Statement of Government Policy to the Electricity Authority Under Section 17 of the Electricity Industry Act 2010: New Zealand Electricity Industry

I hereby transmit to the Electricity Authority and wholesale electricity market participants a statement of Government policy in relation to the electricity industry in New Zealand, with particular focus on updating the wholesale electricity market and security of supply.

Dated this 11th day of October 2024.

HON SIMEON BROWN, Minister for Energy.

What we want from our electricity system

1. An efficient electricity system is vital for a competitive, growing economy, environmental sustainability, and social well-being. In particular, New Zealand should have abundant and affordable energy at internationally competitive prices.

2. The Government therefore expects the electricity system to deliver reliable electricity at lowest possible cost to consumers. It should serve the interests of all electricity consumers, including through the provision of sufficient electricity infrastructure to ensure security of supply and avoid excessive prices.

3. This is best achieved by:

a. An efficient wholesale electricity market[1] with many different wholesale buyers and sellers of electricity, managing their own risks, responding to competitive pressures and accurate price signals, continually looking for ways to serve their current and potential customers more effectively than their competitors;

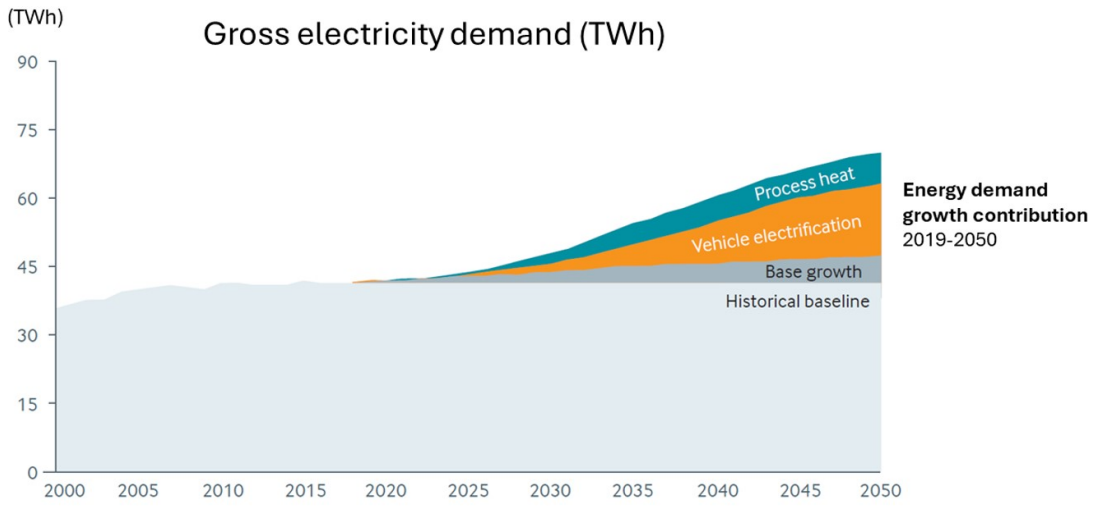
b. Efficient transmission and distribution networks; and

c. Effectively competitive[2] markets for electricity retail services.

Electrifying the economy

4. Over the coming 30 years, electrification of transport and process heating across the economy, combined with underlying growth, is expected to result in a major increase in demand for electricity.[3]

5. To meet this huge increase in demand, New Zealand's renewable generation is expected to double, and this will be a major contributor to achieving our Net Zero 2050 target.



Source: Transpower, Whakamana I Te Mauri Hiko, March 2020, Figure 3 abstracted

6. Meeting this increased demand will require a huge increase in investment in new generation and related services[4] – running into many tens of billions of dollars. This investment must be efficient to deliver reliable electricity supply at lowest possible cost to consumers.

7. Technology advances are making it easier for new players (including households) to provide generation, energy storage or demand response services. It is important that our system promotes innovation across the system for the benefit of consumers.

8. This innovation and investment efficiency is best achieved by a diversity of parties competing to bring to market solutions that meet consumer demand.

9. The Government's role is to ensure clear and consistent regulatory settings, reflected in market rules with robust compliance monitoring and enforcement, that enable an efficient market anchored by accurate price signals[5], and effective risk management tools and competition.

10. The Government's role is also to avoid policy decisions that would have the effect of chilling or crowding out private investment.

Update the wholesale electricity market

11. As outlined in recent key reports:[6]

a. The country's generation portfolio is becoming progressively more diverse with a growing share of supply from intermittent renewable sources, such as solar and wind, from a wider spread of locations.
b. Electricity supply to and from distributed sources – like electric vehicles and fixed storage batteries – is becoming more significant.[7]
c. With increased intermittency in supply, hydro generation with storage will become more important in smoothing out electricity supply in periods when wind and solar are low.[8]
d. Demand-side response and other sources of flexible supply (such as batteries and thermal generation) will become more valuable, particularly in managing demand peaks and periods when short-term capacity is tight.[9]
e. The spot market will also need to coordinate many more participants and resources.

12. These changes in the physical characteristics of our electricity system are expected in the coming years as electricity demand grows.

13. The wholesale market must be updated[10] without delay to meet these challenges.

Strengthen transmission and distribution networks

14. Electrification of the economy will require significant investment in strengthening transmission and distribution networks.[11] It is critical that this investment is economically efficient, which means (among other thing) that it reflects demand and optimises new capacity in a manner that avoids unnecessary cost increases for consumers, while ensuring network reliability.

15. Efficient network pricing is essential:

a. To find the lowest cost solution, which may include demand-side response and flexibility to avoid or defer the need for network capacity augmentation; and
b. For connections to enable efficient investment in new electricity consumption, including electrifying transport and process heat in industry.

16. As provided for under current arrangements:

a. The Electricity Authority is responsible for setting principles (and regulating if warranted) for transmission and distribution pricing structures.
b. The Commerce Commission is responsible for setting price and quality controls[12] for Transpower and distribution businesses that are not classified as consumer-owned.[13]

Reliability and security of supply[14]

17. Reliability requires enough investment in power stations, storage devices and demand-side response capability to meet today's needs, as well as tomorrow's expected needs. This includes a reasonable buffer to insure against variability in hydro, wind and solar generation and failures in plant or networks.[15]

18. Clarity of incentives and accurate prices signals in the wholesale electricity market are critical to achieving efficient reliability and security of supply.

19. Individual wholesale market participants are responsible for managing their own supply risks in response to efficient price signals.

20. This recognises that individual wholesale parties are best placed to understand the risks they face and how best to 'insure' against those risks for their particular circumstances.

21. It is therefore important:

a. For each wholesale buyer and seller of electricity to have in place risk management arrangements (such as contract cover and demand-side response, among other measures[16]) appropriate to its wholesale market risk

position; and

b. For wholesale buyers and sellers to regularly sign off on their company's risk management position.[17]

22. Neither the Government nor the Electricity Authority nor the System Operator will step in to insulate wholesale market participants from risk or to protect them from their failure to manage their own energy supply risks. To do so would only increase the risk of shortage. Such interventions can cause a vicious circle because they can undermine incentives on market participants to manage their own risks properly, chilling hedging and new investment leading to increased scarcity, more periods of high prices and reduced security.

23. The Electricity Authority has an important role in:

a. Ensuring that all information relevant to the supply and demand outlook (including risks)[18] is up to date, comprehensive, collated and presented in an integrated manner readily accessible to all stakeholders[19];
b. Ensuring that spot price signals accurately reflect the supply and demand balance, recognising that efficient spot prices in periods of extremely tight supply will be very high;[20] and
c. Facilitating improved forward price discovery, particularly in relation to flexible supply to cover periods of low wind, sun and/or hydro inflows;[21] and
d. Ensuring that clear and comprehensive guiding principles and impartial procedures are in place for the System Operator to follow in power system emergencies, including any public calls for electricity conservation or reduced consumption.

24. In accordance with market rules and arrangements, the System Operator is –

a. Not responsible for ensuring the adequacy of offers to meet demand, but rather –
b. To efficiently coordinate the utilisation of electricity generation and demand-side offers that have been made available in the wholesale market by market participants in response to spot price signals.

25. This decentralised approach to risk management is the best way to deliver the level of reliability that consumers want at the lowest possible cost to consumers.[22]

Spot price volatility

26. The Government recognises that:

a. As electricity generation becomes increasingly dependent on the weather (sun, wind and hydro inflows), spot prices in the wholesale electricity market will become more volatile;
b. Spot prices should signal real changes in the cost (value) of producing (or storing) another unit of electricity to meet demand as physical conditions change; and
c. Suppressing spot price volatility by artificial means would undermine incentives for participants to invest in flexible generation, energy storage and demand response solutions, and therefore increase risks to security.

27. The Government would like to see better periodic public information to improve stakeholders' understanding as to why this increased volatility is occurring and what to expect in general terms.[23] Broadening understanding is important for public confidence in the system.

Demand-side flexibility

28. Demand-side flexibility ("DSF") is where consumers shift their demand in time or alter their total demand. Like generation, DSF is an important resource for matching supply and demand. It is also a tool for managing price risk. If demand-side response is available in the market at a lower price, it should displace generation as the preferred source for meeting additional demand.

29. Efficient DSF will deliver benefits for both consumers (lower bills) and for the system as a whole (more resilience).[24]

Competition

30. Effective competition is essential for our electricity system to deliver reliable electricity at lowest possible cost to consumers. Among other things, in a market with effective competition:

a. Competition is not distorted by the misuse of market power;[25]
b. The market clearly signals the expected cost of meeting the next increment of demand in any interval of time;[26]
c. Market participants (existing and new, demand-side and supply-side) compete to find the solutions that are better

than their competitors to meet the next increment of demand;[27]

d. Competitive new entry and competing business models[28] tends to spur innovation delivering benefits for consumers over time;
e. The rules of the market do not favour one technology or solution over any other;[29]
f. This results in sustained downward pressure on costs and prices, and prices reflect their efficient level to the benefit of all consumers;[30] and
g. Household and business consumers can make meaningful choices between competing suppliers and technologies, and benefit from the opportunities available in the electricity system. This includes the benefits that consumers may gain from providing demand-side flexibility.

31. As part of its obligation to promote competition, the Electricity Authority should ensure that market arrangements facilitate this competition, including in relation to flexible supply.[31]

Related key policy elements

32. The Electricity Authority should be aware that:

a. The Government intends to ensure that resource consenting processes for generation, energy storage and network infrastructure enable the timely and efficient build of new infrastructure.[32]
b. Fuel sector arrangements have a critical influence on electricity generation costs and reliability. The Government's policy frameworks for both fossil and green fuels recognise the critical role these fuels play in the electricity sector.
c. Carbon pricing rules[33] are the primary tool to drive decarbonisation decisions within the electricity system and most sectors of the wider economy. To the extent that thermal generation (including applicable carbon charges) is lower cost than renewable alternatives, it will continue to be selected for use by the wholesale market.
d. It is not the Electricity Authority's role to prefer one form of supply over any other.
e. The Government is considering the thresholds at which electricity distribution businesses can invest in generation assets.
f. The Government is progressing the Customer and Product Data Bill ("Bill") and intends to apply its provisions to the electricity sector.[34] The Bill is intended to drive market competition and affordability by giving consumers greater access to their own data to make informed decisions and helps businesses provide the best option for consumers. The Electricity Authority is aligning its own data work programme, which is looking to achieve similar outcomes.

General

33. The Electricity Authority is expected to work collaboratively with other agencies across the wider regulatory regime, acknowledging the scope of each agency's remit.

34. Section 17 of the Electricity Industry Act 2010 provides that the Electricity Authority is required to "have regard to" this statement of government policy.

Endnotes

1. Which has three limbs: (i) the spot market; (ii) the hedge (or contracts) market; and (iii) and the ancillary services market. The wholesale market's core objective is to ensure that, in any interval of time (short, medium or longer term), demand for electricity is reliably met from the lowest cost sources of supply, recognising security constraints on the network.

2. This refers to "workable competition" which is "a market framework in which the presence of other participants (or the existence of potential new entrants) is sufficient to ensure that each participant is constrained to act efficiently" – as explained in *Wellington International Airport Ltd and others v Commerce Commission* [2013] NZHC 3289 at [26] citing precedent authorities.

3. Transpower's base case estimate is 68% above current levels of demand. A range of factors could mean that increase in demand is even higher. See also MBIE's *Electricity Demand and Generation Scenarios: Results Summary*, July 2024. Electricity is expected to become a much larger proportion of New Zealand's total energy requirement, up from around 25% in 2020 to around 60% in 2050. Households are likely to use less energy but much more electricity.

4. Which includes upgrading the transmission and distribution networks.

5. Recognising that accurate pricing means the lowest cost source offered to meet the next increment of electricity demand for any interval of time, from real time to the next half hour, day, week, season, year and beyond. The lowest cost source may be demand-side response.

6. As outlined in the http://www.ea.govt.nz/documents/4335/Appendix_A2_-_Final_recommendations_report.pdf dated 11 December 2023 of the

Electricity Authority's Market Development Advisory Group ("MDAG's report"); and also in Transpower's report of March 2020, *Whakamana i Te Mauri Hiko - Empowering our Energy Future.*

7. For example, in balancing intermittent generation and meeting demand peaks, which is also a function of hydro storage, demand-side response and other source of flexible supply.

8. Hydro generation with storage is also likely to operate differently if there is less thermal generation to refill its hydro storage, as explained in MDAG's http://www.ea.govt.nz/documents/4335/Appendix_A2_-_Final_recommendations_report.pdf at paras 4.13-4.18.

9. The importance of flexible supply and demand is highlighted in MDAG's http://www.ea.govt.nz/documents/4335/Appendix_A2_-_Final_recommendations_report.pdf at paras 4.33-4.40, with particular focus in paras 7.42-7.46 and Appendix A on the measures required to 'activate' demand-side flexibility in the wholesale market. Like generation, demand-side flexibility is an important resource for matching supply and demand. It is also a tool for managing price risk. If demand-side response is available in the market at a lower price, it should displace generation as the preferred source for meeting additional demand.

10. This means implementing the integrated package of measures set out in chapter 9 of MDAG's http://www.ea.govt.nz/documents/4335/Appendix_A2_-_Final_recommendations_report.pdf, which the Electricity Authority has endorsed.

11. Boston Consulting Group estimates that $22 billion is required in the 2020s to enable electrification and integrate distributed energy resources. This is a 30% increase in total expenditure in 2026–30 relative to 2021–25 [see *The Future is Electric - A Decarbonisation Roadmap for New Zealand's Electricity Sector* (2022) at page 180(g)]. In relation to the transmission network, phase one (to 2035) of Transpower's grid upgrade plans provides for around $400m of investment in the existing grid backbone, which was approved by the Commerce Commission in February 2024.

12. Which restricts the maximum revenue these businesses can earn or the maximum average prices they can charge and require them to deliver services at a quality that consumers would expect.

13. See this http://comcom.govt.nz/regulated-industries/electricity-lines/electricity-distributor-map of entities subject to price-quality controls. Electricity distribution businesses classified as http://comcom.govt.nz/regulated-industries/electricity-lines/our-role-in-electricity-lines/consumer-owned-electricity-distribution-businesses' are exempt from price-quality regulation but subject information disclosure requirements.

14. "Reliability" means having adequate generation and demand response to continuously meet consumers' demand for electricity. This covers all timeframes – next half hour, hour, day, week, season, year and beyond. "Security" means tolerating a disturbance (such as loss of a major generator or transmission circuit) and still maintaining electricity supply to consumers. "Security" is a necessary, but not sufficient, condition for "reliability".

15. The transmission and distribution networks must also be capable of handling heavier loads when consumers need more power – *Electricity Price Review – Hikohiko Te Uira – First Report for Discussion,* New Zealand Government, 30 August 2018 at page 12, 5th para.

16. Depending on the wholesale buyer or seller involved, the range of risk management mechanisms may also include changing generation levels, retail market exposure and/or electricity consumption.

17. With the enhanced 'stress test' recommended in MDAG's http://www.ea.govt.nz/documents/4335/Appendix_A2_-_Final_recommendations_report.pdf at Recommendation 7 and Appendix C.

18. Covering short to medium to longer term horizons.

19. Noting that the integration of this information in a readily accessible form needs to be improved. This information underpins an efficient wholesale market, including how the market responds to high price risks and new investment opportunities

20. At the wholesale level, and it is these high prices (and the belief among market participants that these will occur) that induces efficient contracting, demand response, and investment in flexible supply and demand, including fast-start peaking generation.

21. As highlighted in MDAG's report, improving price discovery for flexibility products is foundational for the wider wholesale market in growing a high renewables system. Recommendation 8, as detailed in Appendix B of MDAG's report, is a key measure to this end.

22. Particularly in a renewables-based system. By contrast, a centralised approach tends over time to have higher costs, less timely (and over) investment, and a less innovative and less diverse menu of risk management options.

23. See in particular Recommendation 15 in MDAG's http://www.ea.govt.nz/documents/4335/Appendix_A2_-_Final_recommendations_report.pdf.

24. A comprehensive package of measures to better activate DSF in the wholesale market is described in Appendix A of MDAG's http://www.ea.govt.nz/documents/4335/Appendix_A2_-_Final_recommendations_report.pdf.

25. Misuse of market power is where the exercise of market power would have a net adverse impact on economic efficiency. This is also known as the exercise of significant market power.

26. Whether in the present or looking forward a half hour, day, week, season, year or beyond.

27. In any interval of time.

28. Including but not limited to vertically integrated and non-vertically generators, retailers and flexibility service providers.

29. Whether grid-scale or distributed resources (demand response, storage or generation), and whether existing technology or a new innovation.

30. It is these prices that accurately signal supply and demand conditions. The Government expects to see effective competition in the generation and retail sectors, recognising that the other checks on prices are required in the transmission and distribution sectors (as noted in paras 14 – 16 above).

31. Which is highlighted as an area of potential concern in MDAG's http://www.ea.govt.nz/documents/4335/Appendix_A2_-_Final_recommendations_report.pdf in Appendix D.

32. Resource management policy is the subject of wider action by the Government.

33. In particular, the Emissions Trading Scheme

34. The Customer and Product Data Bill is intended to drive market competition and affordability by giving consumers greater access to their own data to make informed decisions and helps businesses provide the best option for consumers.