured; regulatory re-registration, listing or alternate establishment process for new entities. Dependencies: Completed separation plans approved; Day 1 hedge agreed; financing confirmed; regulatory permissions; required FTE resources available. Risks: Operational disruption; financing delays; contract disputes; change-of-control triggers; key staff attrition. Case studies: E.ON – Uniper took ~1 year from announcement of intention to operational separation.	'Go-live' activities: Transitional service arrangements (TSAs) operate; RetailCo builds independent procurement capability; Day 1 hedge roll-off; standalone systems fully operational; TSAs wind down; compliance monitoring; portfolio rebalancing. Dependencies: Adequate TSA terms; hedge market depth; staff capability; regulatory oversight. Risks: TSA disputes; inadequate hedge market liquidity; RetailCo financial resilience; market disruption. Case studies: Transitional work for TXU Electric took ~5 years to complete.

Note:

[1] Benchmark separation exercises vary materially in length based on complexity and requirements. For example, RWE's carve-out of Innogy and minority IPO took 10 months from announcement; separation of Uniper from E.ON took around 25 months; TXU Energy took 7.5 years total (2.5 years to Day 1 and another 5 years of post-separation work); and Western Power's separation into Verve and Synergy took 4 years total.

[2] Phases 1 and 2 can occur simultaneously, with policy design and legislation alongside implementation planning.

6.11 Timelines for separation options

Other, less complex separation options could be adopted, with lower costs and shorter implementation timelines.

Separation option	Implementation requirements	Estimated timeline to Day 1	Estimated transition period	Indicative one-off cost range
No separation requirements	No requirements, existing business structure.	N/A	N/A	N/A
Regulatory transparency & behavioural obligations	- This could come in a number of different forms and would avoid structural reorganisation. - It could require targeted disclosure, non-discrimination, market-making, access, reporting and enforcement measures.		Current approach in New Zealand	
Accounting separation	- This would principally require separate accounts, cost-allocation and transfer-pricing methodologies, reporting controls, audit and regulatory assurance. - The main risks would concern methodology disputes, data quality and allocation accuracy.	12–18 months	None	\$10m–\$15m <i>Mostly advisor costs and some IT costs.</i>
Functional separation	- Involves separate selected management responsibilities, decision rights, information access, incentives, systems or teams. - Ownership integration retained. - This would likely require documented service boundaries, internal dealing protocols, information barriers and compliance arrangements. - Execution risk would arise from unclear boundaries, duplicated processes and ineffective controls.	1–2 years	Up to 1–2 years	\$40m–\$80m <i>Assuming some duplication of IT systems required, FTE and hiring costs. Debt restructuring not required.</i>
Legal separation	- Separate legal entities, boards, management teams, accounts, decision rights and performance measures would be required. - Regulation would need to address non-discrimination, transfer pricing, information sharing, audit and related-party transactions. - The legislative pathway is not clear. The EA considers primary legislation likely, but it may only require amendment to the existing Code provisions.	2–4 years	Up to 3 years	\$100m–\$190m <i>Assuming same as ownership separation without listing and other setup costs.</i>
Ownership separation	The most complex option. Implementation requirements are discussed in detail in Sections 6.4 to 6.7.	3–5 years	Up to 3 years	\$115m–\$235m

6.12

Separation precedent – Texas



Texas provides direct evidence on the complexities and duration of the separation process.

Texas is the key jurisdiction in our review that has implemented legal separation. This was passed in Senate Bill 7 in 1999, whereby incumbents were required to disaggregate into three separate generation, retail and transmission / distribution entities. Traditionally, customers purchased electricity from the incumbent company serving their area rather than choosing among competing retailers. Separation aimed to increase competition by reducing the incumbent utilities' positions. Incumbents had to separate by January 2002, marking the start of retail competition which applied to Electric Reliability Council of Texas (ERCOT) retail-choice areas.

TXU Electric is a well-documented example of an incumbent that underwent separation. The separation process began in June 1999 with initial business separation plans due on 10 January 2000, beginning the approximately 2-year, US\$324m process to Day 1.

The separation plan reflected the following steps:

- **Define the business and asset perimeters** (how the business is split between transmission, distribution, generation, retail, and portfolio management and trading).
- **Create new legal entities** (the transmission & distribution entity, Oncor, was created in November 2001).
- **Execute Master Separation Agreement** (agreement governing the internal reorganisation, including key aspects such as transfer of assets / liabilities, treatment of contracts and historical obligations, intercompany balances, transitional services, and regulatory requirements and adjustments).
- **Develop affiliate code of conduct** (governing interactions between Oncor and the affiliate companies).
- **Separate people, decision rights, and business processes** (assigning employees and decision-making authorities to the new businesses).

- **Separate IT and data** (required significant work as the existing systems were designed for a single provider).
- **Establish separate financial records and regulated tariffs** (producing standalone accounts for each business).
- **Restructure and allocate debt** (most significant cost incurred, at around \$196m out of total costs of \$324m).
- **Novate licences, contracts, permits and collateral** (novating and transferring contracts required for the businesses to operate independently).
- **Resolve other stranded costs and assets** (identifying and substantiating remaining items not initially considered).
- **ERCOT market opening** (one-off costs of \$108m–\$157m were incurred by the State of Texas to develop and open the market).

Despite the initial two-year period of work to Day 1, a further ~5 years of transitional work was required to fully separate the companies. A key component of this post-separation work was related to transitional service agreements and ongoing regulatory true-up processes.

June 1999

Senate Bill 7 passed, TXU separation process commenced.

January 2000

TXU separation plans due.

November 2001

The new legal entity for transmission & distribution, Oncor, was created.

January 2002 – Day 1

Retail competition began in Texas, separation process completed. Competitive retail choice opened.

January 2007

Transitional work following initial Day 1 separation completed, fully separating the companies

US\$324m
(\$648m) ^[1]

Real (nominal) Cost incurred up to Day 1.

US\$196m
(\$388m) ^[1]

Total real (nominal) cost spent on restructuring and allocating debt.

6.13

Separation precedent – Separation of Uniper from E.ON



Separation of Uniper from E.ON took around 25 months from announcement to termination of remaining control arrangements, incurring 280m EUR of direct costs.

Background

E.ON and RWE provide two large-scale European examples of commercially driven corporate separation. Both restructurings were undertaken at group level and were not mandated by electricity regulators or legislation. Their relevance is therefore not as evidence of the effects of regulatory separation, but as practical examples of the activities, costs and time required to separate large integrated electricity businesses.

Across both cases, operational independence was established before legal separation. This required the creation or duplication of corporate functions, management arrangements, shared services and systems, together with the transfer or novation of assets, employees and contracts. E.ON completed operational separation around nine months before legal separation, while RWE did so around three months before.

E.ON Demerger

E.ON's demerger split the company into two legally separated entities, with E.ON focusing on renewables, energy networks, and customer solutions (retail), and Uniper focusing on generation (hydro, natural gas, coal).

The separation took around 14 months to reach operational Day 1, which included all the activities required to operationally separate the business (e.g. separation of assets, entities, employees, systems, financing & contracts). A further ~8 months of work was required to legally separate the two entities and formally list Uniper. In December 2016, ~25 months after the initial announcement, the remaining control arrangements between the groups were terminated.

Regarding the cost of separation, a total of 120m EUR was incurred up until "Day 1" operational separation. E.ON expected that a further 160m EUR in costs would be incurred following this date, producing a total spend of ~280m EUR for the following activities:

- Separation of IT systems and applications
- Establishment of standalone functions for Uniper
- Rebuilding energy procurement and marketing capabilities
- External advisor support for separation and listing costs
- Other work to make E.ON and Uniper operationally separate.

These represented the direct costs associated with the separation, with a further 80m EUR in taxes incurred from the spin-off of Uniper. Of note here is the lack of regulatory or legislative requirement for separation, potentially reducing the length of time to separate compared to the high-level timelines provided.

November 2014	Throughout 2015	January 2016	September 2016	December 2016	June 2018
E.ON announced intention to separate the generation & trading businesses.	Separation of assets, entities, employees, systems, financing & contracts into E.ON and Uniper perimeters.	E.ON and Uniper started operational Day 1.	Legal carve out substantially completed, followed by a separate listing of Uniper.	The remaining control arrangements between the groups were terminated.	E.ON completed the sale of its retained Uniper interest.

120m EUR
(169m EUR) ^[1]

Real (nominal) Cost incurred up to Day 1.

280m EUR
(394m EUR) ^[1]

Real (nominal) separation cost incurred in total.

6.13 Separation precedent – RWE Demerger



Separation of Innogy from RWE was a carve-out and minority IPO, resulting in a fast separation process of only 10 months.

RWE Demerger

RWE initially carved out its renewables, distribution, and retail business into a new subsidiary called Innogy. Following this, it was announced in March 2018 that RWE and E.ON were further breaking up Innogy and undertaking a large asset swap to concentrate their operations (RWE on renewable generation, and E.ON on distribution and retail).

The initial announcement took place on 1 December 2015, where the new Innogy subsidiary and a proposed IPO were publicly announced. Ten days later on 11 December, board approval was granted and the target operating structure confirmed. Operational separation occurred ~5 months later in April 2016, followed by legal separation and completion of asset transfer in June 2016. By September 2016, IPO activities were complete and shares began trading on 7 October 2016, roughly 10 months after initial announcements.

This process is relatively fast compared to other separations, as RWE controlled Innogy and, following the IPO, held approximately 76.8% of total shares. This meant the transaction was more of a carve-out and a minority IPO rather than a complete demerger.

Total costs for the actual separation process were not widely published; however, a total of 75m EUR was incurred as direct IPO transaction costs. This included 25m EUR of transaction expenses associated with Innogy's issue of new shares, and 50m EUR of transaction costs to sell RWE's existing Innogy shares.

Timeline for RWE and Innogy Separation

December 2015	April 2016	June 2016	July 2016	September 2016	October 2016
RWE announces separation and proposed IPO of Innogy. Innogy's target structure confirmed.	Innogy commenced operations as a new renewables, networks and retail group.	Legal separation and asset transfers complete.	Innogy fully operational.	Formal intentions for an IPO announced.	Innogy shares began trading.

6.14 Separation precedent – Western Australia



The merging of Synergy and Verve in WA highlighted the potential cost benefits of vertical integration.

Although no separation requirements exist for Australia at present, Western Australia pursued legal separation in 2006 before reversing its decision in 2014. Western Power was the key focus of this separation, as historically it had dominated the market as a vertically integrated state-owned entity responsible for generation, transmission, distribution and retail.

The context for separation began in the early 2000s, when the State Government undertook comprehensive reforms to encourage competition and private investment. These aimed to introduce competition and improve efficiency in the energy sector. In 2006, Western Power was separated into four entities all under state ownership, with Synergy and Verve Energy created to own the retail and generation businesses, respectively. Separation took approximately four years to complete, not including time and work prior to the Electricity Reform Task Force's final recommendation for separation in October 2022.

However, following a period of doubt about the benefits provided by separation, Synergy and Verve were re-integrated into a single business. Reasons cited for the re-integration include difficulties maintaining Verve's financial sustainability, coordination of generation investment with future demand, management of state ownership through separate boards, and maintaining competition whilst ensuring security of supply. Further to this, retail competition remained limited as most small customers could not choose an alternative provider, limiting Synergy's ability to operate as a standalone retailer.

Re-merging the businesses restored a number of benefits for the businesses, including restoring the natural hedge, creating stable offtake volumes for the generation business and reducing Synergy's exposure to wholesale price volatility and security of supply risks.

Although one-off cost estimates for the merger are not widely available, some material cost savings were forecast upon integration of the businesses. These are displayed opposite.

2014 post-merger financial impacts^[1]

AUD \$137m

Overheads forecast to reduce by approximately \$137m over the forward estimates, reflecting the streamlined structure, generation maintenance changes and lower insurance costs

AUD \$35m

Reduced or deferred generation and IT capex.

AUD \$69m

Earlier repayment of former Verve Energy debt - forecast to reduce finance costs by \$69m over the forward estimates.

Note:

[1] Department of Treasury. (2014). *2014–15 Government Mid-year Financial Projections Statement*. Government of Western Australia; Government of Western Australia. (2014, 22 December). *Decision to merge Synergy and Verve paying off*. [Media statement].

Timeline for Western Power Separation

Early 2000s	October 2002	August 2004	October 2005	April 2006
Early discussions on changes to legislation.	Electricity Reform Task Force's final recommendations for separation.	Western Power's internal reorganisation into four semi-autonomous business units.	Implementation of the Electricity Corporations Act, governing the requirements for separation.	Formal separation of the businesses occurred, producing the distinct generation, retail and transmission/distribution businesses.

6.15 Separation precedent – Trustpower



Separating Trustpower into Retail and Generation (Manawa) and selling Retail to Mercury provides a New Zealand-based example of separation.

What happened

In 2022, Trustpower sold its mass-market electricity, gas, broadband and mobile retail business to Mercury NZ for \$467 million, retaining its electricity generation portfolio and commercial and industrial customer base. The transaction transferred approximately 230,000 customer connections and the supporting retail operations, systems and employees to Mercury.

Trustpower, renamed Manawa Energy following completion, retained 44 hydro stations (approximately 8% of New Zealand's hydro generation). Manawa repositioned as a standalone renewable generator, focusing on its existing portfolio and developing new generation projects.

A central feature of the transaction was a 10-year, declining-volume hedge agreement between Mercury and Manawa. This contract provided Mercury with generation-linked price protection for the acquired retail load while giving Manawa time to progressively replace the demand previously provided by Trustpower's retail book.

The transaction was a divestment rather than a conventional demerger into two separately listed companies. However, it created a genuine separation of Trustpower's mass-market retail and generation activities with different ownership and provides a practical example of replacing the natural hedge of vertical integration with contractual arrangements.

Why it happened

Trustpower concluded that its generation portfolio and retail platform had different strategic requirements. Separating the businesses allowed the retained company to focus capital, management attention and capability on renewable generation operation and development, consistent with the increasing demand for new renewable electricity supply.

Trustpower considered that its multi-product retail platform had better growth potential within a larger utility with greater scale and more capacity to invest in digital systems, customer analytics, brand development and product innovation. Mercury could therefore extract greater value from the retail business than Trustpower while also pursuing a generation-led strategy.

For Mercury, the acquisition increased its customer base and accelerated its move from a traditional electricity retailer toward a multi-utility offering electricity, gas, broadband and mobile services. The transaction also created opportunities for customer bundling, cross-selling, technology investment and operating efficiencies.

Trustpower's retail demand had previously provided a natural offset against the price and volume risks of its generation portfolio. The long-term hedge agreement replicated part of that protection, reducing Mercury's exposure to wholesale price volatility while allowing Manawa to transition gradually toward alternative customers, PPAs and wholesale market sales.

Total costs & synergies

~\$50m NZD

Of separation related costs incurred by Mercury over 3 years¹.

~\$35m NZD

Of cost synergies per annum post-transaction.

¹: https://issuu.com/mercurynz/docs/mcy_tpw_presentation_21_june_2021?fr=sNTVhZDE4MTY2Nzk

1

18 months to Day 1

Initial Separation & Design

Initial separation and design complete i.e. dealing with parallel market participation arrangements and reconciliation, identifying which activities, customers, systems and responsibilities remained with whom.

2

12 months to Day 1

Preparation for standalone operation & integration

Trustpower retail further disconnected from Manawa. Separate governance and decision-making arrangements introduced, supporting functions allocated.

3

6 months to Day 1

Shadow separation

Separation was tested through multiple "shadow" exercises, and four months pre-settlement were operating as standalone businesses.

4

Day 1

Shadow separation

48-hour integration to transfer ownership and operations to Mercury.

5

Transitional services & integration

Continual provision of services between businesses with removal of residual dependencies, technology, network and infrastructure rationalisation.

7

Potential implications
of separation on
market outcomes



7.1 Summary

This section summarises market impacts (or anticipated impacts) of separation from available local and international evidence using the energy trilemma framework. Available evidence shows targeted regulatory measures provide more conclusive net benefits than more intrusive forms of separation.

Evidence-based assessment

Affordability

Evidence indicates that further separation could improve hedge transparency, retail competition and arm's-length wholesale dealing, although direct evidence of flow-through impacts to consumer prices is limited. In Texas, legal separation supported by targeted regulatory measures have been in place for over 25 years, but the evidence is inconclusive on its impact on consumer prices.

In choosing not to pursue higher forms of separation, many jurisdictions noted risks to affordability from removing the natural hedge, raising collateral and funding costs, and increasing exposure to wholesale price shocks. Targeted measures, such as improved hedge access, market-making, switching tools, market-power remedies and better flexibility-market settings, have been used more commonly to target areas of concern, and improve access and conduct while retaining integration benefits.

- Hedge access and liquidity
- Choice, retail competition and switching
- Wholesale incentives and pivotal supply
- Financeability, credit support and continuity of supply
- Pricing in times of shocks
- Distributed energy resources and flexibility

Security of supply

Separation could improve transparency, arm's-length access to firming and shaped products, and opportunities for independent investment and flexibility services. However, there is no clear evidence it increases physical firming capacity or dry-year resilience, potentially adding transition uncertainty, weakening retailer credit and reducing the pool of investment-grade counterparties. Targeted measures have been used offshore to more directly address resilience improvements in markets with vertical integration.

- Investment in firming and resilience assets
- Availability of firming and shaped products

Sustainability

Separation could improve arm's-length access to offtake and PPAs for independent renewable developers and reduce concerns of gentailers favouring their own projects. However, the reviewed evidence does not establish that separation accelerates renewable investment. Transition uncertainty and greater reliance on external firming and offtake may delay projects given New Zealand's lower secondary market liquidity. Overseas markets, including Texas, which has enforced ownership separation, have focused on targeted liquidity reforms to improve hedge market and PPA access and targeted incentives to meet sustainability goals.

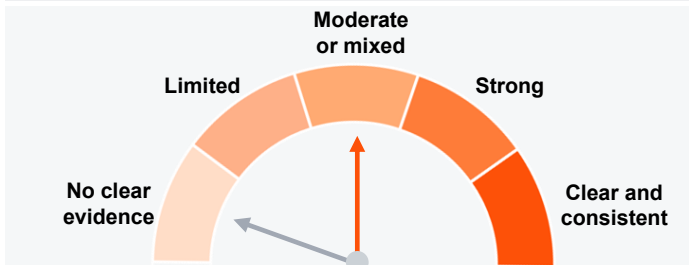
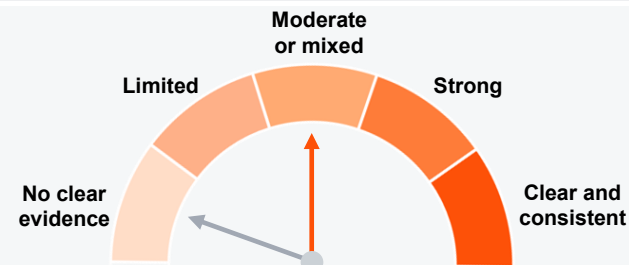
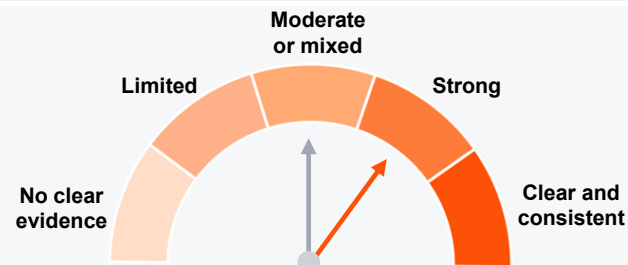
- Regulatory and transition uncertainty
- Renewable investment, portfolio transition and PPAs

Evidence categories

Strength of evidence

- Corporate separation
- Less intrusive or targeted regulation/separation options^[1]

PwC



Note: [1] 'Less intrusive options' includes accounting separation, functional separation, enhanced regulatory oversight and targeted hybrid measures. Legal separation is expected to have implications closer to ownership separation than to targeted regulatory measures.

7.2 Approach

This section assesses the potential effects of separation on the trilemma market outcomes and the extent to which international experience is transferable to New Zealand.

Evidence base

This section draws on evidence and findings from New Zealand and international research, submissions and regulatory review findings, including:

- Post-implementation evidence from Texas and Western Australia, the principal jurisdictions identified as having implemented legal separation.
- Findings from regulators that considered, but did not pursue, ownership separation.
- Evidence from less intrusive separation and access measures.
- Relevant New Zealand evidence considered elsewhere in this report.

Scope and assessment framework

The evidence is considered through ten key evidence categories that are aggregated into the energy trilemma, as shown in the chart to the right.

For each evidence category, we outline the observed potential benefits and cost/risk of separation, followed by the key findings from both international and domestic evidence.

Qualitative assessment

The evidence in this section is predominantly qualitative. Legal separation, where enacted in Texas or Western Australia, was part of a wider reform package, making any ex-post assessment of separation itself difficult. In the case of:

- Texas, separation was also followed by more targeted reforms to assist with hedge market liquidity and competition.
- Western Australia, the 2006 separation into generation, network, retail and regional entities was partially unwound in 2014 when generation and retail recombined following Verve's losses and distorted vesting-contract outcomes.

The lack of direct ex-post evidence makes benefits/causation difficult to isolate. We have therefore drawn on evidence from multiple other jurisdictions on identified pros and cons of legal separation.

Differences in concentration, generation mix, hydro dependence, contract-market depth and regulatory design also need to be considered in applying evidence to New Zealand.

Evidence categories linked to the energy trilemma

Affordability	Security of supply	Sustainability
• Hedge access and liquidity • Choice, retail competition and switching • Wholesale incentives and pivotal supply • Financeability, credit support and continuity of supply • Pricing in times of shocks • Distributed energy resources and flexibility	• Investment in firming and resilience assets • Availability of firming and shaped products	• Regulatory and transition uncertainty • Renewable investment, portfolio transition and PPAs

Note: there is some overlap in commentary/evidence across the trilemma, so where covered in earlier categories (e.g. Affordability) we have not sought to repeat in other categories

7.3

Affordability: Hedge access and hedge-market liquidity

Whether independent participants can obtain baseload, peak, super-peak, shaped and longer-dated hedge products in sufficient volume, tenor and credit terms to manage wholesale risk without owning generation.



Key findings and evidence

Potential benefits: Arm's-length generation and retail entities could increase visible external trading, reduce perceived affiliate preference and improve price discovery.

Potential cost / risk: Loss of the natural hedge increases reliance on external hedges, collateral and credit support; separation does not create physical firming capacity.

Key finding: Potential benefits from separation are plausible, but the reviewed evidence does not isolate generation-retail separation alone as the cause of deeper liquidity.

- Evidence establishes hedge access and product availability as a real competition issue.
- Observed remedies are more clearly linked to targeted access, transparency, market-making and directed-contract measures.
- New Zealand approaches to date are consistent with international evidence of using targeted measures in addressing hedge access and liquidity concerns.



International examples

- The CMA (2016) in Great Britain found vertical integration reduced external wholesale liquidity because integrated firms benefit from the internal natural hedge. It did not find vertical integration itself caused an adverse effect and supported targeted liquidity/access remedies ahead of more intrusive corporate separation.
- Ofgem's 2014 Secure and Promote rules required 'Big Six' quotes for standard baseload and peak products. Ofgem reported liquidity improvement after 2014 but noted attribution limits; the market-making obligation was suspended in 2019 after too few obligated firms remained.
- Ireland, France, Alberta and Singapore used directed contracts, ARENH (baseload access for independent retailers in France), PPAs or vesting contracts to release incumbent output or constrain market power without ownership separation.
- Nordic evidence links liquidity to gross bidding, transparency, interconnection and 20+ market makers; reforms post the 2021-2022 energy crisis focused on EPAD auctions (targeting borders with high price separation risks) and market-making support rather than separation.



New Zealand examples

- 2009 Ministerial review identified low standardised trading volumes, bilateral bargaining problems and regional exposure; generation-retail separation was assessed as "not likely to have net benefits". Instead, targeted hedge-market and regional measures were identified as favoured pathways.
- 2019 EPR found voluntary market-making became fragile in stressed conditions, with bid-offer spreads sometimes above 50%. As a result, mandatory market-making and disclosure were adopted.
- 2025 LPF found almost all non-integrated retailer OTC requests received at least one offer, but more than one-third of shaped-hedge requests received only one offer. The EA supported a proportionate response rather than legal separation.
- 2026 super-peak reforms: the proportion of contracts with at least 6 MW offered increased from about 10% to 85%; super-peak prices fell from c. 1.5x to c. 1.3x equivalent baseload hedges before mandatory market-making commenced.

7.4

Affordability: Consumer choice, retail competition and switching

Whether separation improves entry, switching, product choice and consumer outcomes, and whether those outcomes can be distinguished from wider retail-market reforms.



Key findings and evidence

Potential Benefits: Separation could reduce incumbent advantages, improve access for entrants and support more active retail rivalry.

Potential cost / risk: Customer inertia, default arrangements and retailer financeability can limit outcomes even where accounting and legal separation and retail choice exist.

Key finding: Evidence of consumer-price benefits from more intrusive forms of separation is mixed. In Texas, legal separation supported by targeted regulatory measures have been in place for over 25 years, but academic research has produced inconclusive evidence on its impact on consumer prices, with some studies instead finding higher price volatility. Targeted retail and access reforms have a more direct evidential link to the identified issues.

- Separation can support retail competition as part of a wider reform package; Texas is not a clean separation-only test.
- Switching tools, price comparison, default arrangements, prudential standards and hedge access are cited as central to observed beneficial consumer outcomes, not just generation-retail separation alone.



International examples

- Legal separation in Texas began concurrently with retail competition in 2002, being implemented alongside other measures including: price-to-beat, generation-capacity auctions, open access, 20% generation ownership cap, affiliate rules and consumer protections. Despite separation, the incumbent retained more than 60% of the relevant market after four years. Hartley, Medlock, and Jankovska (2017) found that retail competition benefitted from a diverse range of product offerings.
- Retail competition in Great Britain improved without mandatory generation-retail separation: Big Six share fell from 100% to c.70% by 2020, in part due to Secure and Promote licence conditions. Ofgem's 2017 report showed electricity retail HHI fell from 1,353 to 1,247 (increased competition) in the year to June 2017, while the six largest retailers still held 82%.
- Alberta's PPAs gave entrants access to incumbent output, but retail concentration remained; ENMAX served more than half of Alberta's electricity customers between 2012 and 2015.
- France and Italy show default or regulated tariff settings can preserve incumbent positions even where formal retail choice exists.



New Zealand examples

- 2019 EPR found customer inertia and a two-tier market: 23%–42% of consumers had not switched since records began in 2002.
- Post-EPR reforms targeted comparison, data access and retail conduct, including mandatory market-making, ITP/RGM disclosure, Powerswitch consolidation and a 180-day restriction on targeted saves and win-backs.
- 2025 LPF / 2026 NDO found retailer exits, market shares, switching and retail margins could be consistent with anti-competitive conduct, but could also reflect competition for scarce firming and hedge products. The EA found no definitive margin squeeze from 2018 to 2023.
- Stakeholder submissions are divided: independent retailers and consumer groups favour stronger access/separation while gentailers and industry groups attribute issues more to firming and fuel scarcity.

7.5

Affordability: Wholesale-price incentives, market power and pivotal supply

Whether integration or separation changes the ability or incentive to raise wholesale prices, withhold output, favour affiliates or control scarce flexible supply.



Key findings and evidence

Potential benefits: Separation may increase arm's-length dealing and reduce perceived incentive to favour affiliated retail load.

Potential cost / risk: A separated net-long generator may have stronger incentives to benefit from high spot or forward prices, while an integrated retailer load can dampen this incentive.

Key findings: Targeted market-power, contract-access, virtual-disaggregation or asset-specific remedies are more directly linked to the concern than ownership separation.

- The evidence points more strongly to horizontal concentration, pivotal flexible assets, hydro/fuel scarcity and strategic capacity access as the key concern in international markets than generation-retail ownership.
- There is contrasting incentive evidence: NZ reviews identify risks of incentives to increase wholesale prices from gentailer control of flexible supply, while MIBEL and Australian evidence recognise that retail load can dampen incentives to raise spot prices.



International examples

- The 2016 CMA report in Great Britain found vertical integration reduced liquidity in the wholesale electricity market but did not find vertical integration itself to have adverse effects on competition. Concerns were addressed through targeted liquidity interventions rather than recommending separation.
- In Germany, the European Commission addressed E.ON market-power concerns through targeted commitments, including sale of about 5,000 MW of generation and its transmission network; it did not require generation-retail separation. Subsequent empirical work linked the generation divestitures to a narrower peak/off-peak price gap, with effects strongest for coal and gas assets able to influence marginal and peak prices.
- In Singapore, the EMA used vesting contracts to reduce generators' incentive to withhold supply. A 2016 review found vesting contracts helped constrain market power and improve dispatch, while noting administrative and incentive drawbacks.
- MIBEL research found vertical integration could reduce incentives to raise spot prices where integrated firms were net purchasers for retail load but could also create production inefficiencies.



New Zealand examples

- Frank Wolak and the Commerce Commission (2009) estimated \$4.3 billion of wholesale market-power rents over 6.5 years, equal to 18% of generation revenue. In the dry years 2001 and 2003, estimated rents reached 45%–50% of wholesale revenue, or about \$1.5 billion in each year. However, this was dismissed, as Treasury advised Ministers that Wolak's figures were "not credible" and should not be relied upon, and there was no observed breach of the Commerce Act by gentailers.
- 2009 Ministerial review tested generation-retail separation but concluded it would not necessarily change the hydrological, regional, transmission and contracting conditions that allowed market power to emerge.
- 2021 Wholesale Market Review found an upward price shift not fully explained by fundamentals. Meridian was gross pivotal in the South Island for c.90%–95% of the period. Indicators were mixed and no definitive breach of the Code was found.
- 2023 MDAG and 2026 NDO focused on flexible supply concentration and access. The EA found credible concerns but no conclusive anti-competitive conduct.

7.6

Affordability: Financeability, credit support and continuity of supply

Whether replacing the natural hedge with external contracts changes collateral, capital, credit quality and retailer failure risk.



Key findings and evidence

Potential benefits: Separation could make internal costs and dealings more transparent and remove balance-sheet advantages viewed as favouring integrated incumbents.

Potential cost / risk: Standalone retailers may face higher hedge, collateral, credit-support and working-capital costs, weaker credit quality and greater failure risk during market shocks.

Key findings: A number of review and regulators identify financeability and credit support as material costs or risks of separation.

- The potential transparency and access benefits are acknowledged, but observed evidence of lower overall financing or supply costs from separation is not identified.
- Evidence from Great Britain and On Energy in New Zealand shows how undercapitalised retailers or those without generation assets are exposed to wholesale price shocks and at risk of failure.



International examples

- As part of their 2018 NEM review, the ACCC recognised that vertical integration provides an efficient natural hedge against wholesale price risk. It found evidence that the Big Three retailers obtained lower OTC hedge prices than other retailers, with observed differences for individual contracts regularly in the range of A\$10–25/MWh.
- In Great Britain, independent entry increased in the 2010s following Secure and Promote licence conditions, but asset-light supplier failures highlighted the risks of weak capitalisation and inadequate hedging. Between June 2018 and June 2019, nine Supplier of Last Resort events transferred c.845,000 customers; Ofgem identified poor hedging as a contributing factor.
- Western Australia separated Synergy and Verve in 2006 but re-merged generation and retail in 2014 after poor risk allocation, coordination inefficiencies, limited scale and financial sustainability concerns.
- The Nordic crisis evidence noted vertically integrated retailers may have internal hedging advantages when financial liquidity and area/system price correlation deteriorate.



New Zealand examples

- 2009 Ministerial review assessed mandatory generation-retail separation as “not likely to have net benefits”, because it would increase transaction costs, riskiness and cost of capital. Targeted interventions were favoured instead.
- 2019 EPR warned forced separation could be disruptive, undermine investor confidence and stall or delay low-carbon investment.
- 2025 LPF found legal separation could raise transaction and financing costs, disrupt investment and require substantial legal, operational and systems changes.
- Stakeholder submissions have been divided on the topic. Independent participants focused on access and credit terms, while gentailers and industry groups argued integration improves creditworthiness, risk management, investment and price smoothing.
- The failure of On Energy in 2001 demonstrated the vulnerabilities of an independent retailer with limited generation assets and hedge cover.

7.7 Affordability: Pricing in times of shocks

Whether separation makes retail prices more cost-reflective, and whether that improves affordability or increases customer exposure to wholesale shocks.



Key findings and evidence

Potential benefits: More arm's-length procurement may increase cost-reflectivity, reveal efficient wholesale signals and reduce opaque cross-subsidies.

Potential cost / risk: Removing the natural hedge can increase retail exposure to wholesale shocks, collateral calls and direct pass-through of fuel, scarcity or dry-year prices.

Key evidence: Evidence supports a risk that separation or asset-light retailing can increase retail price exposure to wholesale shocks.

- The consumer-price effect is contested: greater cost-reflectivity may reduce margins in some periods but can also increase volatility and exposure to fuel/scarcity shocks.
- Evidence shows the risk to unhedged and generation-light retailers during periods of wholesale volatility.



International examples

- Texas provides conflicting evidence on separation. Hartley, Medlock and Jankovska found post-price-to-beat residential prices converged with wholesale costs plus a competitive margin but retail volatility in competitive areas averaged more than twice that in non-competitive areas over 2002–16. This indicated retail competition produced positive price effects for consumers.
- Zarnikau et al. reached a contrasting conclusion in Texas that retail competition increased residential prices during 2001–06 and 2007–20, with the gap largest when gas prices were high.
- Evidence from Great Britain does not establish that accounting separation, non-discrimination or ownership separation caused closer pass-through during the European energy crisis; CMA identified asymmetric adjustment, with prices rising faster than they fell.
- Nordic post-crisis evidence highlights basis-risk, hedge premium increases and liquidity deterioration, increasing pressure on independent retailers relying on external financial hedges. Integrated gentailers were less exposed due to the presence of their internal hedge.



New Zealand examples

- Gibbard, Grubb and Wesselbaum used monthly panel data for 340 residential plans from January 2018 to May 2023. They concluded that independent retailers passed through more futures-based generation-cost changes than integrated retailers, with natural hedging identified as a possible explanation.
- 2021 ITP consultation found reported internal prices were plausible against ASX/customer-load/location benchmarks. However, methodologies and non-price terms were insufficient for external comparison.
- 2026 NDO found no definitive evidence of margin squeeze from 2018 to 2023 and removed the previous ITP/RGM regime after it proved of limited usefulness.
- 2025 Frontier reported independent retailers generally earned higher retail gross margins than gentailers but acknowledged data gaps and did not establish acceptability of hedge prices or terms.

7.8

Affordability: Distributed energy resources, demand response and customer flexibility

Whether separation is needed to support home solar, batteries, EV load, demand response, aggregation and customer flexibility, or whether data and market-access reforms are more direct enablers.



Key findings and evidence

Potential benefits: Separation could increase independent-retailer incentives to develop customer propositions, aggregation and load-shifting services.

Potential cost / risk: Innovation incentives are not exclusive to separated retailers; poorly designed separation could disrupt customer propositions that combine retail, generation, finance and flexibility.

Key findings: The evidence does not establish that separation is required to enable distributed energy resources, demand response or customer flexibility.

- The more direct levers are data access, metering, product design, standardised flexibility markets, aggregation rules and consumer protections.
- This remains an evidence gap: evidence identifies relevant enablers but does not quantify the effect of separation.



International examples

- European regulatory evidence identifies smart meters, interoperable data, dynamic contracts, aggregators, automation and consumer protections as principal flexibility enablers.
- Texas and Great Britain show independent retailers can develop differentiated propositions, but does not isolate separation as the cause of distributed energy resources or flexibility innovation.



New Zealand examples

- 2019 EPR identified distributed energy services and demand-side flexibility, including solar, batteries, EVs, automated appliance control and peak-demand response, as increasingly important to the electricity system, recommending pricing, network-access and regulatory reforms to support their development.
- 2023 MDAG identified weak demand-side participation, limited price discovery for non-baseload products, absence of standardised flexibility contracts, and need for forecasting, stress testing and distribution-level coordination in the New Zealand market.
- 2025 Frontier found demand response can reduce generation requirements and had already materially supported dry-year security, with Tiwai response saving around 330 GWh in winter 2024. It also identified rooftop solar, batteries, EV charging and virtual power plants as emerging sources of distributed flexibility, while noting fragmented distribution arrangements could constrain their scale-up.

7.9

Security: Investment in firming and resilience assets

Whether separation improves or weakens investment in flexible generation, storage, fuel security, demand response and dry-year resilience.



Key findings and evidence

Potential benefits: Separation could support independent investment if it improves access to customers, offtake and firming products on arm's-length terms.

Potential cost / risk: Separation does not create physical firming capacity and may weaken investment confidence, credit support and coordinated portfolio decisions.

Key findings: Security-of-supply evidence is principally focused on physical firming, fuel availability and investment signals, not generation-retail ownership itself.

- Targeted capacity, reliability, firming-product and access mechanisms are more directly linked to the problem identified by reviews.
- We identified no clear evidence in the reviewed jurisdictions that higher forms of separation (accounting, functional or legal) increases firming capacity or dry-year resilience.



International examples

- Great Britain relies on targeted mechanisms such as capacity auctions and Contracts for Difference rather than generation-retail ownership separation to support adequacy and low-carbon investment.
- Texas added reliability mechanisms and targeted financing after Winter Storm Uri; these reforms addressed fuel, reliability and market-design issues rather than generation-retail separation alone.
- Singapore and France use vesting or regulated access arrangements (requiring incumbents to sell a specific quantity of output to retailers at a fixed price) to manage market power around strategic generation while retaining ownership structures.
- Western Australia's re-merger followed concerns about separate fuel, hedging, procurement and investment decisions in a small isolated system.



New Zealand examples

- 2023 MDAG identified a prospective risk that competition in longer-duration flexibility could weaken as thermal generation retired. It recommended standardised flexibility products, stress testing, market making and virtual disaggregation as a backstop.
- 2025 Frontier diagnosed insufficient investment in long-duration firm capacity as the main problem, driven by policy uncertainty, fuel availability and weak incentives for rarely used assets, rather than gentailer ownership or conduct.
- 2026 NDO recognised separation can affect incentives, access and contracting, but cannot create water inflows, gas availability, demand response, storage or firm generation.
- MBIE's proposed winter-reliability obligations would place obligations on current gentailers to take direct financial and operational responsibility for winter electricity shortages, helping to manage dry-year risk. Under separation, responsible entities and contracting arrangements would need to be redesigned.

7.10

Security: Availability of firming and shaped products

Whether independent retailers and generators can access peak, super-peak, dry-year, firming and shaped products needed to compete and finance investment.



Key findings and evidence

Potential benefits: Separation could force more firming and shaped risk to be traded externally and reduce concerns about preferential internal access.

Potential cost / risk: If product scarcity reflects limited physical firming, separation may only reallocate scarcity while increasing transaction, collateral and pricing complexity.

Key findings: Evidence more directly supports targeted product-access regimes, standardisation, transparency and market-making.

- These measures address how existing capacity is packaged and allocated. They do not by themselves create new physical firming capacity.
- The reviewed evidence does not indicate that more intrusive forms of separation are required to create shaped or firming products, or that it alone improves these markets.



International examples

- In Ireland, directed contracts (CFDs) and ESB ring-fencing provided hedge access to incumbent output while retaining integrated ownership and functional/accounting separation safeguards. These directed contracts were offered to independent retailers on regulator-determined terms.
- The ARENH legislation in France required EDF to sell up to 100 TWh of historic nuclear output each year at €42/MWh, supporting alternative suppliers without separating EDF generation and retail.
- Implementation of PPAs in Alberta from 2001 allocated incumbent generation output to auction buyers for around 20 years, creating contractual rather than ownership separation.
- In Singapore, vesting contracts limited generators' exposure to spot prices and reduced withholding incentives; EMA later adapted the regime rather than replacing it with ownership separation.



New Zealand examples

- 2025 LPF found super-peak requests attracted fewer offers than baseload and peak requests, and around half received at least one offer matching all requested terms. The EA could not determine whether premiums reflected scarcity or non-competitive pricing.
- 2023 MDAG recommended standardised flexibility products, OTC process disclosure, dashboards and market-making before virtual disaggregation.
- The 2026 super-peak decision implemented a standardised product that is traded fortnightly from January 2025. Contracts with at least 6 MW offered rose from c.10% to 85%.
- In 2025, EA estimated extending baseload market-making by two years would cost c.\$2.5m p.a., against a futures market worth c.\$16b that year. Super-peak market-making was separately estimated in 2026 at around half the cost of existing baseload market-making. EA plans to review the super-peak settings after 12 months and wider market-making settings in mid-2028.

7.11

Sustainability: Regulatory uncertainty and transition risk

Whether a separation review or transition could delay renewable energy or decarbonisation investment by creating uncertainty over asset ownership, contracts, market rules and future counterparty arrangements.



Key findings and evidence

Potential benefits: A structural review could reset market rules, strengthen confidence in competition and address persistent unresolved concerns if targeted measures fail.

Potential cost / risk: The review and implementation period can create uncertainty over asset ownership, hedges, PPAs, retail load, capital structures and regulatory obligations.

Key findings: The evidence is mainly prospective, but from the reviewed jurisdictions regulators and reviews consistently treat uncertainty and the potential impact of less investment in low-carbon/renewable assets and transition risk as relevant costs of separation.

- Clear evidence either way is limited, with links between separation and improved sustainability outcomes weak, where present.
- In the jurisdictions reviewed sustainability measures have more commonly been addressed through targeted measures.



International examples

- In Great Britain, Ofgem's 2014 CMA referral noted uncertainty from the investigation and potentially substantial remedies could deter investment or increase capacity-auction bids; it also concluded the referral would not unduly risk security of supply given existing uncertainty and the value of an independent investigation.
- Project Hercule in France did not proceed and was replaced by full state ownership of EDF. The proposal stalled over nuclear pricing, public funding, tariffs, hydro concessions and EU competition issues.
- Separation of the incumbent in Western Australia was reversed after financial and coordination problems, illustrating the importance of detailed planning and consideration of transition contracts, risk allocation and the best approach with small system scale.



New Zealand examples

- 2019 EPR warned forced separation could be disruptive, undermine investor confidence and stall or delay investment needed for a low-carbon economy.
- 2025 LPF assessed legal separation as potentially more effective for arm's-length dealing but costly, disruptive, likely requiring primary legislation and a starting hedge position.
- 2026 NDO found that "more significant interventions" including corporate separation could not be justified on the current evidence, choosing NDOs as the proportionate response while reserving consideration of "significant escalation or broader reform" until a 2027 effectiveness review.

7.12

Sustainability: Renewable investment, portfolio transition and PPAs

Whether separation accelerates renewable investment or affects project bankability through offtake, PPAs, firming, shaping and counterparty credit.



Key findings and evidence

Potential benefits: Separation could increase arm's-length offtake opportunities and reduce concerns that gentailers favour their own renewable projects.

Potential cost / risk: Separation may reduce creditworthy offtakers, weaken integrated portfolio support and require more external firming, shaping and long-tenor contracts.

Key findings: Bankability depends more directly on policy stability, transmission access, contract tenor, creditworthy offtake and firming/shaping arrangements than separation itself.

- Evidence identifies a real offtake/PPA access issue for independent renewable development but does not show that generation-retail separation itself accelerates available strong-credit PPAs for developers or renewable build.
- Texas shows separation can coexist with renewable investment but does not establish that separation has a causal impact on investment. In particular, separation reform in Texas was accompanied by other measures to improve hedge market liquidity and later measures to stimulate renewable development.



International examples

- Texas added substantial wind, solar and battery capacity after separation, including c.14 GW in 2024, largely solar and storage; this occurred more than 20 years after separation and alongside renewable incentives, major transmission investment and later reliability reforms (particularly the reliability mechanisms and targeted financing post Winter Storm Uri).
- Octopus entered the Great Britain market as an asset-light retailer, growing to c.25% market share, and subsequently developed generation exposure, illustrating that integration can re-emerge as retailers scale.



New Zealand examples

- 2021 Wholesale Market Review noted vertical integration could support risk management, reduce transaction costs and lower financing costs, but could also reduce forward liquidity and demand for PPAs from independent generators.
- 2025 Frontier found a strong pipeline of renewable and battery projects from both gentailers and independent developers and did not consider structural change necessary to support general generation investment.
- 2025 Frontier also identified vertical-integration benefits including natural hedging, lower transaction costs, coordinated investment and stronger credit support.
- IEGA stakeholder evidence stated that access to long-term offtake is critical for independent project finance and that gentailers had not been counterparties to independent generator-retailer PPAs in its May 2019 to September 2024 analysis.

Appendices

Appendix 1

New Zealand evidence – additional



Shortlisted wholesale market reviews and key regulatory decisions

A1.1

2009 ComCom investigation and 2009 Ministerial review

The Commerce Commission investigation and Ministerial review laid the foundations of the current regime: confirming wholesale market power and choosing targeted reforms over generation-retail separation.

The making of the current regulatory regime

The ComCom investigation and Ministerial Review made 2009 the foundational year for New Zealand's current electricity regulatory regime.

The Ministerial review provided the basis for the Electricity Industry Act 2010. The Act replaced the Electricity Commission with the EA, which had narrower objectives and functions, and provided for the EA to make and administer market rules through the Electricity Industry Participation Code. This created a statutory framework set by Parliament and a regulatory framework administered by the EA. Together, the investigation, review and legislation established the competition diagnosis, institutional framework and targeted-intervention model against which later reviews can be compared.³⁷

Later reviews may examine either or both parts of that framework. Legislative reviews consider the EA's statutory purpose, powers, functions and institutional settings. Regulatory reviews consider market performance and the rules made under the Code, including competition, reliability and efficiency. Changes to the EA's statutory purpose or powers require legislative action, while Code amendments are generally made by the EA under the Act. The EA must also have regard to statements of government policy issued under the Act.

The Commission found the gentailers held market power but found no anti-competitive purpose

The Commission considered that the gentailers likely held substantial wholesale market power, particularly when hydro storage was low or expected to become low. However, it found no evidence that the gentailers took advantage of this market power (ie anti-competitive purpose) or breach of the Commerce Act in the wholesale or retail market. The Commission deferred to the Ministerial review on consideration of vertical integration.

Professor Frank Wolak of Stanford University, advising the Commission, estimated \$4.3 billion of wholesale market-power rents over a six-and-a-half year period, equivalent to around 18% of generation revenue.⁴

The magnitude of Wolak's estimate was subsequently contested. The 2009 Ministerial Review expressed reservations about the calculation and did not adopt the \$4.3 billion figure as a basis for reform.²⁰ Later independent reviews identified methodological concerns, and Treasury advised Ministers that the estimate was "not credible" and should not be relied upon for regulatory action. Wolak remained influential in framing the debate, but his estimate was not ultimately accepted as evidence by government.⁴¹

Evidence and competing arguments for and against separation

The Ministerial review tested generation-retail separation as one possible response to those competition concerns. Vector, Carter Holt Harvey, Norske Skog, Fonterra and Unison supported separation, while other submitters proposed mandatory hedge offers, compulsory futures trading and virtual power-plant contracts.

The reviewers did not progress mandatory separation because they expected it to increase transaction costs, make standalone generators and retailers riskier and raise their cost of capital. They instead favoured interventions directed at regional concentration, hedge access and risk-management incentives.

The resulting policy judgment was that market power could be material without generation-retail ownership being its principal cause. Separating generation from retail would not necessarily alter the hydrological, regional, transmission and contracting conditions that allowed market power to emerge.

A1.1 2009 ComCom investigation and 2009 Ministerial review (continued)

The Commerce Commission investigation and Ministerial review laid the foundations of the current regime: confirming wholesale market power and choosing targeted reforms over generation-retail separation.

Other market issues identified

The Ministerial review placed the main problems in regional portfolio imbalance, hedge access and dry-year incentives. Retailers without generation in the relevant region faced congestion and scarcity exposure, particularly in the South Island, while thin hedge markets limited entry and weakened risk management.

It also found that stressed conditions could reward poor hedging and fuel management. The review therefore focused on transmission hedges, deeper contract markets, scarcity pricing and demand response – problems that separation would not solve on its own.

What the Government implemented

The Government translated the review into a broad reform package, with most legislative changes enacted through the Electricity Industry Act 2010.³⁷ The package aimed to strengthen competition, improve security of supply and streamline governance:

- Transferred Tekapo A and B from Meridian to Genesis and Whirinaki to Meridian (Whirinaki ultimately sold to Contact).
- Required 15-year virtual asset swaps between the three state-owned generators to strengthen cross-island competition.
- Required major generators to support an accessible hedge market.
- Introduced customer-compensation arrangements for conservation campaigns and dry-year cuts.

The package combined structural and market-design interventions, but they did not settle the underlying market-design issues. The 2025–26 reviews and decisions again targeted hedge liquidity, shaped-product access, fair treatment of independent participants and firming risk through standardised super-peak products, stronger market making and non-discrimination obligations. The 2009 reforms therefore established the targeted-intervention model, but many of its tools required further refinement rather than providing a permanent fix.



A1.2 2019 EPR

The price review recommended mandatory market making and separate profitability disclosure to improve hedge market liquidity and transparency.

Background and mandate

This review was prepared to assess the performance of New Zealand's entire electricity sector and recommend reforms to make electricity more affordable and fairly priced, strengthen competition and consumer protection, reduce energy hardship, and prepare the system for a low-carbon future.

Gentailer structure and wholesale competition

The wholesale contract market was the review's main gentailer-related concern. Although the spot and contract markets supported investment, reliable supply and falling emissions, voluntary market making by the four largest gentailers became fragile under stress, with bid-offer spreads sometimes exceeding 50%.¹⁹ This weakened access to the contracts that standalone retailers and generators needed to manage price risk and compete *without entering both markets*.

The review also recorded concerns that gentailers might favour their retail arms, but lacked the information needed to test them, particularly on internal transfer prices. It found no evidence of excessive profits, although data limitations prevented a definitive conclusion. Some submitters proposed operational separation, requiring generation and retail arms to trade at arm's length, while regulated segmental reporting would improve transparency.

The Panel did not favour immediate operational separation and opposed forced ownership separation.¹⁹ It concluded that vertical integration's benefits outweighed its costs and warned that a forced split could disrupt investment needed for the low-carbon transition.

It instead favoured stronger contract-market liquidity and transparency, with operational separation reserved as a backstop if targeted reforms failed.

The review treated separation and wider market problems separately

The Panel distinguished several related problems rather than attributing weak competition solely to vertical integration. It found that voluntary market making did not provide dependable liquidity during stressed conditions. Existing gentailer reporting also gave limited visibility over the performance of retail and generation units or wholesale activities, including internal transfer pricing. Separately, retail practices such as difficult price comparisons, poor access to consumption data, and saves and win-backs created consumer and competition concerns. These findings led the Panel to target contract-market liquidity, financial transparency and retail conduct rather than recommend immediate structural intervention.

Customer inertia and the two-tier market

The review found that consumers who shopped around could obtain materially better offers, while many who didn't paid more and found it difficult to compare plans or switch. It estimated that 23%–42% of consumers had not changed retailer since switching records began in 2002, with vulnerable and lower-income households over-represented among non-switchers.

Saves and win-backs reinforced a two-tier market by allowing retailers to make targeted counter-offers once customers attempted to leave and by raising rivals' customer-acquisition costs. The review nevertheless accepted that not every non-switcher was disengaged or being exploited: some might value non-price factors such as bundled offers or sustainability.

What was implemented

The EA introduced a mandatory market making backstop, with regulated and commercial market makers operating under new requirements from September 2022.¹⁶

It also required disclosure of gentailers' internal transfer prices and retailer gross margins and began comparing contract prices with new-generation costs.⁸

The EA prohibited targeted saves and win-backs for 180 days after a switch,⁶ consolidated comparison services into Powerswitch and trialled support for non-switchers. Work on access to consumption data remained incomplete. The Government did not impose operational or legal separation, and the proposed three-year review had not occurred by the 2023 implementation assessment.

A1.3

2021 Wholesale market review and 2021 ITP consultation

The 2021 reviews found possible competition concerns but no conclusive abuse, adopting transfer-price disclosure and enhanced oversight.

Background

Two linked EA workstreams followed the 2019 EPR. The October 2021 Wholesale market review examined whether spot prices between January 2019 and June 2021 had been determined in a competitive environment following the Pohokura gas outage. The April 2021 ITP consultation addressed the EPR's recommendation for greater visibility over gentailers' internal transfer prices and retail profitability.

The workstreams had different scopes. The wholesale review examined spot prices, generation concentration, offer behaviour, entry and investment. It did not assess retail competition or establish whether gentailers had imposed a margin squeeze. The 2021 ITP consultation examined whether external parties had enough information to understand internal pricing and compare retail margins. It did not assess the efficiency of wholesale spot or hedge prices.

Gentailer structure and wholesale competition

Market fundamentals explained part of the price increase, including gas disruption, low hydro inflows and higher fuel and carbon costs. The EA also found an upward price shift that its analysis did not fully explain.⁵ Meridian was gross pivotal in the South Island for around 90%–95% of the period, supply curves had steepened and some conduct was consistent with economic withholding. However, the indicators were mixed and the review did not find definitive evidence that generators had operated outside the Code.

Vertical integration formed part of the assessment of entry and investment. The EA noted that it could support risk management, reduce transaction costs and lower financing costs, but could also reduce forward liquidity and demand for PPAs from independent generators. Most committed projects were gentailer-owned, although independent projects and new PPA arrangements were emerging. The review attributed its Tiwai concerns to Meridian's generation scale and South Island concentration, rather than vertical integration itself.

Internal pricing concerns were not supported, but disclosure remained weak

The EA's analysis did not support claims that gentailers' ITPs were too low or stable. It found that reported prices were plausible against benchmarks based on historical ASX futures, customer loads and location. However, voluntary disclosures did not explain methodologies, components or non-price terms well enough to support external comparison. Internal retail arms also commonly received fixed-price, variable-volume supply, although the EA did not treat differences from external contracts as evidence of discrimination.

The reviews treated separation and wider market problems separately

The wholesale review considered vertical integration as one possible barrier to entry through its effects on forward liquidity and PPA demand. It also identified gas availability, hydrology, consenting, grid connections and policy uncertainty. The 2021 ITP consultation treated internal prices mainly as accounting measures and considered wholesale offers, hedge prices and retail revenues more direct indicators of conduct affecting third parties. Neither review recommended generation-retail separation.

What was implemented

The EA required large gentailers to disclose annual ITPs, methodologies, key components and non-price terms.⁸ It also introduced standardised electricity retail gross-margin reporting, centralised publication, benchmark comparisons and review powers.

It did not prescribe a common ITP, require external sales at internal prices, or impose accounting, functional, corporate or ownership separation.

The wholesale review informed later work on trading conduct, price discrimination and investment conditions.

A1.4 2023 MDAG

The 2023 MDAG focused on market competition for flexibility products rather than generation-retail separation, recommending stronger risk management tools and market making.

Background

The EA commissioned the Market Development Advisory Group (MDAG) to undertake a review of how New Zealand's wholesale market should adapt to rising electricity demand, greater renewable generation and declining thermal generation. It aimed to preserve reliable supply at the lowest long-term cost through accurate prices, effective risk-management tools and sufficient competition. MDAG expected greater weather-driven volatility, heavier reliance on hydro and other flexible resources, and growing demand for shaped contracts, storage and demand response.

The review concluded by making 31 recommendations focusing on a three-stage integrated market-development programme,³⁰ rather than strictly focusing on gentailer structure.

Gentailer structure and competition in flexible generation

MDAG did not recommend separating gentailer generation and retail businesses.³⁰ It framed the structural question more narrowly: whether participants could obtain longer-duration flexibility products on reasonable terms as the physical sources of those products became more concentrated. It also did not recommend further physical hydro disaggregation, noting that "splitting assets on the same river chain would not address the root issue" [Paragraph D.51], because the underlying source of market power was control of storage on that river chain.

The review also identified wider market-design issues that ownership separation would not resolve. These included limitations on price discovery for non-baseload products, the absence of standardised flexibility contracts, weak demand-side participation, uncertainty around thermal retirement and investment, and the need for better forecasting, stress testing and distribution-level coordination.

MDAG proposed a three-stage response

MDAG recommended conduct and market-development measures first. This included:

- Greater hedge-market transparency, standardised flexibility contracts, disclosure of over-the-counter contracting processes and a dashboard tracking the availability, pricing and accessibility of flexibility products.
- Mandatory market making, which would follow only if these measures did not produce effective competition.

It also suggested the EA define a specific form of virtual disaggregation as a regulatory escalatory mechanism, should the above measures prove ineffective. Under this approach, part of a gentailer's flexible supply capability would have to be offered through a defined process and approved terms, while the balance would remain available for its own use. Ownership and operational control would remain with the gentailer.

What MDAG recommended

MDAG formally recommended that the EA prepare a high-level virtual-disaggregation design in advance but only as an escalatory mechanism that would be implemented if earlier measures proved inadequate.

The final package focused on stronger price discovery, improved risk-management products, demand-side flexibility and active competition monitoring. It retained virtual disaggregation as a conditional intervention targeted at undue market power in flexible supply, rather than proposing ownership separation.

What was implemented

The EA strengthened hedge-disclosure rules, renewed the stress-testing regime, introduced reporting on over-the-counter bids and offers, launched a standardised super-peak hedge product and published a dashboard monitoring competition in flexibility products.

Mandatory market making for super-peak contracts followed in July 2026, addressing MDAG's primary recommendation.

The EA also published the proposed high-level design for virtual disaggregation through its 2025 LPF work, but later abandoned the formal escalation mechanism in its 2026 NDO decision. It will review the 2026 regulatory package in late 2027.

A1.5 2025 Frontier

Frontier concluded that the problem is insufficient investment in firm capacity caused by policy uncertainty, fuel availability and weak commercial incentives, recommending Crown-backed capacity over separation of the gentailers.

Background and mandate

Frontier Economics' review was prepared for Ministers and MBIE to assess whether New Zealand's electricity-market ownership, structure, regulation and risk-management arrangements could deliver secure and reliable electricity at the lowest cost amid rising demand, decarbonisation and dry-year risk, and to recommend reforms addressing investment, competition, affordability and system resilience.

Findings relevant to gentailer structure

Frontier diagnosed insufficient investment in long-duration firm capacity as the main market problem, rather than gentailer ownership or conduct.²¹ It attributed the shortfall principally to government policy uncertainty (which markets were unable to manage), declining fuel availability and weak commercial incentives to build assets that may operate infrequently but are essential during dry years.

It viewed increased market power during tight conditions as a symptom of capacity and energy scarcity, not a cause. The strong pipeline of renewable and battery projects from both gentailers and independents was seen as evidence that structural changes were not necessary to support general generation investment.

Frontier considered the market capable of supporting effective competition. It found that wholesale concentration was generally below the thresholds it applied, independent firms had entered generation and

retail markets, and household and commercial electricity costs had declined in real terms. It also reported that independent retailers generally earned higher retail gross margins than gentailers.

Its analysis of confidential contract data found that gentailers supplied hedges to competitors, major independent retailers could cover their demand on an energy basis, and gentailer portfolios were broadly contracted or neutral. Important data gaps were acknowledged and Frontier did not establish that independent retailers considered hedge prices or terms acceptable. It also could not conclusively separate the effects of scarcity from possible gentailer market power during dry years.

Frontier accepted that vertical integration could advantage gentailers where independent firms could not obtain comparable firming and risk-management efficiencies. However, it also identified benefits from integration, including natural hedging, lower transaction costs, coordinated investment and stronger credit support. It framed the policy challenge as extending similar opportunities to independent participants without removing those efficiencies from gentailers.

Frontier opposed separation-like measures

Frontier opposed the Energy Competition Task Force's proposed non-discrimination obligations and virtual disaggregation because it considered that neither would increase the physical supply of firm capacity.²¹

It argued that non-discrimination rules could cause gentailers to raise internal transfer prices rather than lower external hedge prices. It also argued that virtual disaggregation could increase risk-management and transaction costs, reduce contracting flexibility and weaken investment incentives. Frontier described the proposal as a virtual break-up because it would require gentailers to auction part of their flexible capability while leaving ownership and dispatch unchanged.

Frontier separately identified customer-data access and inconsistent bill formats as barriers to retail competition.

What Frontier recommended

Frontier recommended establishing a Crown-backed entity to secure fuel and long-duration dispatchable capacity and sell firming products into the market.²¹ It proposed priority access for independent retailers, generators and large users.

It also recommended selling the Crown's shareholdings in the gentailers and using the proceeds to fund firm capacity, fuel security and reliability initiatives. Frontier recommended that the Energy Competition Task Force's non-discrimination and virtual-disaggregation proposals not proceed. It also proposed improved customer-data access, more consistent electricity bills and annual EA reporting on hedge-market trends.

Only the customer and billing data and hedge reporting recommendations were implemented.

A1.6 2025 LPF

EA's 2025 Level Playing Field paper moved toward non-discrimination obligations on the basis of competition risk rather than established anti-competitive conduct.

Background

The 2025 LPF provides a contemporary anchor for New Zealand's separation debate. It was initiated out of the 2019 market pricing review and brings together the EA's risk-management review, its review of internal-transfer-price disclosures and the 2023 MDAG work.

The paper directly compares conduct, access and separation remedies. It was not a final decision but it did establish the problem definition, options and proposed escalation pathway that informed the subsequent regulatory process.

Hedge liquidity and competition risks identified

The EA's analysis of OTC buy requests made by non-integrated retailers with more than 1,000 customer connections between Q4 2022 and Q2 2024 identified the strongest concerns in shaped hedges.¹² In that dataset, almost all requests received at least one offer, but more than one-third of shaped-hedge requests received only one offer, indicating hedge liquidity challenges.

Super-peak requests attracted fewer offers than baseload and peak requests, and around half received at least one offer matching all the requested terms. The EA could not determine whether super-peak premiums reflected scarcity or non-competitive pricing.

Existing internal-transfer-price disclosures also failed to provide a useful comparison between internal and external dealings.

This evidence supported a prospective competition risk and information gap, but did not establish discrimination, margin squeeze or other anti-competitive conduct.¹² It therefore supported consideration of a proportionate response rather than establishing a case for legal separation.

Paragraph 4.8 of the LPF stated that stronger accounting separation could improve transparency via information disclosures. Paragraph 4.27 considered legal separation's performance in relation to arm's-length dealing and independent access to hedges, firming and PPAs. However, the EA found that more intrusive forms of separation could also raise transaction and financing costs, disrupt investment and require substantial legal, operational and systems changes.

Other market issues identified

The paper placed vertical integration within a wider set of market-performance issues and identified that:

- Limited firming availability can restrict the total volume of hedges available, irrespective of how they are allocated.
- Thin shaped and longer-dated markets may reflect limited product standardisation, nascent demand response and storage capability, prudential requirements and the difficulty of pricing dry-year and hydrological risk.

The EA also identified rising demand, future gas uncertainty, low hydro inflows, increasing intermittent generation and investment delays as pressures on retail prices, resilience and entry.

These issues matter as separation or non-discrimination rules may improve access to existing products, but cannot by themselves deepen the market, create firm capacity or protect under-hedged retailers during shocks.

Options and preferred response

The paper assessed four potential options:

- Non-discrimination obligations
- Accounting separation
- Negotiate-arbitrate arrangements
- Legal separation.

It concluded that principles-based non-discrimination obligations offered the most proportionate and rapidly implementable response compared to the other options, while more prescriptive access rules could follow if required.¹²

It initially treated more intrusive forms of separation as an escalatory backstop, characterising them as potentially more effective against discrimination and cross-subsidy, but costly, disruptive and likely to require primary legislation. It eventually abandoned a formal escalatory mechanism in favour of ongoing reviews.

A1.6 2025 LPF (continued)

The 2026 NDO decision implemented the LPF's preferred proportionate response for gentailers, while leaving stronger structural measures for consideration in the 2027 review.

Background to NDO decision

The May 2026 NDO decision implemented the EA's preferred response from the 2025 LPF work.

Following consultation, the final NDO regime came into effect on 1 July 2026. It requires the gentailers to supply risk management contracts on a non-discriminatory basis.

Evidence for and against separation

In finalising the NDOs, the EA retained the LPF's narrower competition problem, that vertical integration, combined with concentrated control of flexible generation, may give gentailers the ability and incentive to favour their own retail businesses.

The EA found no conclusive evidence that gentailers had actually exercised this, but the risk remained.¹⁸ It considered it less likely than previously indicated that super-peak prices contained a premium above competitive levels and found no definitive evidence of a margin squeeze between 2018 and 2023.¹⁸

Evidence on retailer exits, market shares, switching and retail margins could be consistent with anti-competitive conduct, but could also reflect competition for scarce firming and hedge products.

The decision recognised that vertical integration creates efficiencies in resources, systems and risk management, but maintained that it can contribute to competition risks in hedge markets when combined with control of flexible generation.

The EA adopted non-discrimination obligations (NDOs) and RPCA transparency measures as the low-cost and targeted response.

The EA did not recommend accounting and corporate separation as these were high-cost and not justified by the problem definition:

"We are not persuaded that more significant interventions can be justified on the basis of the evidence of the problem definition:

- *Corporate separation would represent a significant shift in operating model and would likely require primary legislation. It also represents the most expensive option, requiring structural change to gentailers' businesses. This would result in the loss of the existing efficiencies associated with vertical integration (e.g. resources, systems and risk management)...*
- *While accounting separation would improve transparency, we do not consider that the introduction of accounting separation would be justified at this time, given the potentially significant costs and difficulties involved. The incremental benefit of transparency beyond the RPCA would not justify this intervention" [Para. 5.35]*

Other market issues identified

The EA placed the competition concern within a broader conclusion of shortage of firming and risk-management products. Rising demand for hedging, fewer flexible resources and limited near-term expansion could explain high prices and difficulty accessing shaped products.

However, it distinguished fair access to firming-backed contracts from the underlying availability of firming capacity. NDOs may improve access to existing products, but they do not create new firm capacity or resolve investment constraints. Fuel scarcity, security of supply, prudential requirements, retail resilience and investment in long-duration firming were treated as related but separate issues, to be addressed through other regulatory and government workstreams.

What was implemented

NDOs represent behavioural conduct and enhanced regulatory oversight. They impose six obligations covering non-discriminatory supply and pricing, good-faith engagement, objective credit terms, equal access to commercial information, protection of buyer-confidential information and record-keeping.

Gentailers must also publish bi-annual RPCAs, maintain board-reviewed non-discrimination policies, undergo annual external audits and support active EA monitoring.

The EA removed the previous internal-transfer-price reporting obligations because it had not produced useful information.

The EA concluded that these measures offered a proportionate response to a credible but unproven competition risk. It also abandoned a formal escalatory mechanism towards virtual disaggregation, favouring a review of the performance of the wider hedge-market package in late 2027.

A1.7 Other 2026 market-making reforms

The EA paired mandatory market-making with trading transparency to support a viable super-peak hedge market.

Background

In 2026, the EA implemented two complementary reforms for the standardised super-peak hedge market – the Market-making review (2026 Market-making review) and the Standardised super-peak hedge contract (2026 Super-peak decision). It required electronic trading platforms to report detailed trading data and required designated market makers to quote super-peak contracts.^{15,16} These were final regulatory decisions with specified commencement dates, not recommendations for future action.

The reforms moved the super-peak product from industry co-design and voluntary arrangements into a regulated market framework. This matters because independent retailers and generators rely more heavily on external shaped hedges than vertically integrated gentailers. More dependable contract availability and observable prices can reduce this competitive disadvantage without separating generation and retail businesses.

Why this matters for the separation debate

As previously noted, vertically integrated firms can manage some peak and shaping risk internally, while independent retailers and generators must rely on external hedge markets. The EA's reforms target this asymmetry of access through standardised products, market-making and greater trading transparency over recommending more intrusive forms of separation.

These measures aim to make external hedging a more effective substitute for integration, but they cannot fully replicate a natural hedge or create additional firming capacity. Their effectiveness therefore depends on whether they deliver reliable access and pricing, particularly during stressed market conditions.

Evidence for intervention

The EA considered reliable super-peak liquidity and pricing important for retail competition, flexible generation, storage and investment. It concluded that voluntary trading and reporting could not guarantee dependable prices or contract availability, particularly during market stress.

Submitters broadly supported stronger price discovery and more consistent trading information. Some warned that market makers could pass compliance costs through to consumers and that liquidity could still weaken during scarcity.

Costs, residual issues and implementation

The EA estimated annual market-making costs of approximately \$2.5 million against a futures market worth about \$16 billion in 2025.¹⁶ It concluded that the expected benefits outweighed the costs.

The reporting requirement improves visibility but does not itself create liquidity. Mandatory market-making supplies the quoted volume. The EA may review super-peak market-making after one year and conduct a wider review in mid-2028.

What the EA implemented

- **Trading transparency:** From 1 May 2026, electronic platforms trading standardised super-peak contracts must provide the EA with records of all actions during each trading event by 9am the following day.¹⁵ This formalised previously voluntary reporting and strengthened monitoring of liquidity, pricing and participant conduct.
- **Mandatory super-peak market-making:** From 31 July 2026, designated market makers must quote super-peak contracts through an approved over-the-counter platform.¹⁶ The settings require 6 MW of total volume, a 5% spread, monthly contracts covering three quarters and quarterly contracts covering nine quarters, with morning and evening peak windows at Benmore and Otahuhu.
- **Longer-dated baseload market-making:** From 1 March 2027, market makers must quote ASX baseload contracts across five years rather than three. They must offer 12 MW across the front three years and 8 MW in years three to five.

New Zealand academic research

A1.8

Two schools of thought dominate academic discussion on gentailer structures

One school of thought in New Zealand academic research identifies persistent wholesale competition concerns, but does not establish a case for gentailer separation.

Wolak provided the foundational empirical diagnosis

Professor Frank Wolak's 2009 analysis for the Commerce Commission examined every half-hour trading period from 2001 to July 2007. His competitive-benchmark analysis attributed an estimated \$4.3 billion, or around 18% of wholesale revenues, to market-power rents, with substantially larger effects in some dry years.⁴² The Commission consequently concluded that the four largest generators periodically had both the ability and incentive to increase wholesale prices above competitive levels, although it found no associated breach of the Commerce Act.⁴

The 2009 Ministerial Review did not adopt Wolak's conclusion of sustained market power. The Electricity Technical Advisory Group recorded "serious reservations" about the calculation of the estimated rents and concluded that there was "no evidence of sustained or long term exercise of market power". Treasury subsequently went further, advising Ministers in 2012 that two independent peer reviews had identified significant methodological flaws, that the \$4.3 billion estimate was "not credible", and that Wolak's conclusions could not be relied upon as a basis for regulatory action.⁴²

Wolak therefore remains foundational in framing the New Zealand debate, but his headline estimate should be treated with substantial caution rather than as a settled empirical finding.

Wolak did not identify vertical integration itself as the cause

Importantly, Wolak's framework explicitly incorporated retailers' downstream positions. A generator's incentive to increase wholesale prices depended partly on how net long it was after accounting for its retail commitments. Wolak found, for example, that Meridian and Genesis materially reduced their incentives to raise wholesale prices after acquiring additional retail customers in 2001. His analysis therefore provides foundational evidence of wholesale competitive concerns, but does not establish that separating generation and retail would improve those outcomes.

Bertram sees the natural hedge as an entry advantage

Geoff Bertram argues that gentailers' ability to manage generation and retail positions internally gives them a structural advantage over independent retailers, which instead depend on access to external hedge products or remain exposed to wholesale volatility. In his interpretation, the issue is not simply that gentailers are vertically integrated, but that independents may be unable to replicate the same protections on comparable terms to that of the gentailers.

Bertram's critique extends beyond hedge availability. He argues that concentrated generation ownership, control over generation resources, and retail books broadly matched to generation portfolios can reinforce incumbent positions and make entry more difficult. On this view, gentailing forms part of a wider market structure that can constrain independent retail and generation competition, rather than providing an efficient way to manage risk.

Later evidence nevertheless keeps the wholesale market question alive

Stephen Poletti's subsequent modelling provides independent support for the broader concern about wholesale outcomes. For 2010–2016, Poletti estimated substantial market-power rents using a different methodology and more detailed treatment of hydro water values.⁴⁰

This suggests that the questions raised by Wolak did not disappear after the 2009 reforms. However, like Wolak, Poletti identifies outcomes in the wholesale market rather than establishing that vertical integration is their cause or that ownership separation would produce superior welfare outcomes.

A1.9

Two schools of thought dominate academic discussion on gentailer structures

Another school argues that vertical integration can improve risk management, investment and consumer outcomes, and that separation may remove efficiencies without resolving the underlying features of electricity markets.

Integration can moderate incentives in wholesale markets

New Zealand economists Richard Meade and Seamus Hogan challenge the proposition that separating generation and retail necessarily improves competition. Their model finds that stand-alone generators have stronger incentives to increase wholesale supply offers, whereas those incentives are reduced where an integrated firm has broadly balanced generation and retail positions.²⁵

Under their assumptions, retail prices are higher under vertical separation than under balanced integration.

Contracts may be an imperfect substitute for integration

Meade and O'Connor's work applies the theory of the firm directly to electricity markets. They argue that separating generation and retail does not remove the need to coordinate the two activities. It instead shifts that coordination into contracts.³²

This can be difficult where generators make long-lived, capital-intensive investments while retailers face uncertain and changing customer loads. Forward contracts can mitigate these problems, but may be an incomplete or costly substitute where contracts cannot fully anticipate future conditions or align the parties' investment incentives.

Integration can support investment and financing

A further strand of Meade's work is that integration can improve the conditions for investment in generation. Combining generation with a downstream customer base provides a degree of revenue certainty and reduces exposure to wholesale price volatility, potentially improving the financeability of long-lived and capital-intensive assets. Separation does not eliminate these risks; it requires them to be reallocated through contracts, counterparties and financial markets.

Meade's argument is therefore that the relevant comparison is between alternative ways of organising and allocating risk, rather than between integration and a frictionless contractual market.

Meade's later work draws these arguments together

Meade's 2021 literature review³⁴ identifies four principal benefits from integration:

- More effective management of wholesale price risk.
- Improved investment incentives and financing.
- Elimination of double marginalisation.
- Reduced incentives to exercise wholesale market power.

His conclusion is not that all firms should integrate, or that integration is free from strategic behaviour. He recognises potential concerns including foreclosure and raising rivals' costs, but argues that these need to be assessed alongside the efficiencies integration creates and the strategic responses available through forward and retail markets.

His broader conclusion is that the literature does not support a presumption that separation improves consumer welfare.

Other New Zealand evidence is consistent with parts of this mechanism

Gibbard, Grubb and Wesselbaum (2025) find that integrated retailers pass through materially less variation in generation costs than independent retailers, which they suggest may reflect wholesale prices being an opportunity cost for integrated retailers rather than a cash input cost.²²

This supports the proposition that integration changes risk exposure and pricing behaviour, although the study does not establish whether integration improves overall welfare.

Stakeholder views

A1.10 Stakeholder views^[1] – in support of separation

Independent retailers, generators and consumer groups argued the core problem is integration combined with flexible generation control, favouring functional or legal separation with ownership separation as a backstop.

Summary

The strongest support for separation-like measures came from independent retailers, some independent generators, consumer representatives and some large users.

These stakeholders argued that the issue is not vertical integration in the abstract, but vertical integration combined with control of flexible generation and retail market share.

Their common causal claim was that gentailers can use internal hedging, information advantages, credit terms, delays, product design or transfer prices to make independent retailing or independent generation less viable.



Note:

[1] Sourced from submissions to EA decision papers (listed in Appendix 5).

Independent retailer submissions

These favoured stronger separation than the EA's initial non-discrimination option proposed in its 2025 LPF, arguing that ownership separation would embed non-discrimination, create arm's-length dealings, promote entry and investment, increase hedge-market liquidity, allow equal retail-market terms and reduce information asymmetry.

The Independent Electricity Retailers (IER) group, comprising 2degrees, Electric Kiwi, Octopus and Pulse, strongly supported non-discrimination but argued for ownership separation as the preferred option, citing independent retailer share, retailer exits, alleged refusals or constructive refusals to supply hedges and alleged margin squeeze. Octopus Energy characterised ownership separation as the 'gold standard', while proposing a more pragmatic package of legal separation, auditable accounting, internal trading protocols, expanded market making and monitoring.

This shows preference for legal separation, supported by accounting separation, functional separation and enhanced regulatory oversight. Consumer NZ supported greater separation but distinguished abrupt ownership separation from functional reform. It argued that greater separation between generation and retail was essential for fairness and competition, but that sudden complete ownership separation could be disruptive. It supported targeted functional separation with ownership separation only as a backstop.

Independent generator submissions

These focused less on retail margins and more on access to long-term PPAs, sleeves, firming and risk-management products.

The Independent Electricity Generators Association (IEGA) stated that gentailers had not been counterparties to independent generator-retailer PPAs in its May 2019 to September 2024 analysis, and argued that offtake contracts were critical for project finance.

The IEGA / IER joint submission argued that revised NDO and Retail Price Consistency Assessments (RPCAs) were too modest and that access price, quantity, and terms remained critical, with ownership separation kept on the table as a backstop.

These arguments map independent generator support mainly to enhanced regulatory oversight and functional separation, with legal separation as an escalation path.

Other submissions

Some stakeholders supported virtual disaggregation or market-design remedies. For example, Vector argued that non-discrimination obligations would not address long-term flexibility market power if suppliers with flexible generation could still price at inflated levels. It supported more attention to virtual disaggregation, market making, open-interest transparency and, potentially, horizontal separation or virtual asset swaps. Large users and consumer-facing groups generally supported at least the EA's level-playing-field package, but not all endorsed ownership separation.

A1.11 Stakeholder views^[1] – opposing separation

Gentailers and expert reports argued the real problem is firming and fuel scarcity, not vertical integration, warning that separation would raise prices, chill investment and remove risk management benefits.

Summary

Gentailers, some industry associations and several expert reports argued that separation or strong virtual-disaggregation measures would misdiagnose the problem.

Their common claim was that scarcity of firming and fuel, not discriminatory vertical integration, explained high or volatile prices. They also argued that vertical integration reduces risk, supports investment, improves creditworthiness, allows retail price smoothing and helps consumers manage wholesale volatility.

Gentailers' submissions

Contact Energy recognised theoretical concerns but argued that the evidence did not show discriminatory practices or margin squeeze, and that a principles-based non-discrimination obligation was proportionate. It warned that prescriptive rules, mandatory trading and ownership separation would dampen competition, raise capital and investment risks, and impose costs disproportionate to the evidence.

Genesis, supported by a Sapere report, argued that the proposals misdiagnosed fuel and capacity scarcity as a vertical-integration problem.

Note:

[1] Sourced from submissions to EA decision papers (listed in Appendix 5).

They said competition among four gentailers constrained flexible-generation market power, while vertical integration helped manage risk, smooth prices and support investment; stronger intervention could weaken investment incentives and increase uncertainty.

Meridian commented directly on vertical separation in three reviews, arguing that level-playing-field measures risked higher prices, welfare losses, dampened investment and reduced flexibility, and that gas decline was a key driver of stress. They also separately commissioned former EA CEO Carl Hansen to review the EA's Level Playing Field options paper. Hansen (2025) argued that the EA had misdiagnosed the problem facing non-integrated retailers, describing outcomes as a healthy “contest between business models”. He attributed recent pressures to prolonged supply shocks and differences in long-term price-risk management, cautioning that adoption of “vertical integration is not in itself the saviour for a retailer”.²³

Mercury's submission accepted that market power in flexible hedge products may be a genuine risk, but argued that non-equivalence between integrated and independent retailers is not itself evidence of a competition problem. Its focus was on strengthening the hedge market and improving access to risk-management products, rather than imposing non-discrimination or mandatory trading requirements that it considered could erode the efficiencies of vertical integration.

Separately, an independent expert panel commissioned by Mercury reached its own conclusions within the scope set out in its report. The panel questioned whether non-discrimination and mandatory trading were well suited to a market with several providers of flexible generation, and cautioned that such measures could reduce competition and efficiency.

Industry-led submissions

Industry associations made similar but sometimes more qualified arguments. The Business NZ Energy Council supported a principles-based starting point if regulation proceeded, but cautioned against mandatory hedge trading and argued that barriers may be overstated because a material share of new generation was being developed by independents. ERANZ argued that winter 2024 conditions reflected gas, wind and hydro stress, that interventions risked investor confidence, and that vertical integration can smooth wholesale shocks for customers.

Energy Link accepted that independent retailers face barriers, but argued that vertical integration can improve security, capacity, demand response and hydro management, and that reducing vertical integration could leave gentailers as net generators with stronger spot-market incentives. Energy Resources Aotearoa strongly opposed virtual disaggregation, arguing that the root problem was insufficient fossil and flexible firming and that reallocating scarcity could raise prices and distort investment. The Electricity Engineers Association supported proportionate non-discrimination but emphasised risk-management, price-stability, investment and innovation benefits of integration.

The 2025 Frontier peer reviewers did not adopt all gentailer arguments: they were sympathetic to scepticism about whether accounting separation or non-discrimination would help much, but they said there was less support for the claim that conduct rules would increase prices and that virtual divestiture deserved serious, cautious examination if spot-market power were established.

Appendix 2

International jurisdictions – evidence and market summaries



A2.1

Alberta



Alberta made incumbent generators auction PPAs to curb market power and enable retail entry, which allocated output to third parties to trade as they want. This PPA mechanism has not been renewed.

Market structure

Alberta's electricity market operates an energy-only wholesale electricity market, in which generators are remunerated solely through an energy-only wholesale spot price without a separate capacity payment mechanism. This design places considerable weight on price signals to incentivise both generation investment and demand response.

Alberta's electricity market was restructured beginning in the mid-1990s, with the objective of introducing competition into a sector that had previously been dominated by vertically integrated, regulated utilities.

The restructuring process did not, however, mandate ownership separation of generation from retail supply. Instead, Alberta employed a distinctive set of contractual mechanisms (PPAs) to address incumbent market power while preserving existing corporate structures.

Power Purchase Arrangements

The PPAs, implemented from 2001, were the primary instrument through which Alberta sought to mitigate the market power of incumbent generators. Under the PPA regime, the output of existing generating units owned by the three major utilities – TransAlta, ATCO (formerly Canadian Utilities), and Capital Power (originally EPCOR) – was allocated to third-party buyers through a competitive auction process.

The PPAs effectively severed the economic link between the incumbent generators and their historical output for a defined period, typically twenty years. PPA holders acquired the right to the electricity produced by the contracted units and could sell that output into the wholesale market or use it to supply retail customers.

This mechanism enabled new retail entrants to access generation output without owning physical assets, thereby lowering barriers to entry in the retail market.

The PPA approach represented a contractual, rather than structural, form of separation. Ownership of the generating assets remained with the incumbent utilities, which continued to operate the plants. The economic benefits of dispatch decisions, however, accrued to the PPA holders rather than the plant owners during the contract period.

This arrangement sought to deliver the competitive benefits of separation (principally, access to generation output for new retail entrants) without the transaction costs and political difficulties associated with ownership divestiture.

Competition outcomes

Retail competition increased customer choice and supported the development of competitive retail offers. However, incumbent retailers entered the market with important advantages. EPCOR and ENMAX were particularly well placed to acquire PPAs because they already had established customer bases and billing systems against which the generation output could be matched.

Retail competition remained concentrated. ENMAX, which operated both generation and retail businesses and supplied the default regulated rate in Calgary, served more than half of Alberta's electricity customers between 2012 and 2015. Competitive retailing therefore developed alongside strong incumbent positions and continuing default supply arrangements.

Empirical evidence on the PPAs' retail-competition effects is limited. Brown et al. (2023) do not establish the PPAs' retail-competition effects. Their ex-post analysis focuses on short-run wholesale market power, controlling for market tightness and examining a narrow window around PPA expiry, while expressly excluding longer-term entry and exit.

The PPAs have now expired and the market has transitioned to a fully competitive structure in which generators sell their output directly into the wholesale market. The directed PPA has not been renewed.

Key lessons

- Alberta employed PPAs (commonly called directed contracts, vested contracts or foundation hedge in other jurisdictions) rather than ownership separation to address incumbent generator market power and facilitate retail entry.
- This approach delivered some competitive benefits while avoiding the costs of structural divestiture, though the market remains concentrated and empirical evidence on the effectiveness of the PPA mechanism in isolation is limited.

Alberta, New Zealand

No separation requirements

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.1

Alberta (continued)

Key market institutions

Alberta Electric System Operator (AESO): Operates the Alberta Interconnected Electric System and wholesale electricity market.

Alberta Utilities Commission (AUC): Approves tariffs and regulates utilities. Market oversight is also supported by the Market Surveillance Administrator and Utilities Consumer Advocate.

Hedge market structure

Limited, with forward, futures and CFD liquidity not routinely published. Directed PPAs provided retailers and large users with bilateral hedging and price certainty, while also supporting competition by broadening access to generation output.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

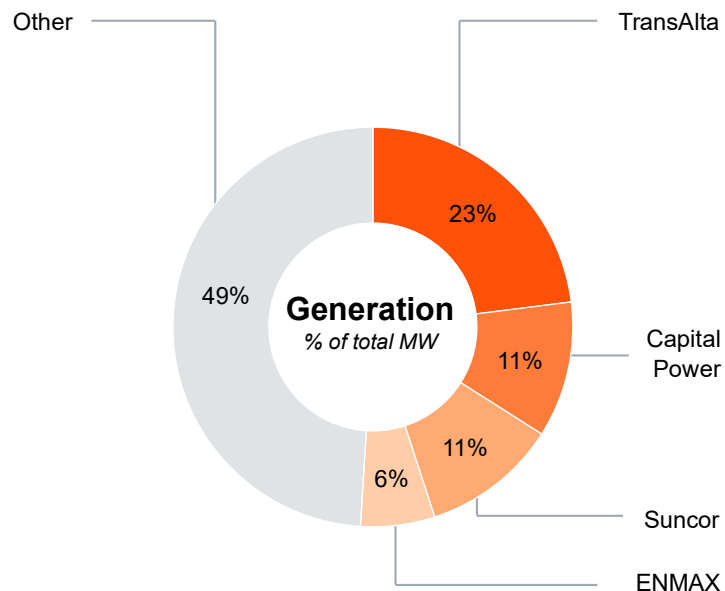


Retail
Competitive

Population no.
5.0 million

No. of connections
1.9 million

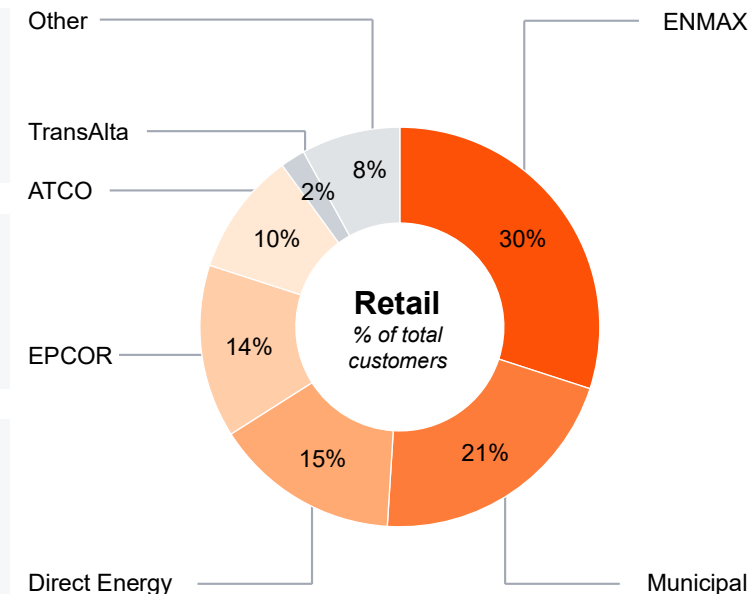
Average wholesale price
NZ\$54/MWh



No. of retailers
73

Average retail bill
NZ\$164/month

Average retail price
NZ\$0.27/kWh



Note(s): All figures as at 2025 unless stated otherwise; Retail market share as at 2024; FX rate used: 1 CAD = 1.24 NZD

Source(s): Alberta Electric System Operator (AESO), Alberta Utilities Commission (AUC), Canada Energy Regulator (CER), Office of the Utilities Consumer Advocate (UCA), Alberta Market Surveillance Administrator (MSA), ATCO Energy, company disclosures

A2.2 Australia – National Electricity Market



The ACCC concluded in 2018 that vertical integration is an economically efficient corporate response for managing variable wholesale prices observed in the market.

Vertical integration has emerged naturally in the Australian National Electricity Market (NEM), with no mandate to separate generation and retail. Regulation instead relies on targeted pro-competitive measures, competition law and market transparency. Within vertically integrated firms, generation and retail are typically treated as distinct commercial functions for internal pricing and performance purposes: wholesale electricity supplied to the retail arm is allocated through an internal transfer price, used both as the retailer's wholesale cost and to allocate profit between the two businesses.

The Australian Competition and Consumer Commission (ACCC) found that most gentailers set these transfer prices by reference to what the same electricity could earn in third-party contracts; effectively an opportunity-cost approach that leaves the retail arm facing a wholesale cost broadly comparable to a standalone retailer contracting through the market. This also enables the performance of the retail business to be benchmarked against competing retailers, while retaining the wider risk-management benefits of vertical integration.⁵³

Emergence of gentailer structures

The NEM was established in 1998 across the eastern and southern states. At inception, generation and retail were largely separate, reflecting state-based reforms of the 1990s: Victoria and South Australia privatised generation and retail as separate businesses, while NSW and Queensland retained separate state-owned entities.

Over the following two decades, market forces drove a progressive re-integration of generation and retail activities. Vertical integration was generally permitted, although particular acquisitions were scrutinised and at times opposed on competition/hedge-liquidity grounds.

Through a series of acquisitions, mergers, and organic growth, the NEM evolved to a market structure dominated by three large vertically integrated "gentailer" firms: Origin Energy, AGL Energy, and EnergyAustralia.

By 2018, six vertically integrated businesses accounted for nearly 90% of residential customers. The economic logic driving integration was primarily risk management. The NEM spot market is characterised by extreme price volatility, with prices ranging between a market price cap at times of market stress and negative prices being routine during periods of high renewable output.

In this environment, generation assets and retail load represent natural complements for hedging purposes. A firm with both generation and retail can offset wholesale price risk internally, avoiding the need to procure costly hedge contracts from external counterparties.

Vertical integration does not necessarily imply preferential internal pricing. The ACCC found most integrated firms priced internal supply by reference to what their generation business could earn from third-party contracts.

ACCC Retail Electricity Pricing Inquiry

The most comprehensive examination of the relationship between vertical integration and retail electricity outcomes in the NEM was conducted by the ACCC in its 2018 Retail Electricity Pricing Inquiry.⁵³ The ACCC examined the drivers of retail electricity price increases over the period 2007–18 and assessed the competitive dynamics of the retail market.

On the question of vertical integration, the ACCC reached nuanced conclusions, accepting that vertical integration provides a natural hedge that reduces risk management costs for gentailers.⁵³ It acknowledged that this cost advantage is structural as it reflects a genuine economic efficiency rather than an exercise of market power.

However, the ACCC also found that vertical integration, combined with high horizontal concentration in both generation and retail, contributed to a market structure in which standalone retailers faced significant cost disadvantages in procuring hedge contracts.

The ACCC's recommendations did not include any form of ownership separation. Instead, it recommended a suite of measures intended to improve competitive conditions within the existing integrated market structure. These included a default market offer (price cap) for residential and small business customers, enhanced transparency in network pricing, the prohibition of certain retail pricing practices, and measures to reduce barriers to customer switching.

Australia NEM, New Zealand

No separation requirements

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.2

Australia – National Electricity Market (continued)



Standalone retailers face an estimated hedge cost premium over vertically integrated suppliers. This is partially attributed in reviews and research to differences in risk premiums and trading positions.

Hedging costs and barriers for standalone retailers

Reviews and research on the NEM market have shown standalone retailers can face higher hedging costs than vertically integrated suppliers. This is partially attributed to differences in trading costs without internal hedging, and risk premia associated with counterparty risk and prudential requirements.

The ACCC's 2018 Retail Electricity Pricing Inquiry compared the weighted-average prices paid for OTC flat-swap contracts by the NEM's "big three" retailers with those paid by other retailers. It found that the big three paid less for OTC contract energy on average, with differences for individual contract types regularly in the range of A\$10–25/MWh. However, the advantage was not uniform across all regions or periods.⁵³

Frontier Economics identified several structural reasons why standalone retailers may face higher hedging costs than vertically integrated retailers. This cost premium can arise from several sources:

- Standalone retailers must procure hedges through bilateral OTC contracts or exchange-traded products, incurring transaction costs, credit support requirements, and bid-ask spreads.

- The liquidity of forward contract markets in the NEM varies materially across regions and time horizons, with liquidity thinnest in regions with concentrated generation ownership.
- Vertically integrated firms, natural sellers of hedge contracts, face limited incentives to make hedging products available on terms that would facilitate entry by competitors to their retail businesses.

In response to liquidity concerns, the RRO's Market Liquidity Obligation commenced in 2019 alongside a voluntary ASX market-making scheme, while the AEMC rejected a separate proposal for an additional AER-run market-making rule.

Frontier Economics (2023) also identified a structural risk-management advantage for vertically integrated retailers, which can use their generation portfolios as a natural hedge and avoid some of the transaction and credit costs associated with equivalent external hedge coverage. Frontier did not provide an estimate of this risk management advantage, but in a separate piece of work, Flottmann, et al (2024) estimate average ex-ante futures risk premia of approximately AUD 4–9/MWh across NEM regions over 2007–2023.

This cost advantage is not attributed a function of market power or anticompetitive conduct. As noted by the ACCC, it reflects a genuine economic efficiency of risk management practices

Key lessons

- The ACCC (2018) recognised risk management efficiencies from the natural hedge.
- However, it also found that vertical integration, combined with high horizontal concentration in both generation and retail, contributes to a market structure in which standalone retailers face significant cost disadvantages in procuring hedge contracts.
- Flottmann et al. (2024) found "hedging is a serious concern for most market participants. Swap contract availability is pushing some participants to increase their physical asset presence in areas where vertical integration is potentially impacting the liquidity of swap contracts".
- Frontier Economics (2023) separately identified a structural risk-management cost disadvantage for standalone retailers, reflecting external hedging transaction and credit costs, uneven forward-market liquidity, and vertically integrated firms' limited incentives to supply hedges on terms that support retail entry.
- Regulatory response has not focused on separation, but rather on targeted interventions to improve hedge liquidity and transaction-cost efficiency, and reduce barriers for independent participants.

Australia NEM, New Zealand

No separation requirements

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.2

Australia – National Electricity Market (continued)

Australian Energy Market Commission (AEMC): Develops rules governing energy markets.

Australian Energy Market Operator (AEMO): Operates the electricity and gas systems. **Australian Energy Regulator (AER):** Enforces market rules and monitors performance.

State and territory regulators: New South Wales (Independent Pricing and Regulatory Tribunal, IPART), Queensland (Queensland Competition Authority, QCA), South Australia (Essential Services Commission of South Australia, ESCOSA), Victoria (Essential Services Commission, ESC), Tasmania (Office of the Tasmanian Economic Regulator, OTTER).

Hedge market structure

Australian Securities Exchange futures; OTC CFDs, caps, PPAs; deepest in NSW/Victoria/Queensland, thinner in South Australia.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

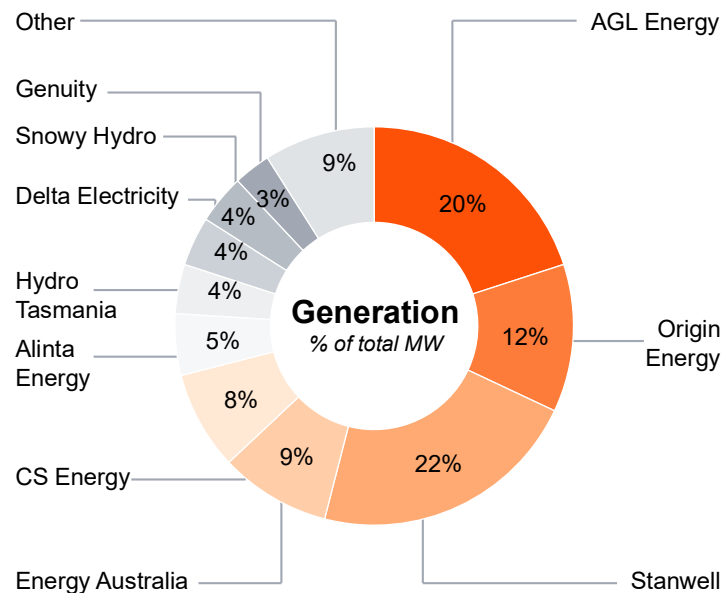


Retail
Competitive

Population no.
23.3 million

No. of connections
9.0 million

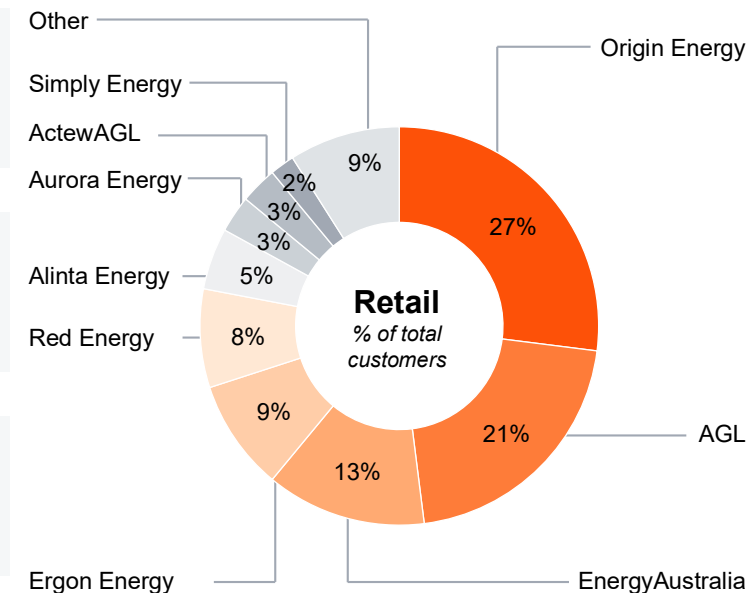
Average wholesale price
NZ\$99/MWh



No. of retailers
56

Average retail bill
NZ\$176/month

Average retail price
NZ\$0.40/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation market share as at 2024; FX rate used: 1 AUD = 1.10 NZD; Number of connections is assumed to be equivalent to the number of customers.

Source(s): Australian Energy Regulator (AER), Australian Competition and Consumer Commission (ACCC), Department of Climate Change, Energy, the Environment and Water (DCCEEW), Australian Energy Market Operator (AEMO), Federal Register of Legislation, Australian Bureau of Statistics (ABS), The Guardian

A2.3

Australia – Western Australia



Western Australia separated its state-owned power company in 2006 but reversed this in 2014 by re-merging generation and retail due to observed coordination inefficiencies, low competition benefits and lack of financial resilience.

Western Australia pursued legal separation in 2006, before reversing course in 2014 through a re-merger of the generation and retail entities. Common ownership by the State was permitted during this time.

Unlike the NEM, the South West Interconnected System (SWIS) of Western Australia does not have mass-market retail competition. Residential customers within the SWIS are non-contestable and supplied by Synergy, while contestability generally begins above 50 MWh of annual consumption. This gives Synergy a structurally dominant retail position alongside its substantial generation portfolio.

The Western Australian Wholesale Electricity Market (WEM) was historically dominated by Western Power Corporation, a vertically integrated State-owned entity responsible for generation, transmission, distribution and retail supply across the SWIS.

The 2006 disaggregation

In the early 2000s, the State Government undertook a comprehensive reform programme aimed at introducing competition and improving efficiency in the electricity sector.

In 2006, Western Power Corporation was disaggregated into four separate entities.⁶⁶ Western Power was retained as the networks business, responsible for transmission and distribution infrastructure. Synergy was established as the retail entity, supplying electricity to contestable and non-contestable customers.

Verve Energy was created as the generation corporation, inheriting the State's generation portfolio. Horizon Power was established to serve regional and remote areas outside the SWIS.

Verve Energy operated as a portfolio generator subject to various market conduct obligations, while Synergy purchased wholesale electricity through bilateral contracts and the Short Term Energy Market (STEM) and Balancing Market. The two entities dealt with one another at arm's length, and Synergy was free to contract with any generator.

The 2014 re-merger – formation of integrated Synergy

In January 2014, the Western Australian Government re-merged Verve Energy and Synergy into a vertically integrated generation and retail business,⁶⁶ also named Synergy. The merged business became the Electricity Generation and Retail Corporation.

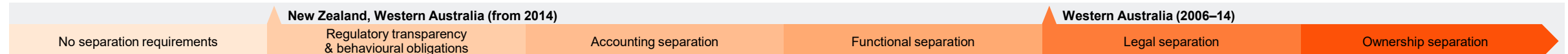
The Government's rationale included:

- Poor risk allocation: The original vesting arrangements left Verve exposed to fuel and generation costs that its contract revenues did not fully recover.
- Coordination inefficiencies: Separate businesses made fuel, hedging, procurement and investment decisions independently.

- Inefficient market structure: The Government considered that operating generation and retail as separate State businesses created unnecessary costs and prevented coordinated portfolio and procurement decisions.
- Limited scale: The Government considered the small, isolated SWIS unable to support two separate State businesses efficiently.
- Financial sustainability: Re-integration restored a natural hedge between generation and retail and strengthened the combined balance sheet.
- Fiscal pressure: Rising State debt and electricity subsidies duplicated costs and taxpayer support.

The re-merger created competition risks. Critics argued that it could strengthen the incumbent, reduce wholesale contract liquidity and disadvantage competing retailers and generators.

The re-merger created particular competition risks because Synergy combined its dominant retail position with a substantial generation portfolio. In 2023, the ERA estimated Synergy owned around half of WEM generation capacity and remained the dominant retailer and wholesale electricity supplier. The Government imposed regulation specifically on Synergy, including business segregation, non-discriminatory wholesale trading and mandatory access to standard wholesale products.



A2.3 Australia – Western Australia (continued)



Ring-fencing and non-discrimination rules were applied to the re-merged Synergy in 2013 and confirmed in 2023 and 2025 regulatory reviews.

The EGRC regulatory scheme and ring-fencing

To address competition concerns arising from the re-merger, the Government established a regulatory framework governing Synergy's conduct as the EGRC.

The Electricity Corporations (Electricity Generation and Retail Corporation) Regulations 2013 imposed a suite of ring-fencing and conduct obligations designed to prevent the integrated entity from leveraging its position to the detriment of competitors. Key features of the EGRC regulatory scheme include:

- segregation of business units, with requirements for informational separation between the generation and retail businesses
- restrictions on the internal transfer of competitively sensitive information
- cost allocation principles to prevent cross-subsidisation
- obligations to offer wholesale products to third-party retailers on non-discriminatory terms.

The Economic Regulation Authority (ERA) was assigned responsibility for monitoring compliance with these obligations.

Synergy has also been subject to active enforcement under Western Australia's broader market conduct rules. In 2022, the Electricity Review Board found that Synergy had breached the market rules in 11,012 trading intervals between 2016 and 2017 by offering generation based on inflated costs in conduct related to its market power. Synergy subsequently agreed to a \$30 million penalty.

In 2023, the ERA completed an effectiveness review of the EGRC scheme.⁶⁴ The review concluded that the EGRC scheme remains necessary but recommended specific improvements, including removing the generation restricted information ring-fencing requirement and the disclosure mechanism, while retaining retail restricted information ring-fencing.

While some areas for improvement were identified, particularly transparency of internal transfer pricing and information barriers, no fundamental changes were recommended.

The review noted that complaints from market participants about Synergy's conduct had been limited, though it acknowledged that this could reflect market acceptance as much as the efficacy of the scheme itself.

Key lessons

- Initial reforms by the State Government in the early 2000s aimed to increase competition and efficiency in the energy sector, resulting in the separation of Synergy (retail) and Verve (generation) from Western Power Corporation.
- Subsequent re-merging of these entities was undertaken by the Western Australian Government in 2014 due to the following reasons:
 - **Poor risk allocation** as Verve's contracted revenues did not fully recover fuel and generation costs
 - **Coordination inefficiencies** coming from independent decisions for fuel, hedging, procurement and investment.
 - **Limited scale** as SWIS was considered too small and isolated to operate two separate State businesses.
 - **Restoration of the natural hedge** on re-integration which strengthened the combined balance sheet.
 - **Fiscal pressure** as rising state debt and electricity subsidies duplicated costs and taxpayer support.
- Following re-merging, the EGRC (2013) implemented ring-fencing and conduct obligations to prevent the integrated firm from benefitting itself at the expense of competitors in 2013.
 - The subsequent 2025 review again retained the core scheme, with further changes focused principally on improving transparency around Synergy's standard-product pricing. The direction of reform has therefore been to refine targeted safeguards around an integrated Synergy rather than revisit ownership separation.

A2.3 Australia – Western Australia (continued)

Key market institutions

Coordinator of Energy: Administers and decides ESM Rule changes; the Minister for Energy may make amending rules and approves changes to protected provisions.

Australian Energy Market Operator (AEMO): Operates the Wholesale Electricity Market (WEM) and maintains secure and reliable operation of the South West Interconnected System (SWIS).

Economic Regulation Authority (ERA): Regulates network access and electricity licensing, administers retail customer-protection codes, and monitors and enforces WEM compliance.

Hedge market structure

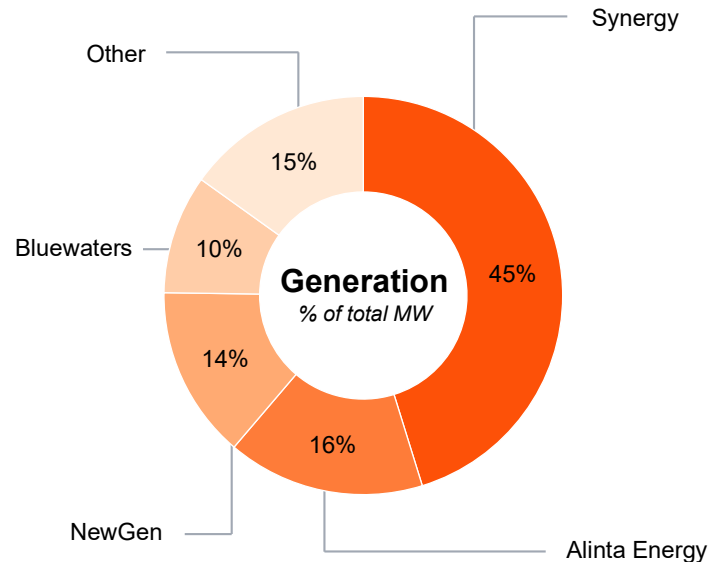
Bilateral PPAs and Synergy forwards; thin, no exchange futures, and constrained independent-retailer access.



Population no.
3.1 million

No. of connections
1.2 million

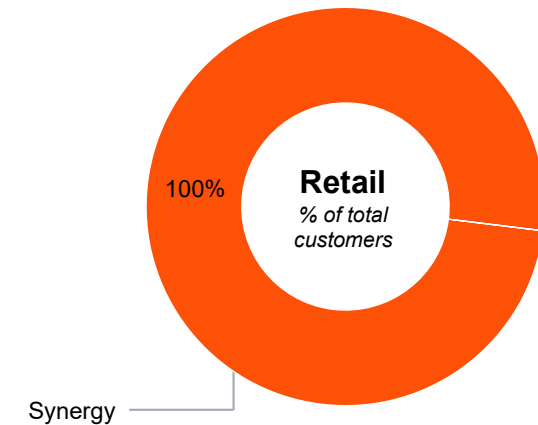
Average wholesale price
NZ\$96/MWh



No. of retailers
12

Average retail bill
NZ\$191/month

Average retail price
NZ\$0.44/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation and retail market share as of 2025–26 and 2024–25, respectively; FX rate used: 1 AUD = 1.10 NZD; Number of connections is assumed to be equivalent to the number of customers.

Source(s): Economic Regulation Authority (ERA), Australian Energy Market Operator (AEMO), Government of Western Australia, Synergy, Australian Bureau of Statistics (ABS), company disclosures

A2.4

European Union (EU)



The EU's Third Energy Package mandates unbundling of network infrastructure from competitive activities and lays the foundation for cross-border interconnectivity, leaving generation-retail separation to member state discretion.

The EU's energy market liberalisation framework made independent network governance the institutional foundation for greater interconnection and cross-border market integration. It mandated separation of transmission from competitive activities, while leaving the relationship between generation and retail largely to national choice.

The Third Energy Package: network unbundling

Directive 2009/72/EC (and its successor, Directive 2019/944 under the Clean Energy Package) establishes binding requirements for unbundling transmission system operators from competitive generation and retail activities.⁹⁰

Three models are offered to member states:

- ownership unbundling (the default and most stringent form, requiring transmission assets to be held by entities with no generation or retail interests);
- the independent system operator (ISO) model (allowing ownership but requiring operational independence); and
- the independent transmission operator (ITO) model (championed by France and Germany, permitting ownership within an integrated group subject to extensive governance safeguards).

These requirements address the natural monopoly characteristics of transmission infrastructure and the risk that an integrated firm controlling both the network and competitive activities could discriminate against rivals in access, pricing, or investment decisions.

Network unbundling provided an institutional foundation for greater interconnection and market integration. By separating transmission decisions from generation and retail interests, the Third Energy Package reduced incentives for network owners to restrict rival access, favour affiliated businesses or underinvest in links that could expose domestic generators to greater competition.

The wider package converted this independence into cross-border coordination through common access and congestion-management rules, ENTSO-E, ACER and a Union-wide ten-year network development plan. Together, these measures supported more efficient use of existing interconnectors and more coordinated investment in new capacity. Unbundling was therefore an important enabling condition for integration, but did not drive physical interconnector construction on its own.

Generation-retail integration

The EU framework does not require generation and retail supply to be separated. Member states therefore retain discretion over

whether these activities remain under common ownership, subject to competition law and national regulation.

Generation-retail integration was nevertheless considered in the European Commission's 2005–07 Energy Sector Inquiry, which found that integration could reduce external trading, weaken wholesale liquidity and hinder independent supplier entry. These concerns did not lead to an EU-wide separation proposal. The Third Energy Package instead focused on separating transmission networks from generation and supply, with negotiations centred on ownership unbundling and the ISO and ITO alternatives.

The evidence suggests that policymakers recognised risks from gentailer integration but chose to address them through network unbundling, market-access rules, transparency and competition enforcement rather than mandatory generation-retail separation.

A2.5

France

France uses regulated access mechanisms rather than ownership separation to enable limited competition, while integrated incumbent EDF retains market control.

France’s electricity market centres on EDF and the strategic importance of the national nuclear fleet. EDF is wholly owned by the French state and operates all 57 of France’s nuclear reactors, with 62.9 GW of installed capacity, alongside substantial hydro and renewable generation. It also retains a leading position in retail supply. The French state treats EDF and its nuclear fleet as nationally significant assets that support energy sovereignty, security of supply, industrial policy and access to low-carbon, competitively priced electricity.

France has therefore sought to manage the competitive advantages created by EDF’s control of the historic nuclear fleet without fragmenting its ownership or separating generation from retail. France complied with EU network-unbundling requirements, but preserved EDF’s integrated generation-retail structure. Until the end of 2025, it relied on regulated nuclear access through ARENH, alongside regulated retail tariffs and competition oversight, to enable alternative suppliers to compete.

ARENH concluded on 31 December 2025 and, from 2026, suppliers procure electricity through wholesale markets or their own generation. EDF’s nuclear output is now sold on market terms, with the new Universal Nuclear Payment (VNU) mechanism providing for excess nuclear revenues to be partially redistributed to consumers, alongside measures to support longer-dated wholesale product availability.

Project Hercule later explored a broader internal reorganisation of EDF to address nuclear financing, governance and competition concerns. However, it was not implemented and did not represent a straightforward separation of generation from retail.

The ARENH mechanism

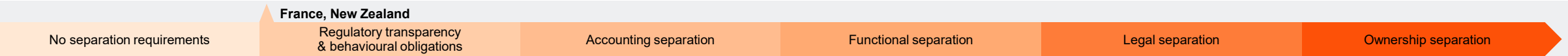
France introduced ARENH in 2011 to address the competitive advantage created by EDF’s control of the historic nuclear fleet while preserving its integrated generation-retail structure.^{102,104}

ARENH required EDF to sell up to 100 TWh of nuclear electricity each year to alternative suppliers at a regulated price of €42/MWh. This gave independent retailers access to baseload electricity on terms intended to support competition with EDF’s retail business.

The mechanism operated as a regulated wholesale access obligation, broadly similar to a compulsory vesting arrangement. It allowed alternative suppliers to benefit from part of the cost advantage of EDF’s nuclear fleet without owning generation assets themselves.

ARENH therefore provided an alternative to ownership separation. Rather than requiring EDF to divest nuclear capacity or separate generation from retail, France gave competing suppliers synthetic access to nuclear output so they could develop offers that competed with EDF’s regulated retail tariffs.

The approach is particularly relevant where a small number of nationally significant assets underpin security of supply, affordability or industrial policy. It shows how government can retain ownership and operational control of strategic generation while sharing part of its economic benefit with competitors. However, this shifts the competition question from ownership to regulatory design, including how access volumes and prices are set, how scarcity is allocated, and whether independent retailers receive enough certainty to compete and invest.



A2.5

France (continued)



France uses regulated access mechanisms rather than ownership separation to enable limited competition, while integrated incumbent EDF retains market control.

Retail competition outcomes

ARENH and earlier Virtual Power Plant auctions lowered barriers to entry without changing ownership of EDF's generation assets. The auctions required EDF to make capacity available to third parties, while ARENH gave alternative suppliers regulated access to nuclear output. Together, these measures created competitive access around nationally significant assets rather than transferring those assets to competitors.

Retail competition in France has largely developed around the edges of EDF's dominant position rather than displacing it. Early entrants gained little traction: Poweo and Direct Énergie had attracted only around 20,000 customers by the end of 2004, while foreign suppliers such as Endesa and Enel established only small positions. Direct Énergie later became the largest alternative supplier, but Total acquired it in 2018, reinforcing the importance of scale, financial strength and generation backing when competing with EDF.

The 2022 energy crisis exposed the fragility of this competitive fringe. EDF's regulated tariffs gave eligible customers substantial protection from the wholesale price shock, while alternative suppliers remained more exposed to wholesale markets and the availability of regulated nuclear volumes. Retail competition therefore depended heavily on the design of ARENH and the regulated tariff framework, rather than on a broadly diversified generation and retail market.

Ownership separation not pursued

France has not separated EDF's generation and retail businesses. In 2019–20, Project Hercule proposed dividing EDF into separate groupings for nuclear and other strategic public assets, hydro generation, and customer-facing activities such as retail, renewables and services. The proposal did not proceed (see next page).

The debate reinforced France's preference to retain coordinated control over the nuclear fleet, energy security, investment and industrial policy.

Key lessons

- France shows how government can preserve control of nationally significant generation while creating regulated access for competitors.
- ARENH and the VPP auctions supported a competitive fringe without requiring EDF to divest nuclear assets or separate generation from retail.
- However, this approach did not reproduce the competitive effects of diversified generation ownership. Its success depended on regulated access volumes, administratively set prices and the interaction with regulated retail tariffs.
- Competition remained closely tied to both EDF's market position and the design of the regulatory framework.

France, New Zealand

No separation requirements

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.5

Case study: EDF – Project Hercule: An attempted separation



EDF's Project Hercule shows the practical difficulty of legal separation: the proposed split stalled over pricing, funding and EU competition issues before EDF was fully nationalised.

What happened

Project Hercule was a plan by French power company EDF to split its business into three parts: EDF Bleu (nuclear plants and strategic public assets), EDF Azur (hydroelectric assets), and EDF Vert (customer-facing activities like retail supply, renewables and services). The goal was to redesign how EDF was funded and regulated, while staying within EU competition rules and French state-aid limits.

The plan first surfaced around 2019, was revived in 2020, but faced heavy political and regulatory resistance. It never reached a formal, board-approved agreement and was eventually replaced by full state ownership of EDF.

Why it was proposed

EDF was under severe financial and strategic pressure, making it hard to fund both its old nuclear commitments and its growth areas like renewables and networks. Problems included poor overseas investments, the delayed and over-budget Flamanville nuclear reactor, and the ARENH scheme – which forced EDF to sell a large share of its nuclear output to competitors at a fixed €42/MWh, arguably below cost.

Hercule also aimed to fix regulatory issues: nuclear power would sit in publicly owned EDF Bleu and be sold fairly to all suppliers, while the European Commission (principally its Directorate-General for Competition) wanted strict separation to prevent cross-subsidies. Azur would protect strategic hydro assets, and Vert would attract private investment.

Why was it not progressed

Hercule did not progress because agreement could not be reached on several important aspects of the proposed restructuring. These included differences between the French Government's objectives for EDF and European Commission requirements relating to competition, state aid, nuclear pricing and hydro concessions. The proposal also faced strong opposition from French trade unions, which were concerned that restructuring would fragment EDF and alter the allocation of risks and returns across the group.

Progress was further complicated by EDF's deteriorating financial position during the European energy crisis. Rather than continue pursuing the restructuring, the French Government shifted its focus toward strengthening state control of the company and acquired the remaining minority shareholding in EDF. Ultimately, the Hercule proposal was discontinued before a final restructuring agreement was reached or implemented.

Is this case study relevant?

Yes, but with caveats. Hercule was never implemented and was not purely about separating generation from retail. It was a broader restructuring involving nuclear finance, hydro, networks and EU law.

Its key lesson: electricity separation is politically and practically difficult. Without firm agreements on assets, pricing, debt and consumer protection, separation risks shifting costs around rather than improving reliability, affordability or sustainability.



A2.5

France (continued)

Key market institutions

Energy Regulatory Commission (CRE): Regulates energy markets, network tariffs and access, monitors competition and protects consumers.

Réseau de Transport d'Électricité (RTE): Operates and balances transmission system.

Dispute Settlement and Sanctions Committee (CoRDiS): Enforces regulatory compliance.

Hedge market structure

Via OTC, futures and EDF auctions; liquidity improved in 2025, long-dated depth thinner.

**Generation**

Competitive but high EDF concentration



Transmission
Natural monopoly



Distribution
Natural monopoly



Retail
Competitive but high EDF concentration

Population no.

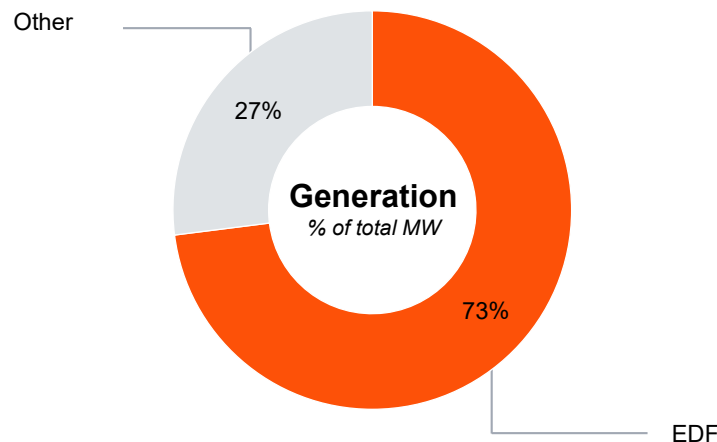
69.1 million

No. of connections

40.3 million

Average wholesale price

NZ\$122/MWh

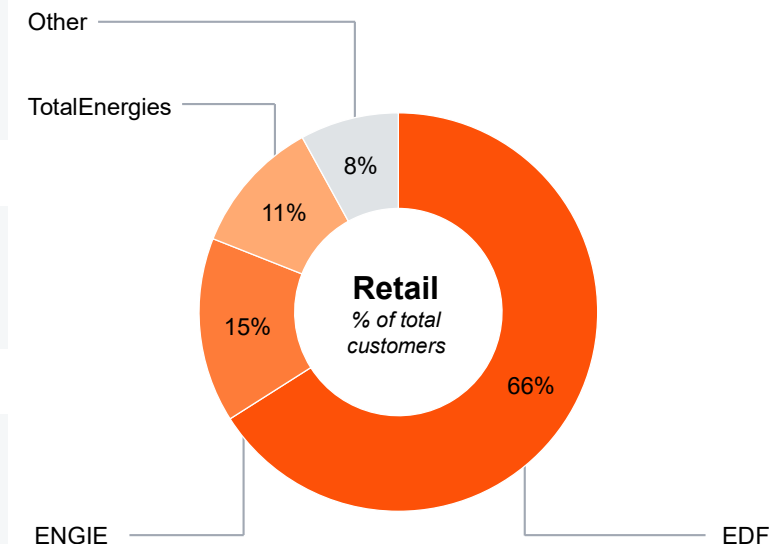


No. of retailers

180

Average retail bill
NZ\$184/month

Average retail price
NZ\$0.52/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation and retail market share as at 2026; FX rate used: 1 EUR = 1.99 NZD

Source(s): Transmission System Operator (RTE), Energy Regulatory Commission (CRE), National Institute of Statistics and Economic Studies (INSEE), Eurostat, Enerdata, Légifrance, Selectra, company disclosures

A2.6

Germany



Targeted EU competition enforcement and voluntary corporate restructuring reshaped Germany's major utilities without mandating sector-wide generation-retail separation.

Germany did not adopt structural solutions. Instead, it applied progressively stronger interventions to different retail market problems as they emerged.

At the foundation, EU and German law separated monopoly transmission and distribution networks from competitive generation and retail activities and imposed regulated, non-discriminatory network access. Generation and retail could remain within the same corporate group.

Where concerns arose within generation and retail markets, German and EU authorities used market monitoring and competition law to investigate suspected capacity withholding, discriminatory conduct and other potential abuses of market power.

The European Commission then used targeted structural remedies, including E.ON's divestiture of generation assets and its transmission network, to address specific wholesale and network concerns without imposing sector-wide generation-retail separation.

Corporate restructuring added a further layer. E.ON's spin-off of Uniper and the later E.ON-RWE asset swap produced greater specialisation between generation, networks and retail. These changes reflected the pressures of Germany's energy transition (Energiewende), investor preferences and corporate strategy rather than a regulatory separation mandate.

European Commission competition enforcement: E.ON commitment decision

In 2008, the European Commission investigated E.ON for alleged abuse of a joint dominant position by strategically withholding capacity from the wholesale market.¹¹⁵

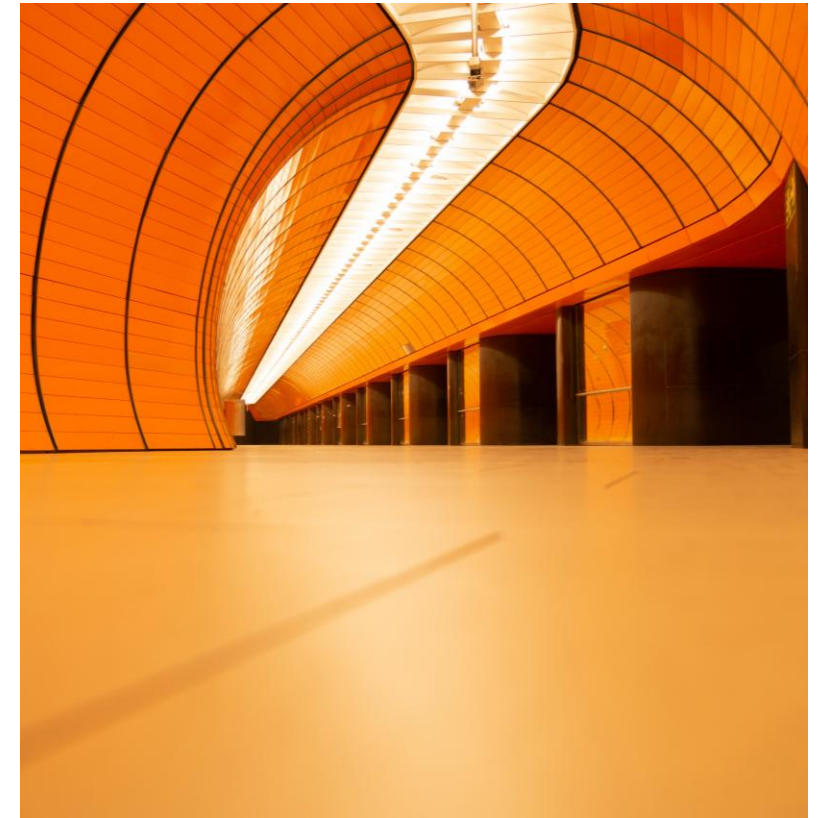
E.ON offered two structural commitments:

- It sold approximately 5,000 MW of generation capacity; and
- It sold its extra-high-voltage transmission network.

The remedies addressed different problems. The generation sales transferred price-setting assets to competitors and reduced E.ON's ability to influence wholesale prices. The sale removed the incentive for the transmission operator to favour an affiliated generator.

The Commission made the commitments binding but did not find that E.ON had infringed competition law. It also did not require E.ON, or any other German utility, to separate generation from retail.

Subsequent empirical analysis associated the generation divestitures with a narrower gap between peak and off-peak wholesale prices. The estimated effects were strongest for coal and gas assets that could influence marginal and peak prices. This supports targeted generation divestiture as a remedy for wholesale concentration.



Germany, New Zealand

No separation requirements

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.6

Germany (continued)



Targeted EU competition enforcement and voluntary corporate restructuring reshaped Germany's major utilities without mandating sector-wide generation-retail separation.

Voluntary corporate restructuring: E.ON-Uniper and E.ON-RWE

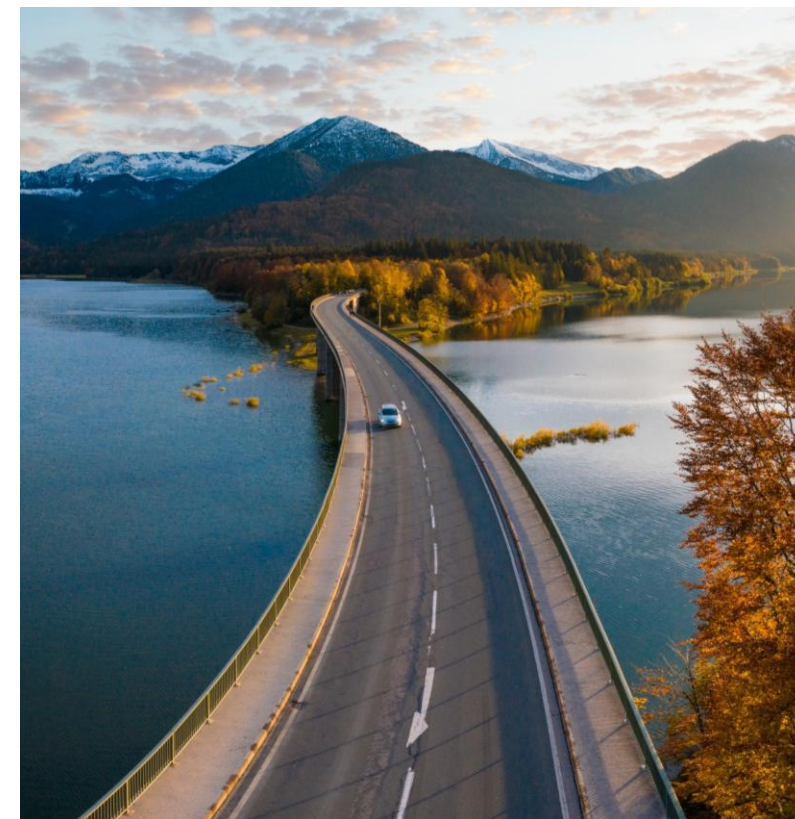
E.ON chose to spin off most of its conventional generation and wholesale activities into Uniper in 2016. E.ON retained its networks, retail operations and renewable assets. This reflected its energy-transition strategy and investor preferences rather than a regulatory separation requirement.

The E.ON-RWE asset swap produced further specialisation between 2018 and 2020. E.ON acquired Innogy's network and retail businesses, while RWE consolidated conventional and renewable generation assets.

The European Commission reviewed the transaction under EU merger rules and required targeted remedies¹¹⁶ where it identified concerns in particular retail and electric-vehicle charging markets. It did not require comprehensive separation between generation and retail.

Key lessons

- Germany combined several layers of intervention:
 - network unbundling and regulated access as the market-wide foundation;
 - monitoring and competition law to address market conduct;
 - targeted divestitures and merger remedies for specific competition concerns; and
 - voluntary restructuring where firms saw commercial value in greater specialisation.
- These methods produced greater specialisation among major firms without a sector-wide generation-retail mandate.
- Germany illustrates how authorities can escalate from general market rules to firm-specific structural remedies without requiring an industry-wide split. However, the later corporate restructurings also reflected Germany-specific conditions, including the Energiewende and investor demand for more specialised business models.



Germany, New Zealand

No separation requirements

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.6

Germany (continued)

Key market institutions

Federal Network Agency (Bundesnetzagentur, BNetzA): Regulates network access and tariffs and monitors electricity and gas markets.

Federal Cartel Office (Bundeskartellamt, BKartA): Enforces competition law and investigates market power and anti-competitive conduct.

Hedge market structure

European Energy Exchange futures, OTCs, PPAs; liquid access.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

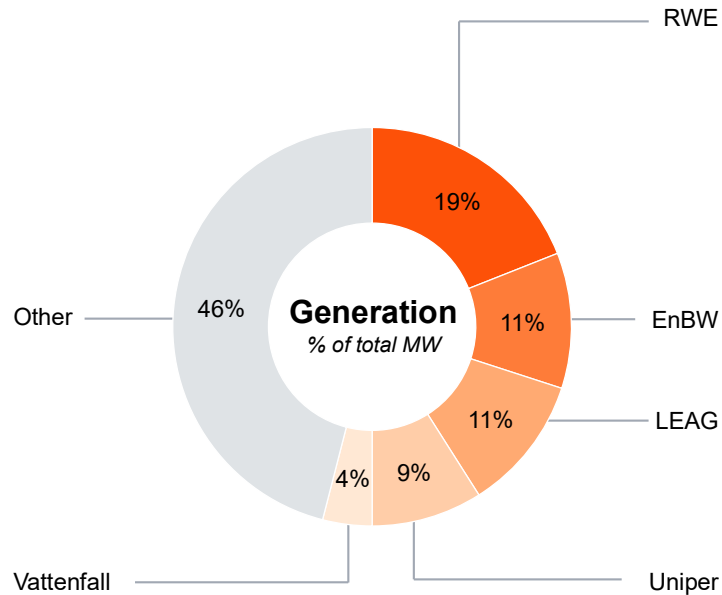


Retail
Competitive

Population no.
83.5 million

No. of connections
53.0 million

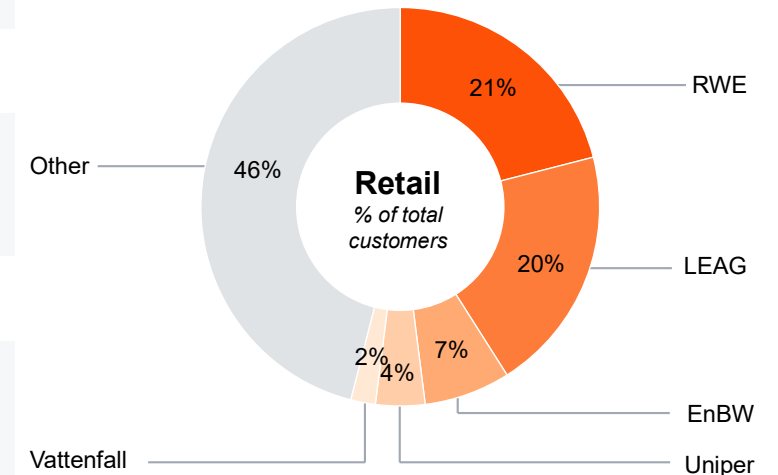
Average wholesale price
NZ\$178/MWh



No. of retailers
153

Average retail bill
NZ\$223/month

Average retail price
NZ\$0.77/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation and retail market share as at 2024; FX rate used; 1 EUR = 1.99 NZD; Number of connections is assumed to be equivalent to the number of customers.

Source(s): Federal Network Agency (Bundesnetzagentur), Federal Cartel Office (Bundeskartellamt), International Energy Agency (IEA), Federal Statistics Office, Association of Energy and Water Industries (BDEW), European Network of Transmission System Operators for Electricity (ENTSO-E)

A2.7

Great Britain



Britain separated generation and retail initially through privatisation, but markets reintegrated into the Big Six. CMA has declined structural intervention, instead relying on regulatory oversight and market making obligations.

Great Britain (GB) permits common ownership of generation and retail, but uses licensing, accounting separation, conduct and transparency rules to constrain preferential treatment and provide transparency over profits and costs.

Initial separation (1990–91)

The privatisation reforms of 1990–91 created structurally separated entities:

- 3 generation companies (National Power, PowerGen and Nuclear Electric)
- 12 Regional Electricity Companies in England and Wales (RECs) responsible for distribution and retail supply
- National Grid, responsible for transmission.

This architecture was explicitly designed to promote wholesale market competition by preventing generators from controlling the retail route to market.

Market-driven reintegration – the “Big Six”

Over the subsequent two decades, a series of mergers and acquisitions progressively reintegrated generation and retail supply. The RECs acquired or were acquired by generation companies, new entrant generators established retail arms, and European energy groups entered with vertically integrated business models.

By the early 2010s, the market was dominated by six large vertically integrated suppliers – British Gas (Centrica), EDF Energy, E.ON, npower (RWE), ScottishPower (Iberdrola) and SSE – commonly referred to as the “Big Six”.

This reintegration was a market-driven outcome reflecting participants’ assessment that vertical integration provided commercial advantages including a natural hedge, reduced transaction costs, and portfolio optimisation.

Supplier licence conditions

The Great Britain framework permits common ownership of generation and retail businesses, including within a single corporate group, with each activity separately licensed. Network businesses are subject to separate legal and regulatory unbundling requirements.

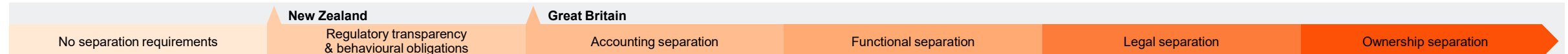
Relevant generation licence conditions applying to vertically integrated power companies include:

Accounting separation – Condition 16 of the Electricity Generation Licence requires regulatory accounts to be prepared for each separate business and accounting records to be maintained “as would...be required to be kept in respect of each such business if it were carried out by a separate company”.

- **Non-discrimination** – Condition 17 provides that the generator and its affiliates must not sell electricity to one purchaser on price terms that are “materially more or less favourable” than those offered to comparable wholesale purchasers.
- **Cross-subsidisation** – Condition 17A requires the generation business not to “give any cross-subsidy to or receive any cross-subsidy from” another business in the licensee’s corporate group.

Historically, large vertically integrated groups published Consolidated Segmental Statements that separately reported the revenues, costs and profitability of their generation and supply businesses, allowing direct comparison between the two activities and greater visibility over how value was allocated within integrated groups.

In 2024, Ofgem removed generation reporting from this regime and shifted the disclosure framework toward supplier profitability. As a result, current public reporting provides broader and more standardised information on retail supply, but less visibility over generation profitability, transfer pricing and the financial relationship between generation and retail activities.



A2.7

Great Britain (continued)



The CMA did not find a sufficient competition basis for legal separation, instead favouring targeted measures to improve wholesale liquidity, market access and competition.

The CMA Energy Market Investigation

The CMA conducted a comprehensive energy market investigation between 2014 and 2016.¹²⁸ Vertical integration was a central focus. The CMA examined whether the prevalence of vertical integration constituted or contributed to an adverse effect on competition (AEC).

The CMA found that vertical integration reduced liquidity in the wholesale electricity market^{127,128} as internal hedges reduced the volume they needed to buy or sell externally. This made it more difficult and costly for non-integrated retailers to procure wholesale electricity, creating a potential barrier to entry and expansion.

However, the CMA ultimately concluded that vertical integration did not in itself have an adverse effect on competition.¹²⁸ It reasoned that vertical integration was a legitimate and efficient business model generating real economic efficiencies, and that the appropriate regulatory response was to address the downstream consequences (reduced liquidity) through targeted interventions rather than prohibiting or unwinding integration.

Secure and Promote licence condition

In 2014, Ofgem introduced a Secure and Promote licence condition to address weak wholesale-market liquidity.¹³⁵

- **Supplier market access** required major generators to respond to smaller suppliers, negotiate fairly and offer products on reasonable terms.
- **Market-making**, applied to the Big Six, required continuous bid and offer prices for specified forward products, supporting trading volumes and a reliable forward price curve.
- **Monitoring and reporting** requirements.

The obligations were progressively narrowed as firms sold generation assets, restructured or became less vertically integrated. Ofgem suspended mandatory market-making in 2019 after too few obligated firms remained. Supplier Market Access continued, leaving a more targeted wholesale-access regime.

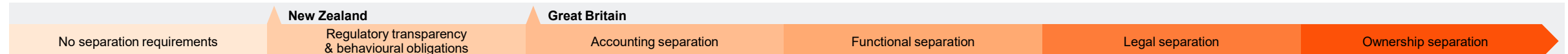
Independent-retailer experience

During the 2010s, a number of independent suppliers entered the retail market, often operating without generation assets and relying on wholesale and hedge markets. Independent suppliers accounted for less than 1% of domestic customers in 2010; by 2019, the six large suppliers' combined market share had fallen to just above 70%.

Some independent retailers were more exposed to wholesale price volatility and collateral requirements because they relied on external markets to manage their wholesale risk. A number failed during wholesale price spikes in 2018–19 and the energy crisis of 2021–22, triggering repeated use of the Supplier of Last Resort (SoLR) mechanism.

Failures were attributed to under-capitalisation and inadequate hedging, rather than the absence of generation itself. Successful independent retailers demonstrated that wholesale risk could also be managed through external hedging and other risk-management strategies. However, the experience of independent retailers was not uniform. Octopus Energy, which entered the market in 2016 as an independent retailer without generation assets, grew rapidly to a current retail market share of about 25%. This suggests that commercial success without legacy generation portfolios was achievable in the market.

The Octopus example also illustrates that generation exposure may become attractive as retailers scale. Octopus now owns solar, waste-to-energy, onshore and offshore wind, and batteries in Great Britain. Globally, it manages 5.7 GW of capacity and is targeting 20 GW by 2030.



A2.7

Great Britain (continued)



De-integration since 2016 has been commercially driven, although concerns remain that integrated firms retain advantages in hedging and market access.

Voluntary de-integration

Since 2016, several of the original Big Six have voluntarily divested or restructured their generation assets, reducing the degree of vertical integration in the market. Only 4 remain fully vertically integrated as of 2026. SSE sold its domestic retail business to OVO in 2020, but retained non-domestic retail. RWE/npower, and more recently OVO Energy, have agreed to sell their retail books to E.ON.^[1]

These were commercial decisions driven by corporate strategy, investor preferences, commodity-market changes and energy-transition positioning, rather than regulatory mandates.

**Stakeholder-sponsored evidence:
FTI Consulting report**

Independently commissioned reports – FTI Consulting for Octopus Energy, 2025,¹²⁹ and Haar, 2021¹³⁰ – state that non-integrated retailers in GB faced structural competitive disadvantages arising from vertical integration, including reduced wholesale liquidity, higher hedging costs, and inferior access to balancing and ancillary service revenues.

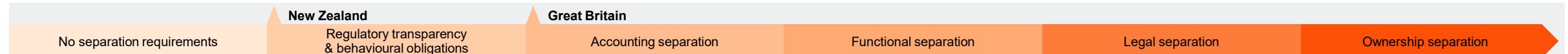
The FTI report contends that the Secure and Promote condition was insufficient to address these disadvantages fully, and that the GB regulatory framework has not achieved a genuinely level playing field for independent retailers.¹²⁸ The report draws on the 2025 Ofgem options paper on level-playing-field measures as evidence that the regulatory discussion remains live.

Key lessons

- Evidence from the CMA (2016) found that vertical integration reduced liquidity in the wholesale electricity market, as internal hedges reduced the volume that vertically integrated firms had to buy/sell externally.
- This made it more difficult and costly for independent retailers to procure electricity, and created potential barriers to entry and expansion.
- FTI Consulting (2025) returned similar conclusions, that independent retailers face disadvantages including reduced wholesale liquidity, higher hedging costs, and inferior access to balancing and ancillary service revenues.¹²⁸
- Independent retailers are also often under-capitalised, which combined with limited access to hedges leaves them prone to wholesale price volatility during crisis periods and puts them at risk of falling short of collateral requirements.
- The CMA (2016) found that vertical integration did not adversely affect competition in itself; however, addressing liquidity issues through targeted interventions was more appropriate than targeting separation.

Note:

[1] As at the date of this report, the proposed sale has been announced but not yet completed.



A2.7

Great Britain (continued)

Key market institutions

Office of Gas and Electricity Markets (Ofgem): Regulates the markets and protects consumers.

Department for Energy Security and Net Zero (DESNZ): Sets energy and climate policy.

Competition and Markets Authority (CMA): Enforces competition law, reviews mergers and investigates market conduct.

Hedge market structure

Deep OTC/exchange forwards/futures (annual to intraday); UK Government CFD auctions for renewables; high liquidity (accessible via European Energy Exchange).



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

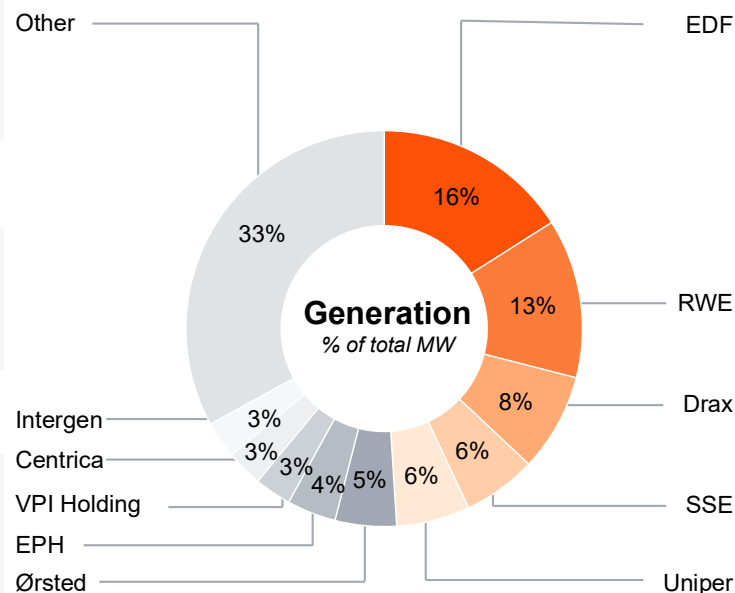


Retail
Competitive

Population no.
67.6 million

No. of connections
32.0 million

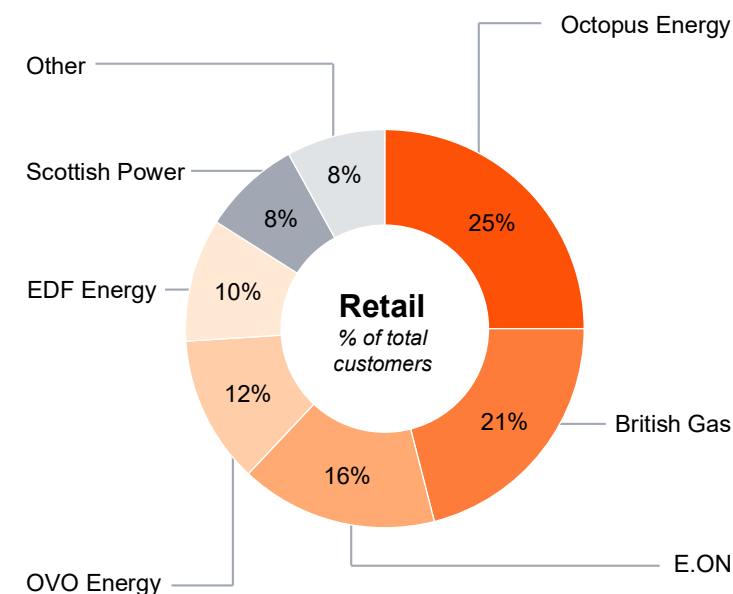
Average wholesale price
NZ\$185/MWh



No. of retailers
17

Average retail bill
NZ\$182/month

Average retail price
NZ\$0.60/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation market share as at 2026; FX rate used: 1 GBP = 2.30 NZD

Source(s): Department for Energy Security and Net Zero (DESNZ), Office of Gas and Electricity Markets (Ofgem), National Energy System Operator (NESO), Energy Saving Trust UK, Uswitch

A2.8

Ireland and Northern Ireland Single Electricity Market (SEM)



The Ireland and Northern Ireland SEM combines integrated wholesale trading with separate national retail regimes, while retaining targeted safeguards against incumbent market power.

The Republic of Ireland and Northern Ireland Single Electricity Market (SEM) combines unusually deep cross-jurisdiction governance with partial integration into the wider European electricity market. Ireland and Northern Ireland share a single wholesale market, but retain separate retail markets, consumer frameworks, public service obligations and national regulators. The CRU and Utility Regulator jointly govern wholesale arrangements through the SEM Committee.

ESB is a state-owned vertically integrated power supplier that owns and operates generation, retail and network businesses in a vertically integrated utility with legal separation. Energia Group is a vertically integrated supplier with retail brands Power NI (the original incumbent) and Energia. Northern Ireland's networks are owned by NIE Networks and are separate.

From the mandatory pool to I-SEM

The original SEM commenced in November 2007 as a mandatory gross pool.¹³⁹ Generators sold all electricity through a centrally dispatched market, while suppliers managed price risk through financial contracts linked to the pool price. This structure created a transparent wholesale reference price but concentrated trading in the pool and limited the development of forward markets.

I-SEM replaced this model in October 2018. It introduced forward, day-ahead, intraday and balancing markets, together with a market-based Capacity Remuneration Mechanism. The redesign aligned the All-Island market with the EU Target Model and shifted trading from a single central pool to several market timeframes. It also made interconnector access, market coupling and forward liquidity more important to competition and price formation.

EU structures but limited interconnection

I-SEM aligned the all-island market with the EU Target Model by adding forward, day-ahead, intraday and balancing markets and interconnector trading. This strengthened price discovery and access to external markets.

However, Ireland's physical links remained limited and concentrated through Great Britain. The Celtic Interconnector is still in development which will connect Ireland to France and give them a direct connection to the EU market. As a result, Ireland did not gain the same depth of regional competition or consistent price convergence. Regulators therefore continued to rely on Directed Contracts, bidding rules, market monitoring and ESB ring-fencing to manage domestic concentration.

I-SEM retained market-power safeguards

The move to I-SEM changed how vertically integrated suppliers could exercise market power, but it did not remove the underlying concentration concerns. Regulators therefore retained targeted safeguards, including the Bidding Code of Practice, market monitoring, Directed Contracts and vertical ring-fencing between ESB's generation and retail businesses.

These measures focused on specific risks: discriminatory contracting, information advantages, insufficient forward liquidity and the potential for dominant generators to influence energy or capacity-market outcomes. Regulators treated market integration and interconnection as complements to these safeguards, not substitutes for them.

ESB is the key focus of separation

In the Republic of Ireland, ESB retained substantial generation and retail positions, giving regulators reason to preserve ring-fencing and Directed Contract arrangements rather than permit unrestricted vertical reintegration.



A2.8 Ireland and Northern Ireland SEM (continued)



The Ireland and Northern Ireland SEM combined aspects of accounting and functional separation with regulatory transparency and liquidity measures.

Northern Ireland has a different legacy structure. Power NI operated as the incumbent retail supplier, while its separately regulated Power Procurement Business (PPB) held long-term generation contracts established during the privatisation of Northern Ireland Electricity and sold the contracted output into the SEM. Although Power NI later became part of the generation-owning Energia Group, the PPB was a Northern Irish legacy procurement business, not a generation portfolio directly comparable with ESB's. The Irish framework therefore applied different separation arrangements to national incumbents arising from distinct structures in the two jurisdictions.

Ring-fencing of generation and supply

Ring-fencing obligations applied to both ESB and Energia (formerly Viridian), requiring separation of generation and supply activities within each group.

The measures comprised functional and accounting separation:

- separate management structures with independent decision-making for generation and retail businesses
- separate financial accounts with prohibitions on cross-subsidies between affiliated generation and retail businesses
- restrictions on sharing commercially sensitive information between ring-fenced units
- requirements that transactions between affiliated entities occur on arm's-length terms.

A 2020 SEM discussion paper confirmed that ring-fencing of ESB and Energia remained part of the market-power framework.¹⁴⁴

Economic Purchase Obligation

An Economic Purchase Obligation (EPO) was historically applied to both ESB Customer Supply and NIE Energy Supply. The EPO required each incumbent retail supplier to purchase electricity from the pool at the prevailing pool price rather than through preferential bilateral arrangements with affiliated generators.

This ensured that incumbent retailers did not gain a procurement advantage from their group affiliation and that the regulated retail tariff reflected transparent pool-based costs rather than internal transfer pricing.

Directed contracts and CFDs

The SEM Committee directed ESB Power Generation to offer Contracts for Differences (CFDs) to independent suppliers on regulator-determined terms.

These directed contracts served two functions. They provided independent retailers with hedge access that would otherwise require bilateral negotiation with the dominant generator, and they reduced ESB's incentive to exercise market power by committing output at administered prices.

Separately, the NIE Energy PPB offered non-directed CFDs arising from its Generator Unit Agreements with Northern Ireland power stations. These were not regulatory directions in the same sense as ESB's directed contracts, but reflected PPB's existing procurement obligations.

Key lessons

- The Irish arrangements combine aspects of functional separation (ring-fencing of generation and supply within ESB and Energia, with separate management, information barriers, and arm's-length affiliate requirements), accounting separation, with regulated transparency and liquidity measures (directed contracts, EPO, Bidding Code of Practice, market monitoring, and the Capacity Remuneration Mechanism under I-SEM).
- The combination is designed to address both ownership separation concerns and ongoing conduct management.



A2.8

Ireland and Northern Ireland SEM (continued)

Key market institutions

Commission for Regulation of Utilities (CRU): Regulates electricity and gas networks, generation and retail markets, tariffs, licences and industry standards.

Department of the Environment, Climate and Communications (DECC): Sets national energy and climate policy, including climate targets.

Hedge market structure

Mainly bilateral/OTC forwards and corporate PPAs; limited exchange-traded futures (shallow market).



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

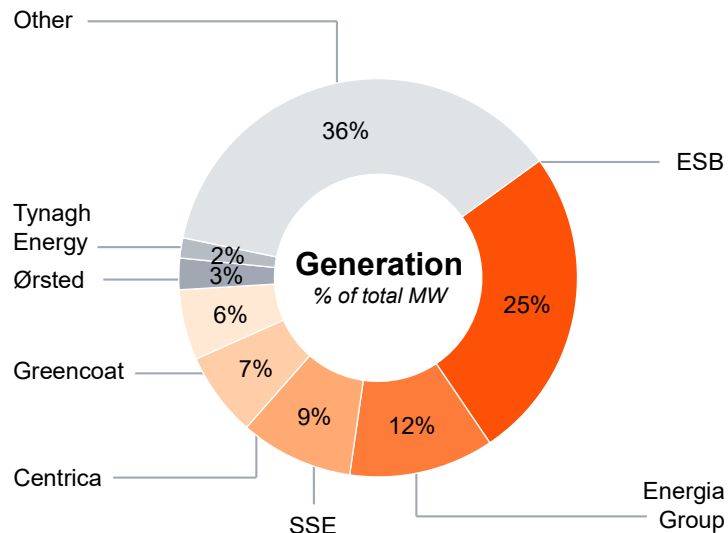


Retail
Competitive

Population no.
7.4 million

No. of connections
3.4 million

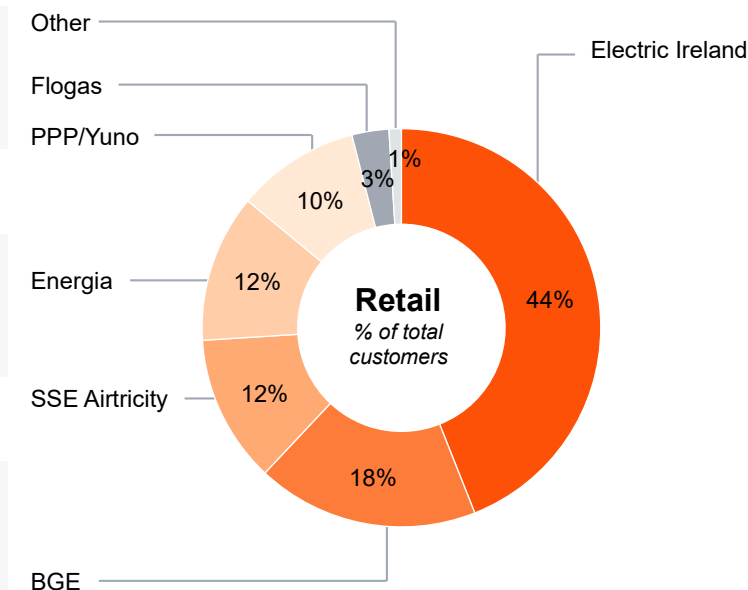
Average wholesale price
NZ\$235/MWh



No. of retailers
15

Average retail bill
NZ\$254/month

Average retail price
NZ\$0.72/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation and retail market share as at 2024 and 2023, respectively; FX rate used: 1 EUR = 1.99 NZD

Source(s): Commission for Regulation of Utilities (CRU), Central Statistics Office (CSO), Sustainable Energy Authority of Ireland (SEAI), Single Electricity Market Operator (SEMO), Selectra, Irish Statute Book, company disclosures

A2.9

Italy

Italy has not imposed generation-retail separation. Its dual regulated-liberalised market structure produced persistent consumer inertia, illustrating market-design issues rather than separation effects

Italy provides evidence on a market where the former state monopolist (ENEL) has been partially disaggregated but generation-retail separation was not imposed, and where a dual-market structure (regulated alongside liberalised) produced substantial consumer inertia that frustrated the competitive intent of market opening.

Market structure and the Bersani Decree

ENEL operated as a vertically integrated state-owned monopoly from 1962 until the 1999 Bersani Decree, which unbundled generation, transmission, distribution and retail into separate activities. Transmission was transferred to Terna as an independent TSO, while ENEL retained substantial generation capacity and a dominant retail position, with its regulated retail branch present in 91 per cent of Italian municipalities.

Dragotto et al. (2021) note that full residential customer choice became available from July 2007. However, liberalisation did not immediately translate into widespread movement away from incumbent and regulated supply arrangements.

Consumer inertia and the regulated market

A distinctive feature of the Italian experience was the persistence of the regulated retail market, servizio di maggior tutela, alongside the liberalised market. Consumers who did not actively choose a competitive supplier remained on quarterly ARERA-set prices, creating a default for less engaged customers.

Dragotto et al. (2021) found that, by September 2020, 44 per cent of households and 32 per cent of business consumers remained on

regulated contracts despite more than a decade of choice. Annual switching rates were only 3 to 4 per cent, demonstrating persistent consumer inertia following market opening.

Dragotto et al. (2021) found that higher market concentration significantly deters switching from the regulated to the liberalised market.

The regulated market phased out for small and medium enterprises in January 2021. Household phase-out was planned for 2024.

The persistence of regulated pricing created a benchmark that competitive suppliers had to undercut to attract customers, while simultaneously reducing the pool of actively engaged consumers.

Regulatory approach and classification

No mandated generation-retail separation was imposed in Italy.

ARERA provides ongoing regulatory oversight of pricing, switching, and market conduct.

The dual market structure with regulated and liberalised segments was the primary policy tool, though it produced the unintended consequence of consumer inertia rather than active engagement with competition.

Phase-out and subsequent market development

From July 2024, non-vulnerable households that had not selected a competitive offer were automatically transferred from maggior tutela to a transitional service, with suppliers selected through regional auctions. Regulated supply remains available for vulnerable households.

By the end of 2024, 76.3 per cent of domestic customers were supplied through the liberalised market. Household switching also increased materially, to 23.8 per cent, with ARERA noting that the withdrawal of protected arrangements likely encouraged consumers to search for alternative suppliers. ENEL nevertheless remained the largest electricity group, accounting for 39% of overall sales, while concentration in the liberalised market continued to decline.

Key lessons

- Formal market opening does not guarantee active competition. Even with full customer choice, incumbent advantage and consumer inertia can slow migration to competitive offers, particularly where a protected / default market remains alongside the liberalised market.
- Market design can matter as much as ownership structure. Italy retained generation-retail integration, so its experience provides limited evidence on separation itself. It is more informative about how default arrangements, concentration and switching frictions affect retail competition.
- Transitional protections can preserve incumbent advantages. ARERA found that more than half of customers leaving the protected market chose the same supplier or corporate group, indicating that liberalisation does not necessarily translate into effective competitive pressure.

Italy, New Zealand

No separation requirements

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.9

Italy

Key market institutions

Regulatory Authority for Energy, Networks and Environment (ARERA): Regulates network tariffs, market conduct and consumer protection and oversees electricity and gas markets.

Terna: Operates electricity transmission system and balancing market.

Energy Markets Operator (GME): Manages organised wholesale electricity markets.

Hedge market structure

Via OTC forwards, exchange futures and power purchase agreements; liquidity moderate, smaller entrants face collateral/access constraints.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

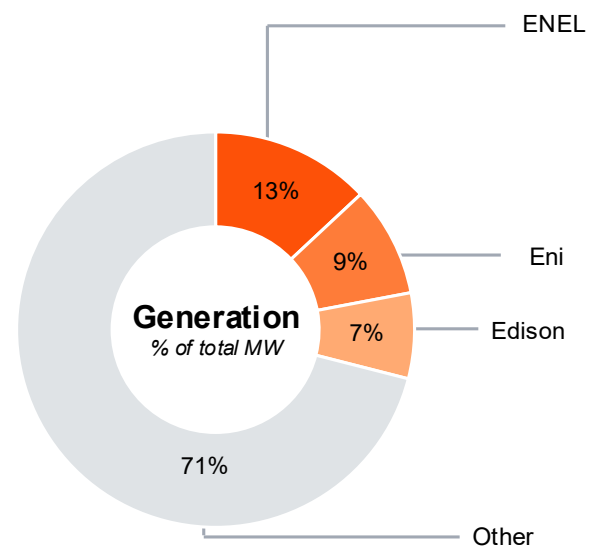


Retail
Competitive

Population no.
58.9 million

No. of connections
30.5 million

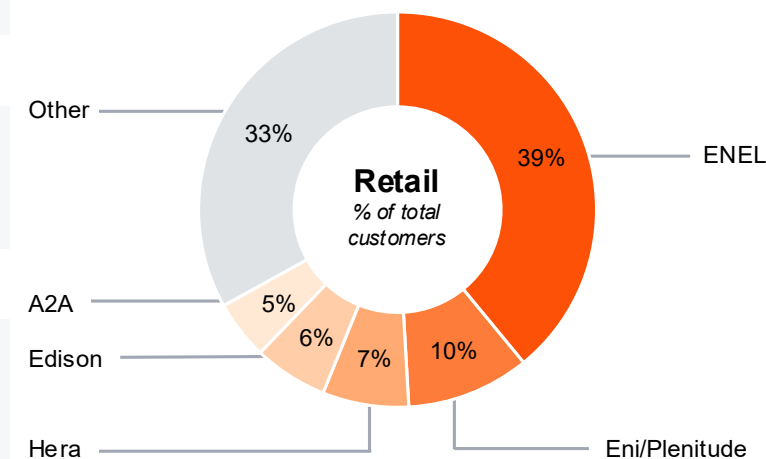
Average wholesale price
NZ\$231/MWh



No. of retailers
481

Average retail bill
NZ\$140/month

Average retail price
NZ\$0.62/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation and retail market share as at 2024; FX rate used: 1 EUR = 1.99 NZD

Source(s): Italian Regulatory Authority for Energy (ARERA), Selectra, Enel, European Network of Transmission System Operators for Electricity (ENTSO-E), company disclosures

A2.10

Netherlands



The Netherlands achieved competitive discipline through interconnection and market coupling rather than generation-retail separation.

The Netherlands demonstrates that competition can be achieved through interconnection and market coupling rather than domestic ownership restructuring. Its experience provides an alternative path to competitive discipline that does not require separation or strong regulatory intervention. However, due to interconnection with other European markets, comparisons to the Netherlands may be less relevant for New Zealand.

Generation-retail structures

Dutch electricity policy did not mandate any particular relationship between generation and retail. Several incumbent generators were acquired by foreign companies during liberalisation (Essent by RWE, Nuon by Vattenfall), introducing internationally integrated energy companies into the domestic market.

No single dominant vertically integrated incumbent comparable to ESB (Ireland) or EDF (France) emerged. The market features multiple competing participants of moderate size.

Competition through interconnection and market coupling

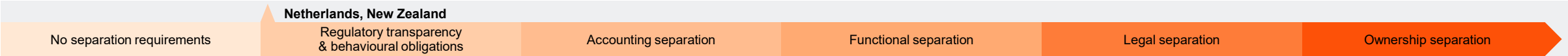
The Dutch experience suggests that interconnection and access to neighbouring generation were more important to wholesale competition, and independent retailers' procurement options, than changes in domestic ownership or generation portfolios.

The Netherlands is connected to Germany, Belgium, Great Britain, Denmark and Norway. It progressively integrated its day-ahead market through regional market coupling, culminating in the North-Western Europe price-coupling arrangement in 2014. These arrangements allocate cross-border transmission capacity alongside electricity trades, allowing imports to respond efficiently to relative prices.

Mulder and Schoonbeek (2013) found that market-integration events, including new interconnectors and coupling arrangements, had approximately five times the effect on competition of firm-level events such as entry, closures and generation-portfolio changes.¹⁶² Competition was measured using the Residual Supply Index (whether demand can be met without the largest supplier; values below one indicate that the supplier is pivotal).

Mulder's subsequent analysis found that these structural improvements were accompanied by more competitive wholesale outcomes.¹⁶⁴ The weighted average Lerner Index (the percentage by which price exceeds estimated marginal cost, with a lower value indicating less market power) during super-peak hours fell from 23% in 2006 to 3% in 2011. Mulder and Schoonbeek also found that declining residual demand, driven by the post-2008 downturn and growth in decentralised generation, was approximately as important as market integration in reducing market-power concerns. Increased competition was therefore associated with greater cross-border access, lower demand faced by centralised generators and more competitive bidding.

Interconnection increases the generation available to meet Dutch demand and gives independent retailers access to supply beyond domestic incumbent portfolios. Market coupling directs scarce cross-border capacity towards higher-priced markets, reducing domestic generators' residual demand and ability to become pivotal. The benefit nevertheless depends on available transmission capacity, efficient market coupling and the competitive structure of neighbouring markets: links to competitive markets may constrain domestic market power, while links to concentrated markets may primarily improve price convergence.



A2.10

Netherlands (continued)

The Netherlands achieved competitive discipline through interconnection and market coupling rather than generation-retail separation.

Key lessons

- Dutch wholesale competition improved materially between 2006 and 2011, driven primarily by greater market integration and lower residual demand rather than changes in firm ownership or generation portfolios.
- Interconnection, market coupling and netting increased the 2011 RSI by 0.26, versus -0.05 from firm-level changes; lower residual demand added 0.35.
- Mulder's subsequent analysis similarly found that the weighted-average Lerner Index fell from 23% in 2006 to 3% in 2011 during super-peak hours.
- The Dutch experience indicates that access to generation outside the domestic market can provide competitive discipline without restructuring domestic generation ownership. New Zealand has no cross-border interconnection, and interconnection only strengthens competition where sufficient capacity connects to competitively structured markets.



Netherlands, New Zealand

No separation requirements

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.10

Netherlands (continued)

Key market institutions

Ministry of Economic Affairs and Climate Policy: Sets national energy policy, legislation and the climate transition strategy.

Authority for Consumers and Markets (ACM): Enforces electricity and gas market rules and regulates network tariffs and access conditions.

Hedge market structure

Futures on European Energy Exchange and OTC PPAs; good liquidity short-term, thinner long-term.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

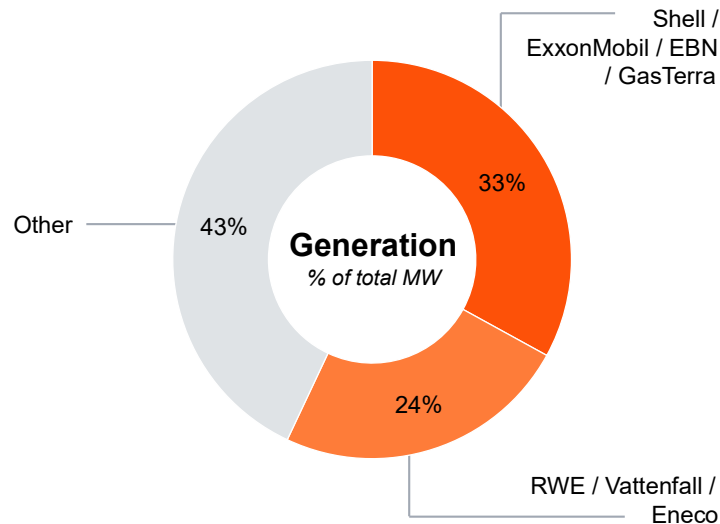


Retail
Competitive

Population no.
18.1 million

No. of connections
8.5 million

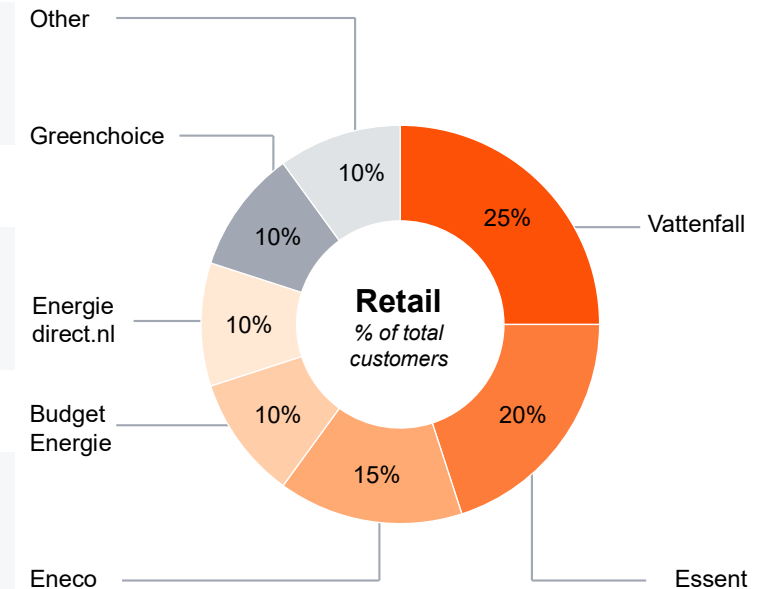
Average wholesale price
NZ\$173/MWh



No. of retailers
60

Average retail bill
NZ\$115/month

Average retail price
NZ\$0.49/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation market share as at 2024; FX rate used: 1 EUR = 1.99 NZD

Source(s): International Energy Agency (IEA), Authority for Consumers and Markets (ACM), Netherlands Enterprise Agency (RVO), Government of Netherlands, Central Bureau of Statistics (CBS), Eurostat, TenneT, European Power Exchange (EPEX Spot), Enerdata, Keuze.nl

A2.11

Nordic Markets (Nord Pool)



The Nordic model disciplines integrated firms through cross-border wholesale competition and liquid markets rather than separation – an approach unavailable to New Zealand.

Regional market

The Nordic electricity market represents an early and sustained experiment in cross-border wholesale market integration.

Nord Pool was established in 1993 as a Norwegian power exchange (Statnett Marked), expanded to include Sweden in 1996 (creating the first multinational electricity exchange), Finland in 1998, and Denmark by 2000.

The market operates across four countries with distinct national retail markets, generation mixes, and ownership structures, unified by a common wholesale trading platform and extensive physical interconnection.

All available transmission capacity between price zones was allocated to the day-ahead market from an early stage, enabling generators in one country to compete directly with those in neighbouring systems.

This design created a regional generation and wholesale market substantially larger than any individual national system, expanding the effective number of competitive participants beyond what domestic market structure alone would provide.

Market coupling prioritised

The market connects generation portfolios that naturally complement one another. Norway’s hydro reservoirs can increase or decrease output quickly, helping balance variable wind generation in Sweden and Denmark. Hydro can conserve water when wind output is high and provide flexible generation when wind falls. Denmark’s reliance on imports from Norway and Sweden during low-wind periods illustrates the value of this regional resource mix.

No Nordic country mandates generation-retail separation. That approach would not be practical alongside Nord Pool, which organises competition across a shared regional wholesale market rather than within separate national systems. Retailers can source electricity across borders, while integrated utilities based in neighbouring countries can serve the same customers.

A national mandate to separate retail and generation would therefore constrain domestic firms without removing vertically integrated competitors from the wider Nord Pool market. In a region where retail margins are thin and wholesale price exposure is significant, firms also retain a strong incentive to support their retail positions with generation or other asset-backed hedges.



Nord Pool		New Zealand				
No separation requirements		Regulatory transparency & behavioural obligations	Accounting separation	Functional separation	Legal separation	Ownership separation

A2.11 Nordic Markets (Nord Pool) (continued)



The Nordic model disciplines integrated firms through cross-border wholesale competition and liquid markets rather than separation – an approach unavailable to New Zealand.

National differences in ownership and generation mix

Significant differences in ownership structure and generation mix exist across the four Nordic countries.

- In Norway, regional groups such as Å Energi and Lyse combine generation and retail. Statkraft mainly combines generation, trading and industrial supply, rather than mass-market household retail.
- In Sweden, of the three largest generators, Vattenfall and Fortum combine generation and retail, whilst Uniper is mainly a generator. Together these three hold approximately 85% of generation capacity, spanning hydro, nuclear, wind, and thermal.
- In Finland, the market is partly vertically integrated, with industrial self-generation significant and several utilities combining generation, distribution, and retail. Generation and distribution ownership has historically been substantially public or municipal (VATT, Electricity Market Reform in Finland, 2003, p. 22).
- In Denmark, the transition from coal and gas to wind power has transformed the generation landscape, with local integration and municipal ownership historically significant.

Finnish reforms of the 1990s explicitly maintained the permissibility of vertical integration, reflecting a policy judgment that the small size of the Finnish market and the industrial structure of its generation (including substantial paper and pulp industry self-generation) made separation impracticable or unnecessary.

Swedish and Norwegian structures similarly retain vertically integrated or local integrated utility models alongside the national retail market.

Evidence on liquidity, price discovery and market functioning

The Nordic market has historically demonstrated high wholesale market liquidity and effective price discovery, attributable to multiple reinforcing features rather than any single design element.

CEPA identified that significant volumes were submitted through the pool, with larger generators making gross-bidding commitments; more than 20 parties acted as market makers in the financial market; transparency rules were enforced regarding production, consumption, and reservoir levels; and extensive internal and external interconnection created diversified trading opportunities across multiple price zones.

The combination of gross participation, interconnection, transparency, diverse participants, and the system-price reference collectively supported the market's liquidity and price-discovery performance. Attributing outcomes to any single feature in isolation would overstate the causal role of market design.

Retail competition and innovation

National retail markets operate with consumer choice, supplier switching, and diverse tariff offerings.

The Nordic retail market has been characterised by relatively high switching rates by international standards, particularly in Norway and Sweden, with a range of fixed-price, variable-price, and spot-price-pass-through products available to residential and commercial consumers.

The existence of liquid wholesale and financial markets enabled non-integrated retailers to secure supply and manage risk without owning generation, supporting a relatively competitive retail landscape.

Nord Pool

No separation requirements

New Zealand

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.11 Nordic Markets (Nord Pool) (continued)

The Nordic model disciplines integrated firms through cross-border wholesale competition and liquid markets rather than separation – an approach unavailable to New Zealand.

Hydro flexibility, dry-year risk and scarcity

Hydroelectric generation provides substantial flexibility to the Nordic system, with storage reservoirs enabling inter-seasonal and inter-annual energy management.

However, hydro dependence also exposes the system to dry-year scarcity risk, where low inflows reduce available generation and drive extreme price outcomes.

The Nordic market is principally energy-only in design, with strategic reserves (capacity reserves held outside the market by system operators) providing a backstop during scarcity periods rather than a standing capacity payment mechanism.

Investment adequacy and generation adequacy debates have periodically arisen, reflecting uncertainty about whether energy-only price signals provide sufficient incentive for new investment, particularly in non-hydro thermal or renewable capacity.

EPADs (Electricity Price Area Differentials) are an important feature of Nordic hedging markets. They allow participants to hedge the difference between the Nordic system price and the price in their local bidding zone, complementing system-price futures and forwards. Their effectiveness therefore depends on sufficient liquidity in both system-price contracts and the relevant EPAD market.

Post-energy-crisis deterioration in financial-market liquidity

The 2024 Nordic Energy Research evaluation identifies significant deterioration in the functioning of the Nordic financial electricity market⁹⁴ following the 2021 to 2022 energy crisis.

System-price and area-price correlation weakened substantially, particularly between southern Norway/Sweden and the Nordic system price, driven by sustained congestion and divergent price outcomes across bidding zones.

Financial liquidity declined and hedging premiums increased, reflecting reduced willingness of market participants to trade system-price-referenced instruments when the basis risk (the gap between system price and area price) had become large and unpredictable.

The evaluation notes possible competitive effects where vertically integrated retailers, who can hedge internally through their generation portfolios, compete with independent retailers who rely on financial markets that have become less liquid and more costly.

This development is substantial because the Nordic model's historically supportive conditions for non-integrated retail competition may have partially deteriorated, creating hedging asymmetries similar to those documented in other jurisdictions with vertically integrated incumbents.

Key lessons

- Nordic evidence highlights the potential benefit of vertical integration during periods of high volatility (e.g. 2021–22 energy crisis). This highlights that historically supportive conditions for independent retail competition might have partially deteriorated.
- The 2024 Nordic Energy Research evaluation considered well-functioning hedge markets a more direct response to the advantages of integration than unbundling.
 - This resulted in Sweden and Norway introducing TSO-backed EPAD (Electricity Price Area Differential) auctions to increase hedge liquidity and Finland proposing financial support for exchange-based market making.
- Unlike the Nordic countries, New Zealand cannot supplement domestic portfolios by drawing on large neighbouring electricity systems.

Nord Pool

No separation requirements

New ZealandRegulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

[Return to jurisdictions overview \(Section 5.2\)](#)

A2.11

Denmark

Key market institutions

Danish Utility Regulator (DUR): Regulates network tariffs and methodologies, monitors retail markets and operates the Elpris.dk price-comparison platform.

Danish Energy Agency (DEA): Oversees security of supply, plans electricity networks above 100 kilovolts and approves Energinet's major investments.

Hedge market structure

Financial forwards, commercial exchanges and Long-Term Transmission Rights (LTTRs); Danish liquidity remains thin.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

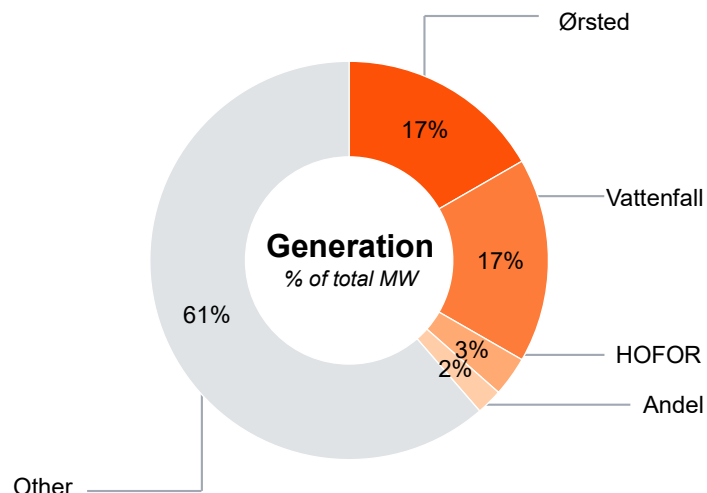


Retail
Competitive

Population no.
6.0 million

No. of connections
3.3 million

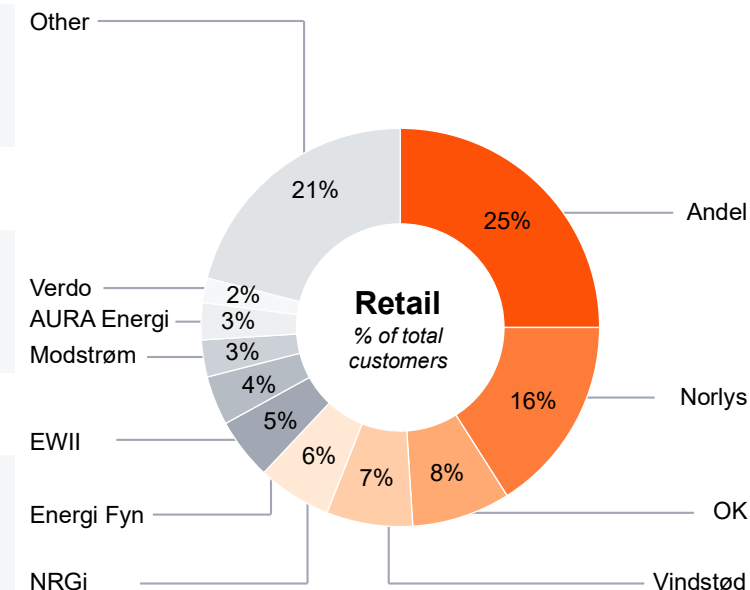
Average wholesale price
NZ\$163/MWh



No. of retailers
64

Average retail bill
NZ\$197/month

Average retail price
NZ\$0.68/kWh



Note(s): All figures as at 2025 unless stated otherwise; Retail market share as at 2024; FX rate used: 1 EUR = 1.99 NZD. No. of connections is assumed to be equivalent to no. of metering points.

Source(s): Danish Utility Regulator (DUR), Nordic Energy Research, Enerdata, Danish Energy Agency, Energi Data Service, Energinet, Statbase, Selectra, Statistics Denmark, Energy-Charts, Retsinformation, energybrokers.co.uk, Odyssee-Mure, company disclosures

[Return to jurisdictions overview \(Section 5.2\)](#)

A2.11

Finland

Key market institutions

Energy Authority Finland: Regulates electricity and gas networks, oversees wholesale markets, monitors market performance and issues licences.

Ministry of Economic Affairs and Employment: Sets national energy legislation and policy and oversees security-of-supply strategy.

Hedge market structure

Via European Energy Exchange futures, area differentials, bilateral deals and Finland-Estonia transmission rights; liquidity uneven.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

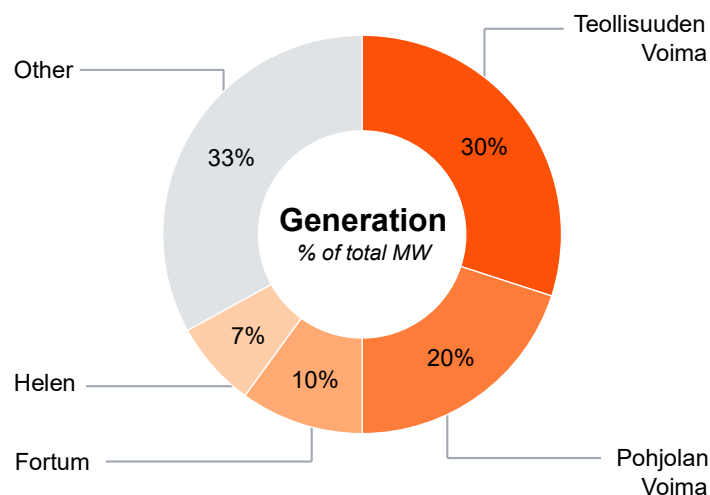


Retail
Competitive

Population no.
5.7 million

No. of connections
3.8 million

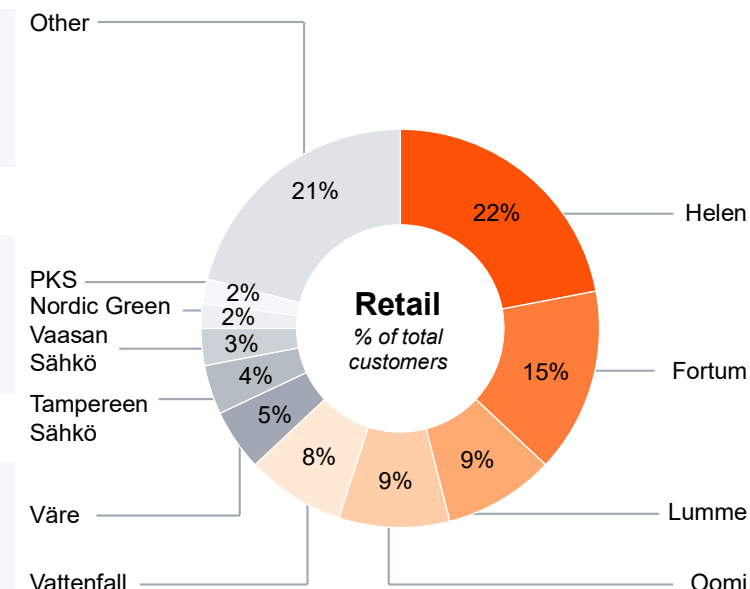
Average wholesale price
NZ\$81/MWh



No. of retailers
49

Average retail bill
NZ\$188/month

Average retail price
NZ\$0.45/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation and retail market share as at 2024; FX rate used: 1 EUR = 1.99 NZD; Number of connections is assumed to be equivalent to the number of customers.

Source(s): Energy Authority Finland, Nordic Energy Research, Ministry of Economic Affairs and Employment, Statistics Finland, Selectra, company disclosures

[Return to jurisdictions overview \(Section 5.2\)](#)

A2.11

Norway

Key market institutions

Norwegian Water Resources and Energy Directorate (NVE): Regulates electricity markets and networks, including licensing, grid tariffs, market rules and consumer protection.

Ministry of Energy: Sets national energy policy and legislation under the Energy Act.

Hedge market structure

Derivatives markets (Nasdaq/Euronext futures, OTC forwards, PPAs); deep liquidity in Nordic power contracts; market open to all participants.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly



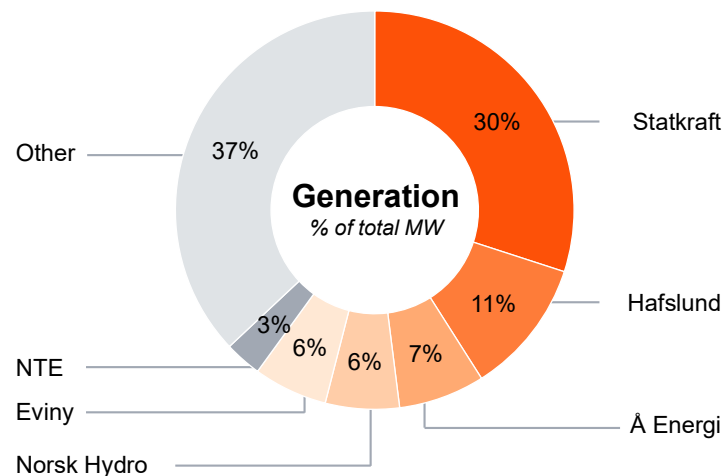
Retail
Competitive

Population no.
5.6 million

No. of retailers
69

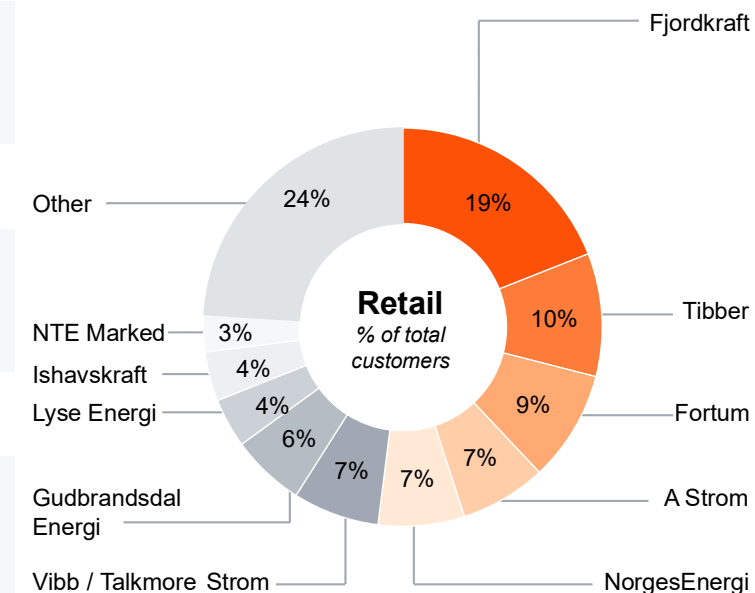
No. of connections
3.0 million

Average wholesale price
NZ\$102/MWh



Average retail bill
NZ\$102/month

Average retail price
NZ\$0.39/kWh



Note(s): All figures as at 2025 unless stated otherwise; Retail market share as at 2023; FX rate used: 1 NOK = 0.18 NZD;

Source(s): Norwegian Government, Nordic Energy Research, Energy Facts Norway (Energifakta Norge), Statnett, Statistics Norway, Elhub, Nord Pool, Norwegian Energy Regulatory Authority (NVE), Selectra, ENTSO-E

[Return to jurisdictions overview \(Section 5.2\)](#)

A2.11

Sweden

Key market institutions

Swedish Energy Markets Inspectorate (Ei): Regulates electricity and gas markets, oversees network tariffs and market rules, and protects consumers.

Swedish Energy Agency (Energimyndigheten): Implements national energy policy, supports the energy transition and produces official energy statistics.

Hedge market structure

Via bilateral forwards and exchange-traded futures. Markets are deep (major utilities/liquidity) and open to all qualified participants.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

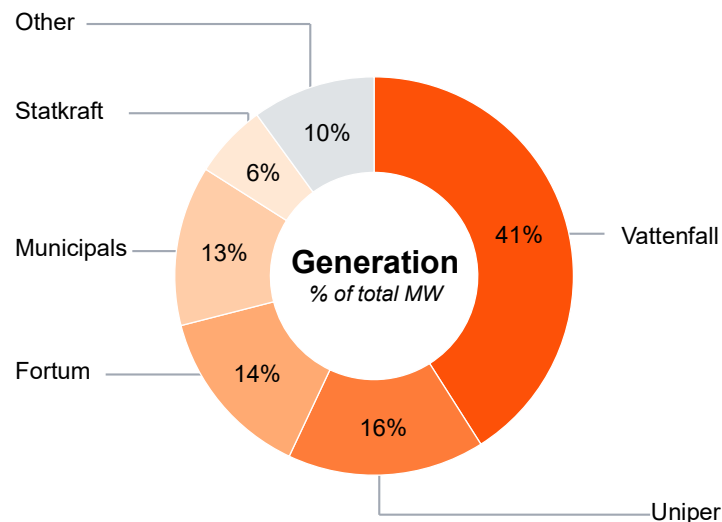


Retail
Competitive

Population no.
10.6 million

No. of connections
5.6 million

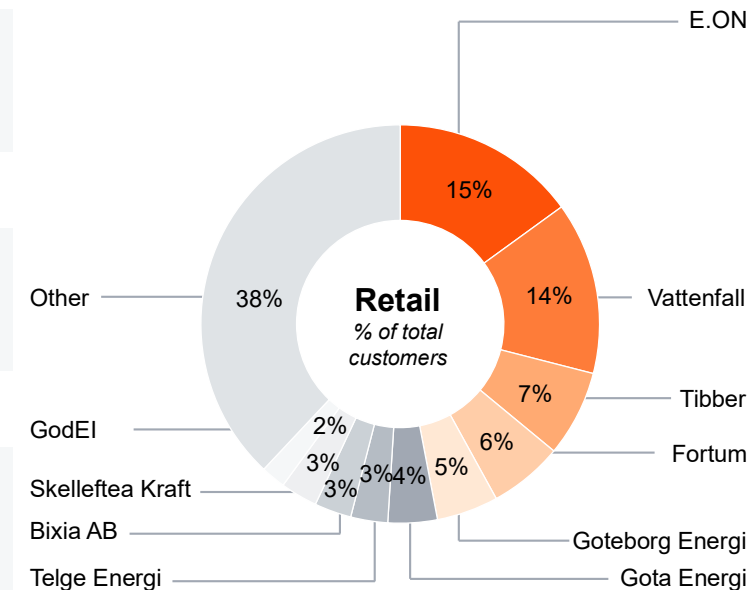
Average wholesale price
NZ\$70/MWh



No. of retailers
140

Average retail bill
NZ\$376/month

Average retail price
NZ\$0.53/kWh



Note(s): All figures as at 2025 unless stated otherwise; Retail market share as at 2023; FX rate used: 1 SEK = 0.18 NZD

Source(s): Government Offices of Sweden, Swedish Energy Markets Inspectorate (Ei), Swedish Energy Agency, Nordic Energy Research, International Energy Agency (IEA), Nord Pool, Statistics Sweden (SCB), Council of European Energy Regulators (CEER), European Network of Transmission System Operators for Electricity (ENTSO-E), Sveriges Riksdag, Euronext, Energy-Charts

A2.12

Spain/Portugal



The MIBEL experience demonstrates that managed integration is viable in the Iberian context, with substantial interconnection, multiple large participants, and regulatory supervision.

The Iberian electricity market (MIBEL) provides evidence on a jurisdiction that permitted vertical integration between generation and retail despite high market concentration.

Market formation and design

MIBEL became operational in 2007, integrating the Spanish and Portuguese wholesale markets. It combines common day-ahead and intraday markets with bilateral and forward contracting. When the Spain-Portugal interconnector is unconstrained, participants face a common Iberian price; congestion produces separate national prices.

Spain’s 1997 Electricity Sector Act separated regulated networks from competitive activities but did not require ownership separation between generation and retail. Large integrated utilities could therefore retain generation and customer portfolios within the same corporate group.

Competition developed from a high concentration starting point

Concentration was high at liberalisation. Endesa and Iberdrola controlled around three-quarters of Spanish generation, while EDP dominated generation and retail in Portugal.

Spain and Portugal sought to strengthen competition through market opening, regional integration, network access, regulatory oversight and new generation entry rather than breaking up the integrated incumbents. Concentration subsequently declined as renewable developers entered, incumbent portfolios diversified and cross-border trading expanded.

Integration changed market power incentives

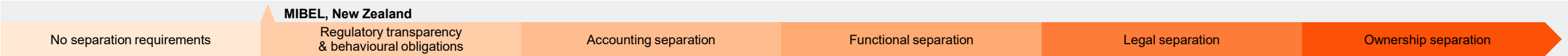
Kühn and Machado found that vertical integration reduced incentives to raise Spanish spot prices. An integrated generator that was also a net purchaser for its retail customers bore part of the cost of higher wholesale prices and could instead have an incentive to increase generation and depress the pool price.

However, integration did not remove market power. Net sellers could underproduce while net buyers overproduced, allowing higher-cost generation to displace lower-cost supply. Muted average prices therefore did not necessarily indicate efficient or fully competitive outcomes.²⁰⁹

Geographic complementarity supported renewable integration

The MIBEL regulators found that Spain’s geographically dispersed wind fleet was less volatile and more predictable than Portugal’s, where output was more exposed to common Atlantic weather conditions. Aggregating renewable generation across a wider area therefore reduced forecasting and balancing concerns.

Interconnection also allowed different Iberian resource conditions to complement one another. Changes in Portuguese hydro availability influenced cross-border flows and price differences, while the two markets recorded the same wholesale price for more than 90% of hours between 2010 and 2015. The regulators concluded that stronger links with France would extend these benefits by allowing Iberian renewable surpluses to reach a wider market and improve integration when renewable availability differed across regions.



A2.12

Spain/Portugal (continued)



The MIBEL experience demonstrates that managed integration is viable in the Iberian context, with substantial interconnection, multiple large participants, and regulatory supervision.

Block of further integration in Portugal

In 2004, the European Commission blocked the merger of EDP with Gás de Portugal (GDP) due to EDP's market dominance in Portuguese electricity generation and retail. The merger risked strengthening that dominance by removing a potential electricity competitor and giving EDP influence over the gas supplies needed by rival generators.¹⁸⁹

At that time, the Commission concluded that the projected Spain-Portugal interconnection capacity was unlikely to allow effective integration in the near term, with congestion expected to persist for a significant proportion of the time.

The decision did not require EDP to separate generation from retail, but it did block further vertical expansion that could reinforce foreclosure risks and entrench the incumbent's position.

Natural hedge recognised as an advantage

The CNMC states that vertically integrated groups benefit from a natural hedge, because losses from wholesale price movements in one group subsidiary may be offset by gains in another. It notes that non-integrated generators must instead use financial contracts that may be more costly and are limited to the maturities available in forward markets.^{207 [1]}

Kühn and Machado provide supporting empirical evidence that Spanish firms jointly optimised their generation and retail positions. However, they also found that this could create productive inefficiencies, so the natural hedge is a risk-management advantage rather than evidence that integration is competitively benign.^[2]

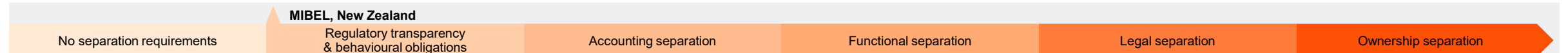
Spanish VPP market-making

From 2007, ENDESA and Iberdrola were required to hold VPP (Virtual Power Plant) auctions, offering hourly call options on generation capacity to third-party retailers and traders. The VPP market-making mechanism provides liquidity without separation.

It is functionally similar to France's ARENH and Ireland's directed contracts, sharing the common design principle of compelling dominant generators to make capacity available to competitors on regulated or market-based terms.



- [1] MIBEL Board of Regulators. (2018, March). *Integration of renewable generation and cogeneration in MIBEL and in the operation of their electrical systems: Executive summary*.
- [2] Kühn, K.-U., & Machado, M. P. (2004). *Bilateral market power and vertical integration in the Spanish electricity spot market (CEMFI Working Paper No. 0414)*. Centro de Estudios Monetarios y Financieros.



A2.12

Spain/Portugal (continued)



The MIBEL experience demonstrates that managed integration is viable in the Iberian context, with substantial interconnection, multiple large participants, and regulatory supervision.

Competitive effects of Portuguese legacy contracts

Portugal's electricity sector was heavily distorted by extensive legacy guaranteed-price contracts. Power Purchase Agreements (PPAs), Costs for the Maintenance of Contractual Equilibrium (CMEC), and feed-in tariffs covered 82% of installed capacity and 83% of production in 2010.

Only 17% of consumption was traded without price guarantees during 2000 to 2010. Competitive market potential was not expected to reach 33% until the period 2018 to 2023 as legacy contracts expired. These contracts prevented effective competition regardless of ownership structure.

Impact of interconnection on competition

Spain-Portugal interconnection capacity and market coupling have substantially integrated the two wholesale markets. Before 2009, the interconnector was congested for more than half of all hours and Portuguese prices were typically around 10% higher than Spanish prices. By 2024, market coupling produced the same Spain-Portugal day-ahead wholesale price for 93.8% of hours. Market splitting occurred in 6.2% of hours, and the price differential exceeded €2/MWh in only around 1.9% of hours.¹⁸⁶ (ERSE, OMIE)

The evidence suggests that expanded interconnection and efficient market coupling have materially increased the competitive constraint from cross-border supply, reducing Portugal's isolation from the larger Spanish market. However, price convergence should not be treated as a complete measure of competition. It demonstrates effective physical and market integration but does not by itself establish low concentration or the absence of market power across MIBEL.

Key lessons

- MIBEL permitted vertical integration supported by regulatory transparency and conduct measures, for example VPP auctions, regulatory supervision, and price interventions.
- Vertical integration was seen to reduce incentives to raise wholesale prices, and instead could incentivise firms to increase generation and reduce prices. Further to this, it provides risk-management benefits to vertically integrated firms.
- However, vertical integration did not remove market power and was seen to allow higher-cost generation to displace lower-cost supply. It could also contribute to production inefficiencies.
- New Zealand's market differs from MIBEL in two material respects: New Zealand uses a gross pool rather than a net pool and our market is isolated. The MIBEL regulator sought to preserve integration benefits (dampened unilateral incentives, natural hedging, investment coordination) while managing risks through supervision and targeted access measures.

No separation requirements

MIBEL, New Zealand

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.12

Spain

Key market institutions

National Commission on Markets and Competition (CNMC): Oversees electricity and gas markets, network regulation, competition and consumer protection.

Ministry for the Ecological Transition and the Demographic Challenge (MITECO): Sets national energy policy and legislation and manages renewable energy auctions.

Hedge market structure

OMIP futures/forwards/swaps, OTC PPAs; moderate liquidity, access issues for smaller buyers.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

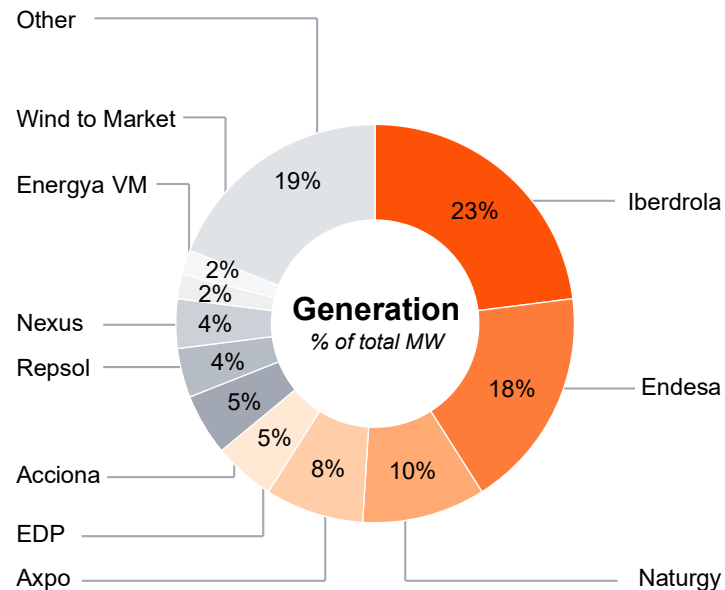


Retail
Competitive

Population no.
49.5 million

No. of connections
30.4 million

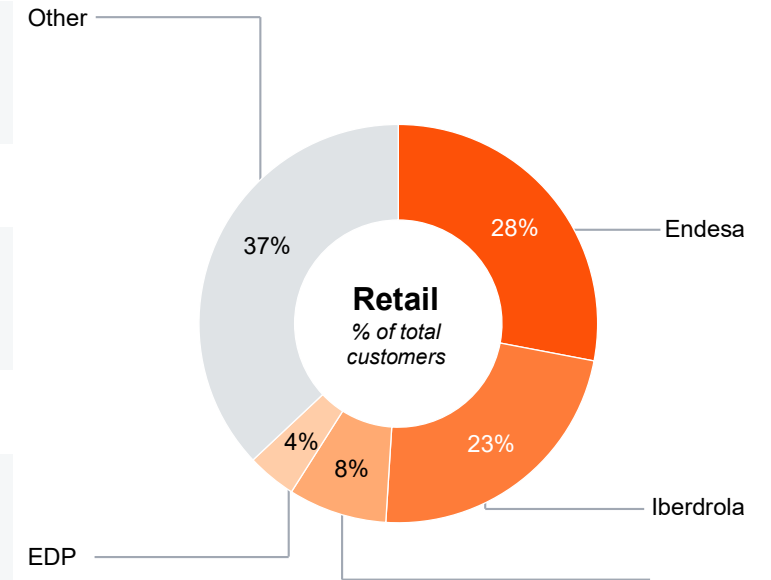
Average wholesale price
NZ\$130/MWh



No. of retailers
445

Average retail bill
NZ\$178/month

Average retail price
NZ\$0.53/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation and retail market share as of 2023 and 2024, respectively; FX rate used: 1 EUR = 1.99 NZD

Source(s): The Spanish National Markets and Competition Commission (CNMC), Red Eléctrica de España (REE), State Agency for the Official State Gazette (BOE), Cinco Días, Lexology, Spanish Statistical Office (INE), Selectra, Endesa, OMIE, Consumers in Action (FACUA)

A2.12

Portugal

Key market institutions

Energy Services Regulatory Authority (ERSE): Regulates energy tariffs, networks, retail market conduct and quality-of-service standards.

Redes Energéticas Nacionais (REN): Operates and balances electricity transmission system.

Iberian Electricity Market (MIBEL): Provides the integrated market for Portugal and Spain.

Hedge market structure

Via OTCs, futures and forwards through OMIP; activity shallower than major European Union hubs.



Generation
Competitive



Transmission
Natural monopoly



Distribution
Natural monopoly

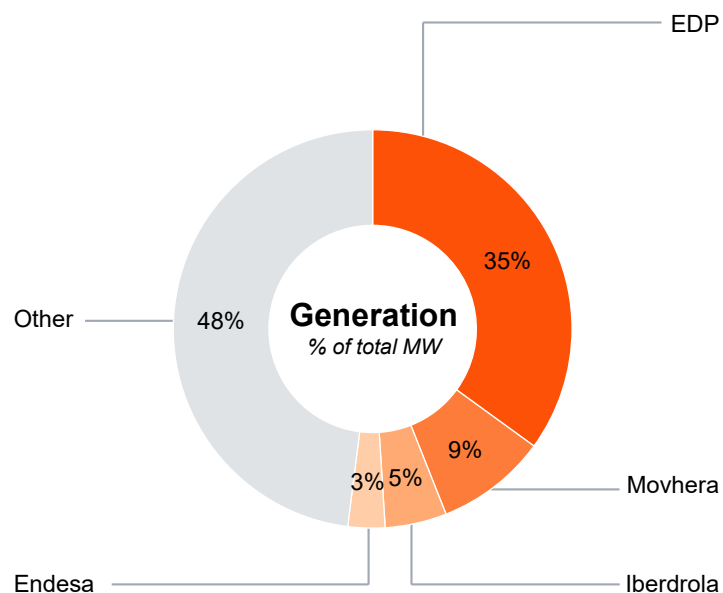


Retail
Competitive,
but concentrated

Population no.
11.4 million

No. of connections
6.5 million

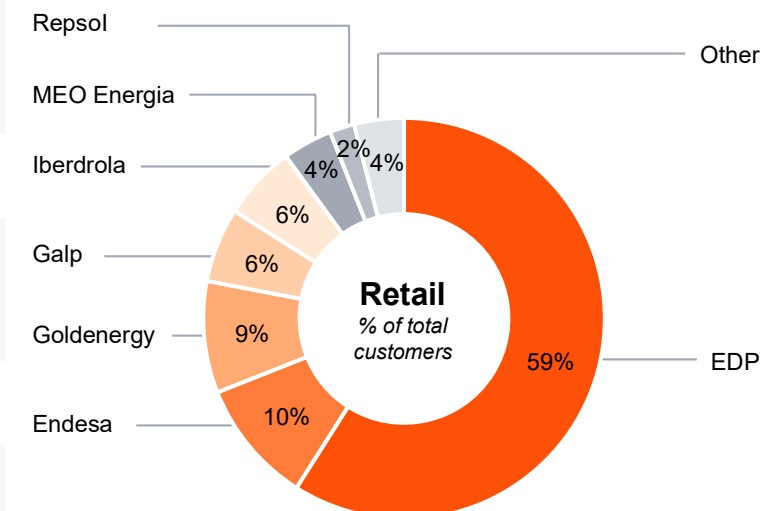
Average wholesale price
NZ\$132/MWh



No. of retailers
40

Average retail bill
NZ\$143/month

Average retail price
NZ\$0.48/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation market share as at 2024. Retail market share by number of customers, liberalised market (ML), Portugal Continental, Sep-25; "Other" = retailers ranked 8th+. FX: 1 EUR = 1.99 NZD.

Source(s): Energy Services Regulatory Authority (ERSE), AP News, Financial Times, Cinco Días, Eurostat, OMIE, Odyssee-Mure, Selectra, Berkshire Hathaway Home Services, company disclosures

A2.13

Singapore



Singapore constrained generator market power and supported the development of retail competition through a transitional vesting contract regime.

Market structure

Singapore operates a competitive wholesale electricity market overseen by the Energy Market Authority (EMA). The market separates competitive activities, including generation and retail, from monopoly aspects – but ultimately does not require generation and retail businesses to have separate owners.

Rather, Singapore has relied on adopting progressively stronger regulatory oversight measures and contractual controls to manage generator market power. Vesting contracts have formed the centrepiece of this approach.

The vesting contract regime

Vesting contracts are directed contracts imposed by the EMA upon generators, requiring them to sell a specified quantity of electricity at an administered price (the vesting price) determined by the EMA with reference to the long-run marginal cost of the most efficient available technology.

The vesting regime was introduced at the inception of Singapore's wholesale electricity market in 2004 as a mechanism to constrain generators' ability to exercise market power.¹⁹⁷

The rationale for vesting contracts rests on the observation that, in a concentrated generation market, incumbents may have the ability and incentive to raise wholesale prices above competitive levels, particularly during periods of high demand. By requiring generators to sell a substantial proportion of their output at the administered vesting price, the regime reduces the volume of energy that generators can withhold from the market or offer at elevated prices. The vesting contract quantities are set at levels intended to eliminate the profitability of strategic withholding.

A critical design feature of Singapore's vesting regime is its initial conception as being transitional. The EMA has consistently described vesting contracts as a tool to support market development during a period in which structural competition is insufficient to constrain market power.

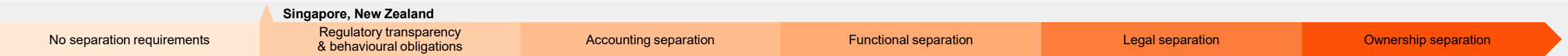
Evolution of the regime and retail liberalisation

The EMA originally expected vesting levels to decline as new generation entered, demand grew and competition strengthened. Vesting quantities were reduced at several points as market conditions improved.

However, the regime did not simply wind down. The EMA continued to review and redesign it as market conditions changed. A 2016 review found that vesting contracts had helped constrain market power and improve dispatch,¹⁹⁹ but also identified drawbacks. The arrangements were administratively complex, created uncertainty through repeated resets and could encourage inefficient plants to remain available to retain vesting allocations.

Singapore ultimately retained the regime. In July 2023, it introduced a new vesting framework covering the period to June 2028,²⁰¹ alongside other measures intended to reduce extreme wholesale price movements. The arrangements have therefore evolved from a temporary market-development measure into an adaptable part of Singapore's wider regulatory framework. Retail competition developed in parallel. Large commercial and industrial customers gained choice first. The Open Electricity Market then extended retail choice to households and small businesses between 2018 and 2019.

Consumers can now choose a competitive retailer or remain with SP Services on the regulated tariff. Singapore has therefore combined retail choice with continued intervention in the wholesale market, using vesting contracts, market surveillance, prudential requirements and price-stabilisation measures to support competition.



A2.13

Singapore (continued)



Singapore constrained generator market power and supported the development of retail competition through a transitional vesting contract regime.

Key lessons

- Singapore shows how mandatory forward contracting can address generator market power without ownership separation. Vesting contracts reduce generators' exposure to spot prices and weaken their incentive to withhold supply.
- The EMA (2016) review found that vesting contracts helped constrain market power and improve dispatch, though it stated that drawbacks included administrative complexity, uncertainty and the potential to encourage inefficient plants to remain available for vesting allocations.
- The arrangements have not operated as a simple temporary measure that steadily disappeared as the market matured. Singapore has repeatedly reviewed, redesigned and extended the regime. The EMA has developed an adaptive regulatory approach rather than using a one-off intervention. This allows companies to retain vertical integration but imposes substantial contractual and regulatory controls.



Singapore, New Zealand

No separation requirements

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Legal separation

Ownership separation

A2.13

Singapore (continued)

Key market institutions

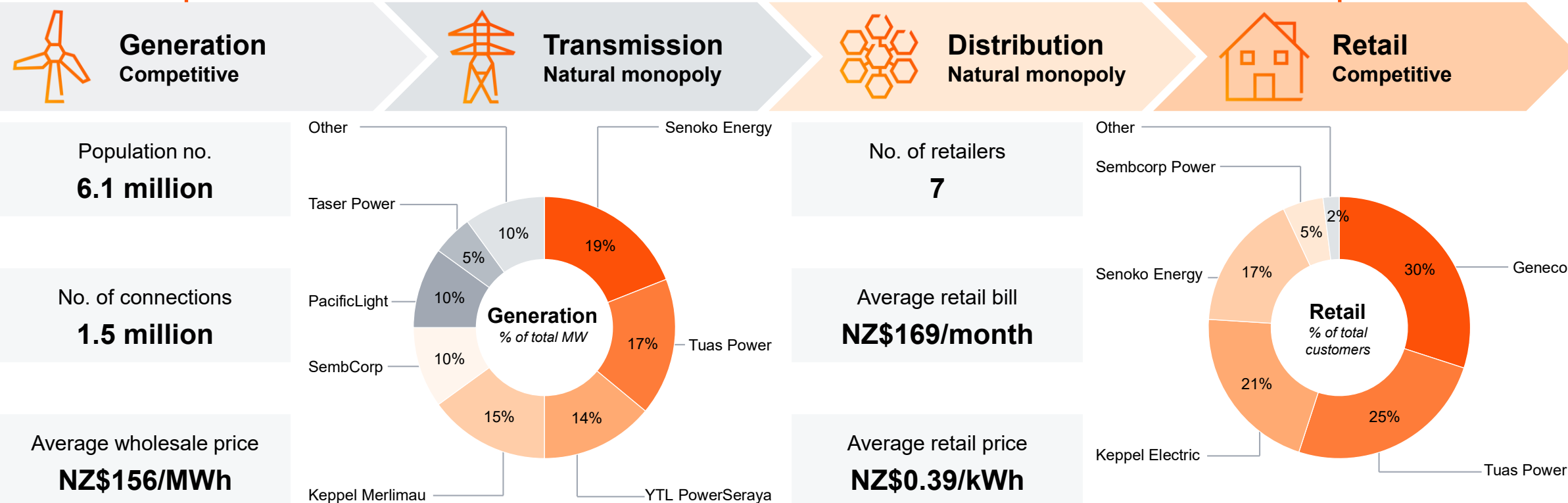
Energy Market Authority (EMA): Regulates the electricity and gas markets, issues licences, sets market rules, oversees reliability and competition, and protects consumers.

Energy Market Company (EMC): Operates the wholesale electricity market.

SP Services: Acts as Market Support Services Licensee, providing support for operations.

Hedge market structure

Via Singapore Exchange futures, bilateral CFDs and EMA-administered vesting contracts; retailers must hedge at least 80% of contracted demand on a rolling 24-month basis.



Note(s): All figures as at 2025 unless stated otherwise; Generation market share by scheduled generation, full-year 2025; "Other" = embedded generators, incineration plants, imports, Meranti Power and TP Utilities; FX: 1 SGD = 1.34 NZD; Number of connections is assumed to be equivalent to the number of households.

Source(s): Energy Market Authority (EMA), Open Electricity Market (OEM), Singapore Department of Statistics, Selectra, company disclosures, Energy Market Company (EMC), NEMS Market Report 2025, p.50

A2.14

Texas



Texas has adopted legal separation between generation and retail but allows common ownership of the entities.

Legislative and regulatory framework

In 1999, Texas passed Senate Bill 7 (SB 7), one of the most comprehensive electricity restructuring statutes adopted in the United States.²¹⁶ Retail competition commenced on 1 January 2002. Its central features included the introduction of retail competition across most of the Electric Reliability Council of Texas (ERCOT) region, legal separation of incumbent utilities, and the establishment of transitional mechanisms to facilitate development of retail competition.

Under SB 7, incumbent integrated utilities were required to disaggregate their operations into three separate affiliated entities^{217,224}: a power generation company (PGC), a retail electric provider (REP), and a transmission and distribution utility (TDU). The critical structural choice was that these entities were required to be legally separate but were permitted to remain under common corporate ownership. Thus TXU Corporation, the largest incumbent, separated into TXU Energy (generation), TXU Energy Retail (the affiliated REP), and Oncor (the regulated TDU), all wholly owned subsidiaries of TXU Corp.

This legal separation was reinforced by a code of conduct governing transactions between affiliated entities. The code allowed arm’s-length dealings, prohibited the sharing of competitively sensitive customer information between the generation and retail affiliates, and imposed restrictions on joint marketing and branding.

To protect consumers during the transition to retail competition, SB 7 established a "price-to-beat" mechanism. Each incumbent REP was required to offer a default tariff 6% below the utility's bundled rate as at 1 January 1999. The affiliated REP could not undercut the price-to-beat during the first 36 months of competition (or until 40% of customers switched to alternative providers), to preserve new entrants' margin and could only be adjusted thereafter to reflect changes in fuel costs. The mechanism expired by law on 1 January 2007, after which all retail prices were deregulated.

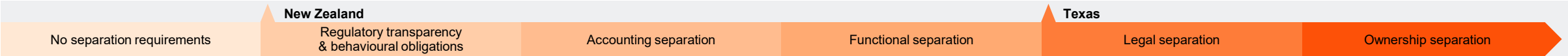
Regulatory oversight is provided by the Public Utility Commission of Texas (PUCT), which maintains ongoing oversight of affiliate transactions and market conduct.

Market structure and evolution

Texas did not introduce legal separation and then leave the market to develop on its own. The initial reforms also included the price-to-beat, mandatory generation-capacity auctions, open transmission access through ERCOT, a 20% generation ownership cap, affiliate conduct rules, stranded-cost true-ups, provider-of-last-resort arrangements, consumer protections and dedicated market surveillance. These measures created space for new entrants, constrained incumbent advantages and helped deliver workable retail competition.

Regulators continued to intervene as new problems emerged. Many customers remained on incumbent tariffs even when cheaper offers were available, so the PUCT developed the Power to Choose comparison platform to reduce search costs, make plans easier to compare and encourage switching. It later refined the platform’s filters and presentation rules as complex tariffs and large numbers of offers made comparison more difficult. Texas also strengthened retailer certification, complaints processes, anti-slamming protections and enforcement powers to build consumer confidence and support active participation.

Texas repeatedly adjusted the wholesale market as well. It introduced nodal pricing and congestion reforms, stronger rules against withholding and market manipulation, expanded penalties and market monitoring, higher scarcity-price caps, the Operating Reserve Demand Curve, new ancillary services, demand response, firm-fuel arrangements and backstop reliability mechanisms. Not all of these measures responded directly to separation, but together they show that separation was only the starting point. Texas did not separate and step away. It continually added entry support, market-power controls, consumer-engagement measures and reliability mechanisms to keep the market functioning.



A2.14

Texas (continued)



Texas's reforms fostered a vibrant and competitive retail market, but evidence on ultimate consumer price outcomes is contested. This reflects the market's energy-only design and wider reforms as much as separation, which was itself a means to enable retail competition rather than to curb vertical market power.

Evidence on consumer outcomes

The evidence on consumer outcomes in the restructured Texas market is contested. Two bodies of research warrant particular attention.

Hartley, Medlock, and Jankovska (2017) examined the relationship between wholesale and retail electricity prices in the ERCOT market over the period 2002–15. They found that, following the expiry of the price-to-beat mechanism, residential retail prices converged with wholesale costs plus a competitive retail margin. They concluded that retail competition had functioned effectively and that consumers had benefited from the development of a competitive retail market with diverse product offerings.

Zarnikau et al. (2023) reached a more cautious conclusion using a synthetic-control counterfactual for Dallas and Houston. They estimated that retail competition increased residential prices during both the 2001–06 transition period and the 2007–20 period of largely unrestricted competition. They attributed much of this effect to the greater sensitivity of retail prices to wholesale electricity prices and, in turn, marginal natural gas costs. The estimated price gap was largest when gas prices were high and much smaller when gas prices were low.

These findings are not necessarily irreconcilable. Hartley et al. found stronger cost-reflectivity and evidence of lower retail operating margins, but also materially greater retail price volatility in competitive areas.

Over 2002–16, residential price volatility in their competitive-area sample averaged more than twice that observed in non-competitive areas and more closely tracked movements in wholesale prices. Zarnikau et al. explain the underlying mechanism: restructuring shifted retail pricing away from the average generation costs and regulatory lag associated with vertically integrated utilities and towards more direct exposure to marginal wholesale costs, particularly natural gas prices.

The Texas reforms have improved retail efficiency and cost pass-through while exposing consumers to greater price variation over time. However, neither paper isolates separation impacts from the accompanying introduction of retail competition, price deregulation and wholesale market reforms.

Key lessons

- Legal separation can support an active and differentiated retail market, but only when combined with deliberate measures to enable entry and customer participation.
 - Separation was not a standalone regulatory strategy; it was part of a package intended to establish retail competition.
- Evidence on ultimate consumer price outcomes from separation remains contested.
 - Hartley, Medlock and Jankovska (2017) concluded that retail competition had functioned effectively and produced benefits to consumers. They found evidence of lower retail margins, but also increased volatility of retail prices in competitive areas.
 - Zarnikau et al. (2023) found that retail competition actually increased residential prices between 2001 and 2020. This was found to be linked to greater wholesale price exposure, in particular natural gas costs.

New Zealand

Regulatory transparency
& behavioural obligations

Accounting separation

Functional separation

Texas

Legal separation

Ownership separation

No separation requirements

[Return to jurisdictions overview \(Section 5.2\)](#)

A2.14

Texas (continued)

Key market institutions

Public Utility Commission of Texas (PUCT): State regulator for ERCOT market, oversees market rules, transmission planning, reliability standards, retail licensing and consumer protection.

Electric Reliability Council of Texas (ERCOT): Independent system operator managing dispatch, grid operations and market settlement.

Hedge market structure

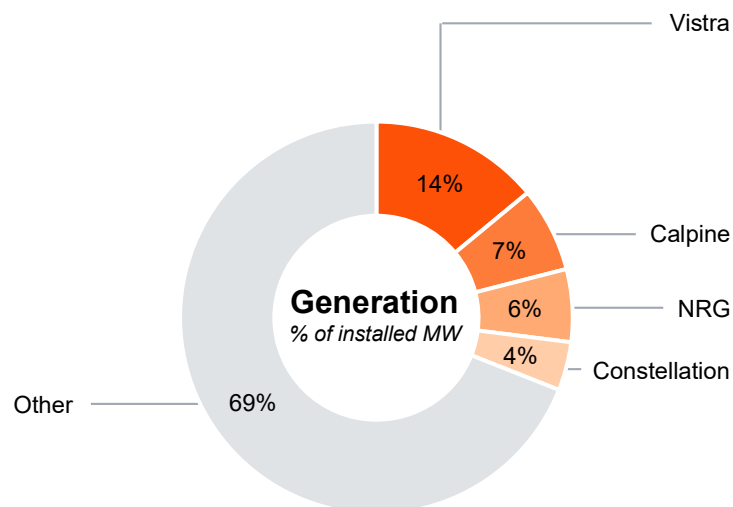
Bilateral contracts and PPAs, with financial trading primarily via exchange forwards/futures and OTC contracts. ERCOT offers Congestion Revenue Rights auctions.



Population no.
31.7 million

No. of connections
8.0 million

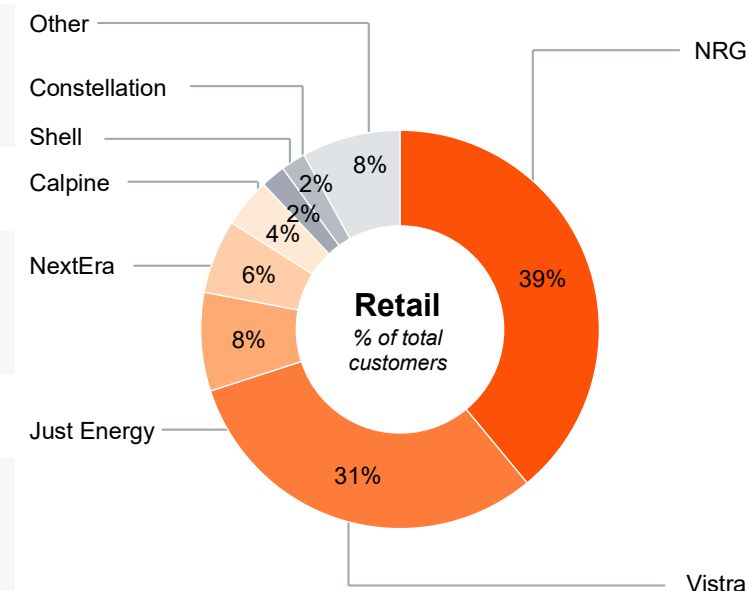
Average wholesale price
NZ\$61/MWh



No. of retailers
139

Average retail bill
NZ\$270/month

Average retail price
NZ\$0.25/kWh



Note(s): All figures as at 2025 unless stated otherwise; Generation market share by installed capacity in ERCOT as at Mar-25; retail market share as at 2024; No. of connections based on ERCOT-reported premises; FX: 1 USD = 1.65 NZD.

Source(s): Electric Reliability Council of Texas (ERCOT), Public Utility Commission of Texas (PUCT) (Project Nos. 39870 and 57684), Texas legislature, U.S. Energy Information Administration (EIA), U.S. Census Bureau, company disclosures

Appendix 3

Definitions



A3.1

Defined terms

Term	Definition
Arm's-length dealing	Commercial dealings between related businesses conducted as if they were unrelated, with each party acting independently and in its own best interests.
Basis risk	The risk that the price used in a hedge does not move in line with the price exposure being hedged, including differences between system and local prices.
Code	Electricity Industry Participation Code
Cross-subsidisation	Support provided by one business activity to another through favourable pricing, cost allocation, or other internal arrangements.
Day 1	First day when an entity separates and must be operationally ready.
Day 1 hedge	The initial arm's-length hedge or equivalent contract between the separated RetailCo and GenCo on the day when separation takes effect.
Directed contract	A hedge contract that a regulator requires a generator to offer to specified buyers on regulated or regulator-determined terms.
Energy-only market	A wholesale market in which generators are paid for electricity generation volumes (MWh) without a separate payment for capacity (MW).
Energy trilemma	The competing energy market objectives of affordability, security of supply, and sustainability.
Financeability	The ability of a business or project to obtain funding on workable terms, taking account of its risks, contracts, credit quality, and expected cash flows.
Firming	Generation, storage or demand response used to manage intermittency, peaks and dry-year risk.
Foreclosure	Conduct that restricts competitor access to generation, hedges, customers or other inputs required to compete.
GenCo	Generation business or entity under a separation option.
Gentailer	Integrated company that both generates and retails electricity.
Gross pool	A wholesale-market design under which generators sell, and retailers purchase, all electricity through a central pool.
Hedge / hedging	A contract or portfolio of contracts used to reduce exposure to movements in wholesale electricity prices, volumes, timing or location.
Hedge-market liquidity	The ability to buy or sell suitable hedge products in sufficient volume, tenor and shape on workable terms, with reliable price discovery and limited market impact.

Term	Definition
Market coupling	Integration of neighbouring electricity markets so they operate together, enabling cross-border electricity trading and greater alignment of wholesale prices.
Market-making	The activity or obligation of quoting firm buy and sell prices in specified hedge products to support liquidity and price discovery.
Natural hedge	Offset between generation earnings and retail supply costs when wholesale prices move.
Net pool	A wholesale-market design in which participants may contract bilaterally and use the central market to settle their remaining net positions.
Network unbundling	Separation of transmission and distribution networks from competitive generation and retail activities.
Offtake / offtaker	An arrangement under which a buyer agrees to purchase a generator's output; the buyer is the offtaker.
Pivotal supply / pivotal supplier	Supply, or a supplier, that is necessary to meet demand in a period because the market cannot meet demand without it.
Price discovery	The process through which observable bids, offers and trades provide a credible market price or forward-price signal.
Prudential requirements	Financial-security requirements intended to ensure a participant can meet its market obligations.
RetailCo	Retail business or entity under a separation option.
Ring-fencing	Rules limiting information sharing, cost allocation or conduct between related units.
Shaped hedge	A hedge designed to cover electricity exposure that varies by time of day, season or customer-demand profile.
Super-peak hedge	A standardised hedge providing protection against high electricity prices during specified morning and evening peak-demand periods.
Target operating model	The intended structure, capabilities, systems, governance and processes through which a separated business will operate.
Vertical integration	Common ownership or operation of electricity generation and retail supply within the same corporate group.
Vesting contract	A contract requiring specified generation output to be made available at an administered or predetermined price.
Virtual disaggregation	A requirement that part of a participant's flexible supply capability be offered through a prescribed process while ownership remains unchanged.

A3.2 Acronyms and abbreviations

Acronym	Definition
ACCC	Australian Competition and Consumer Commission
ACER	European Union Agency for the Cooperation of Energy Regulators
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ARENH	Accès régulé à l'électricité nucléaire historique: France's regulated-access mechanism for historic nuclear electricity
ASX	Australian Securities Exchange
C&I	Commercial and industrial
CEGB	Central Electricity Generating Board (Great Britain)
CFD / CFDs	Contract(s) for difference
CMA	Competition and Markets Authority (Great Britain)
CNMC	Comisión Nacional de los Mercados y la Competencia (Spain)
CRE	Commission de régulation de l'énergie (France)
CRU	Commission for Regulation of Utilities (Ireland)
EA	Electricity Authority (New Zealand)
ECNZ	Electricity Corporation of New Zealand
EGRC	Electricity Generation and Retail Corporation (Western Australia)
EMA	Energy Market Authority (Singapore)
ENTSO-E	European Network of Transmission System Operators for Electricity

Acronym	Definition
EPO	Economic Purchase Obligation
ERA	Economic Regulation Authority (Western Australia)
ERANZ	Electricity Retailers' Association of New Zealand (now ERGANZ)
ERCOT	Electric Reliability Council of Texas
ERSE	Entidade Reguladora dos Serviços Energéticos (Portugal)
ESB	Electricity Supply Board (Ireland)
ETAG	Electricity Technical Advisory Group
EV	Enterprise value
FTE / FTEs	Full-time equivalent(s)
GB	Great Britain
GenCo	Generation business or entity under a separation option
HFO / HFOs	Huntly Firming Option(s)
HHI	Herfindahl-Hirschman Index
HR	Human resources
I-SEM	Integrated Single Electricity Market (Ireland and Northern Ireland)
ICP	Installation Control Point
IEGA	Independent Electricity Generators Association
IER	Independent Electricity Retailers
IT	Information technology

A3.2 Acronyms and abbreviations (continued)

Acronym	Definition
ITP	Internal transfer price
MBIE	Ministry of Business, Innovation and Employment (New Zealand)
MDAG	Market Development Advisory Group
MED	Ministry of Economic Development
MIBEL	Mercado Ibérico de Electricidad (Iberian electricity market)
MOM	Mixed Ownership Model
NDO / NDOs	Non-discrimination obligation(s)
NEM	National Electricity Market (Australia)
NETA	New Electricity Trading Arrangements (Great Britain)
NOME	Nouvelle Organisation du Marché de l'Électricité (France)
NZX	New Zealand Exchange
OMIE	Operator of the Iberian day-ahead and intraday electricity markets
OMIP	Operador do Mercado Ibérico de Energia, Polo Português (MIBEL derivatives)
OTC	Over-the-counter
OU	Ownership unbundling
PGC	Power generation company (Texas)
PPA / PPAs	Power purchase agreement(s)
PPB	Power Procurement Business (Northern Ireland)
REC	Regional Electricity Company (Great Britain)

Acronym	Definition
REP	Retail electric provider (Texas)
RetailCo	Retail business or entity under a separation option
RGM	Retail gross margin
RPCA / RPCAs	Retail Price Consistency Assessment(s)
SB 7	Senate Bill 7 (Texas, 1999)
SEM	Single Electricity Market (Republic of Ireland and Northern Ireland)
SME / SMEs	Small and medium-sized enterprise(s)
SOE	State-owned enterprise
SoLR	Supplier of Last Resort
STEM	Short Term Energy Market (Western Australia)
SWIS	South West Interconnected System (Western Australia)
TDU	Transmission and distribution utility (Texas)
TSA / TSAs	Transitional service agreement(s)
USPP	United States Private Placement notes
VPP	Virtual power plant
WEM	Wholesale Electricity Market (Western Australia)

A3.3

Key New Zealand reports

2009 ComCom investigation	2009 Commerce Commission Electricity Market Investigation ⁴
2009 Ministerial review	2009 Electricity Technical Advisory Group (ETAG) & Ministry of Economic Development – Electricity market review ²⁰
2018 CEG	2018 Competition Economists Group Report on competition in New Zealand electricity markets ²⁴
2019 EPR	2019 Electricity Price Review ¹⁹
2021 Wholesale market review	2021 Review of wholesale market competition ⁵
2021 ITP consultation	2021 Internal transfer pricing and profitability ⁸
2023 MDAG	2023 Price discovery in a renewables-based electricity system ³⁰
2025 Frontier	2025 Frontier Economics – Review of electricity market performance ²¹
2025 LPF	2025 Level playing field measures ¹²
2026 NDO	2026 Non-discrimination obligations ¹⁸
2026 Market making review	2026 Market making review ¹⁶
2026 Super-peak decision	2026 Standardised super-peak hedge contract ¹⁵



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Appendix 5

Bibliography – submissions



For submissions relating to relevant papers, refer to the repositories linked below

2026 Non-discrimination obligations

Reviewed whether the electricity market was delivering efficient, fair and equitable prices to consumers, and whether the regulatory framework and sector governance were fit for the future.

[Submissions repository](#) 

2019 Electricity Price Review

Considered measures to address competition risks arising from gentailer vertical integration and control of flexible generation, including non-discrimination obligations and virtual disaggregation.

[Submissions repository](#) 

2025 Level playing field measures

Considered the detailed design of proposed non-discrimination obligations for major gentailers, including the RPCA, treatment of uncommitted capacity, internal policies and external audit requirements.

[Submissions repository](#) 



