ELECTRICITY AUTHORITY
TE MANA HIKO

2020/21
ANNUAL REPORT

For the period 1 July 2020 to 30 June 2021

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PURPOSE OF THIS ANNUAL REPORT

This annual report is the Electricity Authority's formal report to Parliament on its results for the period 1 July 2020 to 30 June 2021.

The report contains information required by sections 150–155 of the Crown Entities Act 2004. Further information about the Authority and its work is available from: www.ea.govt.nz.

GLOSSARY AND ABBREVIATIONS

There are many technical terms used in the electricity sector, and some of these occur in this report. To assist readers, a glossary and list of abbreviations used in this report is provided at the end of the report. In addition, the Authority has a glossary of common electricity industry terms on its website at www.ea.govt.nz/glossary.

YEAR IN REVIEW

JULY 2020

Consultation: Thermal fuel generation information disclosure

THRIVING COMPETITION

AUGUST 2020

Decision: Transition to an incentivised market-making approach with commercial providers

THRIVING COMPETITION

SEPTEMBER 2020

Hosted the first industry real-time pricing engagement session with Transpower and NZX

LOW-EMISSIONS ENERGY

NOVEMBER 2020

Dr Nicola (Nicki) Crauford joined as Authority Board Chair

TRUST AND CONFIDENCE

DECEMBER 2020

Decision: Undesirable trading situation investigation concludes

TRUST AND CONFIDENCE

JANUARY 2021

Local and international market makers invited to provide services to NZ electricity futures market

THRIVING COMPETITION

MARCH 2021

Released consumer care guidelines for electricity retailers

CONSUMER CENTRICITY

MARCH 2021

Submission on Climate Change Commission's draft advice

LOW-EMISSIONS ENERGY

MARCH 2021

Review of competition in the wholesale market announced

TRUST AND CONFIDENCE

APRIL 2021

Code change: More wholesale market information disclosure obligations

TRUST AND CONFIDENCE

APRIL 2021

Consultation: Grid-scale batteries participating in the national reserves market

INNOVATION FLOURISHING

APRIL 2021

Code change: Raising consumer awareness of Powerswitch and Utilities Disputes

CONSUMER CENTRICITY

MAY 2021

Authority responds to dry year risk

TRUST AND CONFIDENCE

MAY 2021

Sponsored the Outcomes Award at the Energy Excellence Awards

INNOVATION FLOURISHING

JUNE 2021

Code change: New trading conduct rule

TRUST AND CONFIDENCE

JUNE 2021

Reset Senior Leadership Team accountabilities and functions

TRUST AND CONFIDENCE

JUNE 2021

Received proposed TPM from Transpower

LOW-EMISSIONS ENERGY

BY THE NUMBERS

39
companies

A peak of **39 parent companies** were active in the retail market.

56,000
contracts

Monthly trading of ASX contracts reached a peak of around 56,000 contracts, a **31% increase** from 2019/20's peak.

106
decisions

Decisions were made against **106 compliance investigations** – including fact finding and formal investigations on alleged Code breaches.

73% of consumers

73% of consumers surveyed agreed they **can find an electricity retailer that meets their needs**.

1m + data transactions

Over 1 million data transactions occurred on the Electricity Market Information (EMI) website.

4% ⬆ website visits

The **annual number** of visits to the consumer section of the website increased by 4%.

85% of participants

85% of participants surveyed agreed there is a **reliable supply of electricity each day.**

10
new datasets

10 new datasets were made available on EMI.

FROM THE BOARD

We are pleased to present the Electricity Authority's eleventh annual report.

This year was another challenging and uncertain one as we managed through dry year risk due to low lake levels, gas supply constraints and little wind. While the system reacted as intended, the situation was serious and required a cross-agency, full industry response to secure continued supply.

New Zealand is not alone when dealing with increasing uncertainty. The past year has seen electricity systems across the world grappling with maintaining security of supply in the face of extreme weather events and increased demands on the system. The legislated target for net zero emissions by 2050, and the Government's aspirational target of 100 percent renewable electricity generation by 2030, demand an unprecedented pace and extent of change.

Like the rest of the world, this year, we have continued to be challenged by the COVID-19 pandemic. The Authority and industry have navigated the challenges and performed well to keep the lights on. We are grateful to Authority staff and the Innovation and Participation Advisory Group, Market Development Advisory Group, and Security and Reliability Council for their leadership and technical advice, as well as the wider industry for their efforts to maintain high levels of operational and customer service.

The Climate Change Commission published its final advice in June 2021. As a country, we are well on the way to transitioning to a low-carbon economy. Different parts of the electricity sector are navigating the shift to increased electrification, and industry and the Government are thinking more broadly about an energy strategy. The required change demands a collective approach in which industry and agencies work together to ensure a reliable and affordable electricity future.

The Authority's regulatory stewardship aims to protect the progress and strengths of New Zealand's electricity system for generations to come. Our focus is on a system which delivers positive consumer outcomes. Investment and innovation are critical to the ongoing evolution of all parts of the system and to secure a reliable and affordable supply of electricity. The Authority is focused on regulatory settings that enable innovation and competition and the right price signals to attract the investment required to meet the renewable electricity targets.

The electricity markets have a critical role to play in this evolution. The market has enabled the increase in renewable electricity over the past 20 years and will continue to signal when and where new generation is required. However, the accelerated pace of change may require more than a market response. The Authority is working through the impacts and roadmap for transition and will communicate these in due course.

We would like to take this opportunity to thank Transpower for its work on the proposed Transmission Pricing Methodology (TPM). The Authority is looking forward to continuing to work with Transpower on the TPM.

The Authority has experienced a few significant changes in the past year including the departure of long-standing Board member Susan Paterson. The Authority has greatly benefited from Susan's extensive director experience, industry knowledge and business acumen. Her contribution to the Authority's regulatory stewardship has been invaluable.

THE BOARD

The Board is responsible for promoting a competitive, reliable and efficient electricity industry for the long-term benefit of consumers.

DR NICOLA (NICKI) CRAUFORD
Chair

MARK SANDELIN
Board Member

LANA STOCKMAN
Board Member

ALLAN DAWSON
Board Member

SANDRA GAMBLE
Board Member

Board member profiles are available on our website: https://www.ea.govt.nz/about-us/who-we-are/board/

STATEMENT OF RESPONSIBILITY

The Board is responsible for the preparation of the Electricity Authority's financial statements and statement of performance and for the judgements made in them.

It is responsible for any end-of-year performance information provided by the Electricity Authority under section 19A of the Public Finance Act 1989.

It has the responsibility for establishing and maintaining a system of internal control designed to provide reasonable assurance as to the integrity and reliability of financial and performance reporting.

In the Board's opinion, these financial statements and statement of performance fairly reflect the financial position and operations of the Electricity Authority for the year ended 30 June 2021.

Signed on behalf of the Board:

DR NICOLA (NICKI) CRAUFORD
Chair

Electricity Authority
3 December 2021

MARK SANDELIN
Audit and Finance Committee Chair

Electricity Authority
3 December 2021

CHIEF EXECUTIVE'S REPORT

The Authority continues to deliver against its five strategic ambitions for the sector: consumer centricity; trust and confidence; low-emissions energy; thriving competition; and innovation flourishing.

Our strategy positions us to steward the electricity sector's response to the Climate Change Commission's recommendations and at the pace required.

The future evolution of the electricity system will be achieved through innovation, which will lead to disruption in traditional business models and changes in the electricity system. This innovation will also be crucial in supporting New Zealand's climate change objectives, including the electrification of industrial heat and transport.

Consumer centricity in energy system development is a key enabler for innovation and further improving consumers' access to better pricing, control and ability to participate in markets. We will continue to put consumers front and centre of what we do and how we do it.

We know when consumers are well informed, they are empowered to make good choices. This year, the Authority amended the Electricity Industry Participation Code (Code) to raise consumer awareness of Utilities Disputes and Powerswitch. Through the Electricity Price Review and our own research, we knew many consumers weren't aware of Powerswitch or Utilities Disputes' services. Early indications show the increased awareness is having the desired effect, with many more consumers turning to Utilities Disputes and Powerswitch for help and advice.

The Authority collaborated closely with consumer representative groups, electricity retailers, and many others, to develop consumer care guidelines. The guidelines cover all consumers and focus on retailers developing a mindset of early engagement and proactivity, so positive outcomes are achieved for all.

In the wholesale market, we reviewed and strengthened regulatory settings to incentivise the right market behaviours and decisions to improve trust and confidence. This work is continuing and includes implementing enduring market-making arrangements, improving disclosure of internal transfer pricing and enhanced wholesale market information disclosure.

The Authority reformed the trading conduct rules. The previous rules weren't giving the protection and assurance the sector and consumers deserved. We changed the rules to build trust and confidence in the electricity market and the sector by giving more certainty in existing and new rules. The changes mean the trading conduct rules are easier to understand, comply with, and enforce.

The Authority aims to promote competition in and access to the distribution network to better support the transition to a low-emissions future at the pace required. Innovation within the distribution sector is critical to the transition to a low-emissions economy. Distributors play a critical role in the electricity system and have the opportunity to accelerate improvements and respond to the demand for transformation. The Authority has a work programme concentrated on distribution reform. We are working alongside other agencies and the industry to inform the problem definition and develop solutions. This workstream includes faster reform to efficient distribution pricing.

This work complements pricing reform projects underway to sharpen price signals for consumers and participants and encourage future investment in generation and new technology.

Transpower has submitted a proposed Transmission Pricing Methodology (TPM) to the Electricity Authority as provided for in the Code. The Authority considered the proposed TPM before consulting on it in the first half of 2021/22. If the Board decides to incorporate a new TPM into the Code, we will aim for new transmission prices to come into effect on 1 April 2023. I am grateful to Transpower for its work to date and look forward to working together in the next phase.

The Authority is focused on the performance of the electricity market, including its ability to support a level playing field to bring on new generation investment and to send the right signals about the cost of electricity to New Zealand businesses and consumers. We are thinking and acting more broadly to ensure we respond to a changing electricity sector, and the imperatives of climate change and economic recovery.

Central to our role as kaitiaki of electricity is our work to promote a good compliance culture among participants to drive better outcomes for consumers. We are focused on education to achieve voluntary compliance, active monitoring, and timely, proportionate enforcement action. This requires an uplift in our monitoring capability and a reset of our compliance function. We have been watching and investigating, increasing our focus on what's working and what's not, and helping participants to understand their obligations. We are gathering intelligence to inform our policy and Code development.

In December 2020, the Authority found an undesirable trading situation (UTS) occurred between 3 and 27 December 2019 due to a confluence of factors. The Authority concluded the situation was exceptional. Generators were faced with record-level inflows, resource and operational constraints. Water was abundant, cheap and available for generation, so much so that South Island hydro generators had to spill excess water to manage water levels and flows. At the same time, North Island generation was aiming to conserve fuel ahead of an impending gas and HVDC outage. There was a lack of competitive pressure, which meant prices remained relatively high despite an abundant supply of water and no increased demand during the period. The Authority decided the magnitude and duration of the event was such that confidence in the market may have been threatened.

The Authority released a final decision on actions to correct the UTS in August 2021. The actions to correct seek to restore trust and confidence in the market.

In response to the Authority's strategy reset last year, some changes have been made to the Senior Leadership Team and portfolios to ensure the right structure is in place to support delivery against all five sector ambitions.

As we look to next year, we will continue to work with the sector to collectively rise to challenges and unlock opportunities for innovation in the sector to support the transition to a low-emissions future. Consumers will continue to be at the heart of every decision we make.

JAMES STEVENSON-WALLACE
Chief Executive

3 December 2021

POST 30 JUNE 2021 DEVELOPMENTS

The grid emergency on 9 August 2021 was a very rare and serious event. The Authority takes any failure in the system very seriously. The Authority is using its statutory powers under section 16(1)(g) of the Electricity Industry Act 2010 (Act) to investigate exactly what happened on 9 August 2021. The Authority has completed phase one of its review of the 9 August 2021. This phase of the review sought immediate assurance that any systemic and process issues that led to the power cuts have been corrected.

SENIOR LEADERSHIP TEAM

JAMES STEVENSON-WALLACE
Chief Executive

JAMES TIPPING
Chief Strategy Officer

RICHARD EGLINTON
Chief Operating Officer

ROB BERNAU
Director, Network Pricing Directorate

SALLY AITKEN
Director, Communications and Engagement

ANDREW (ANDY) DOUBE
General Manager, Market Policy

SARAH GILLIES
General Manager, Legal, Monitoring and Compliance

STRATEGIC FRAMEWORK

In our 2020–2024 Statement of Intent (SOI) we set out the Authority's strategic framework, along with impact measures and targets for our long-term strategic intentions.

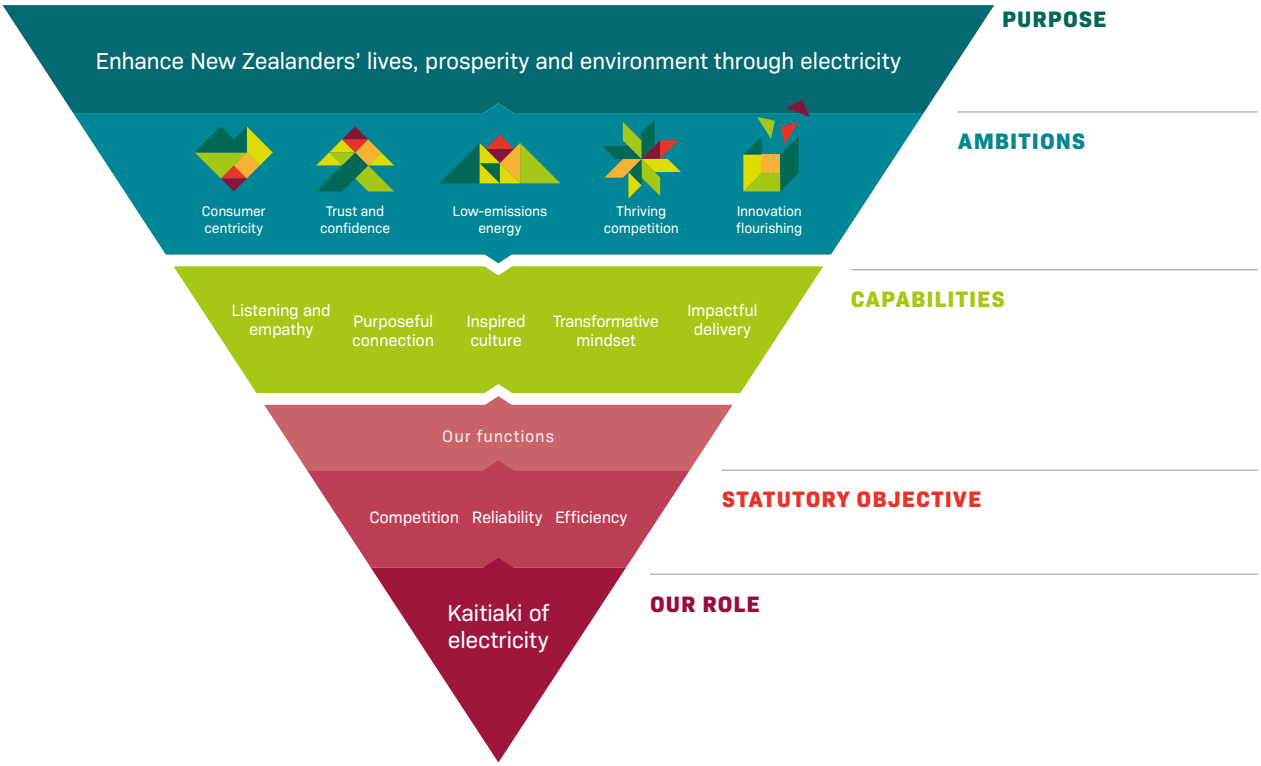
As the regulator of New Zealand's electricity system, our work provides a platform for the country to achieve its aspirations for enhanced quality of life, prosperity, the environment, and the transition to an electrified low-emissions economy.

Our integrated framework sets out five strategic ambitions for the sector that guide the prioritisation of our work supported by five key strategic capabilities in which we invest for success.

The ambitions provide focus in both the pursuit of our statutory objective and our purpose – ensuring we create wider long-term benefit for New Zealand.

This annual report is the first to report against this strategic framework.

FIGURE 1: OUR STRATEGIC FRAMEWORK



Refinements for 2021–2025

Throughout 2020/21, we worked to refine and operationalise the performance measures related to our strategic ambitions and statutory objective. These refinements have been published in an updated SOI for 2021–2025 and reflect our long-term strategic intentions for the next four years.

You can read the updated SOI and learn more about the Authority's strategy by visiting www.ea.govt.nz/statement-of-intent

Where practicable, results included in this annual report will act as a baseline for future performance measurement.

PART 1

REPORT ON OUR STRATEGIC AMBITIONS

We have been successful in promoting strong competitive markets. Our current strategy reflects that we're thinking more broadly to ensure our regulation responds to a changing world.

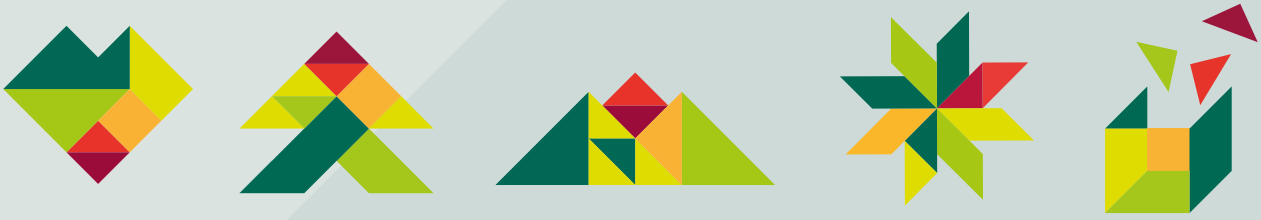
Our strategic ambitions for the sector are more than an aim or a prioritisation tool – they describe success and how the electricity industry can make a difference.

- We want **low-emissions energy** to electrify the economy.
- We want **consumer centricity** to guide regulation and the industry.
- We want to build **trust and confidence** in the industry for all stakeholders.
- We want to see **thriving competition** delivering better outcomes for New Zealanders.
- We want to see **innovation flourishing**.

The 2020/21 financial year marks the first year we have reported on the impact measures for our strategic ambitions.

Reporting on impact measures includes a mix of statistical analysis and qualitative assessments. We use the data that we collect throughout the year, independent assessments and reviews, and perception surveys to understand our progress against the ambitions.[1]

The results provided against the impact measures for each ambition act as a baseline that we will use to measure progress over time. Going forward, we will compare future years' results to the results reported here. Due to the long-term nature of our ambitions, it may take several years for measurable change to become clear.



1 Final reports of the UMR participant and consumer surveys and the MartinJenkins independent assessments are available on our website: https://www.ea.govt.nz/about-us/corporate-projects/202021-planning-and-reporting

LOW-EMISSIONS ENERGY

Enabling the transition to a low-emissions energy system is a focus for the Authority.

The release of the Climate Change Commission's advice represents a call to action for New Zealand – reinforcing that electrification of heat and transport and increases in renewable generation are key enablers in the transition to a low-emissions economy.

The required level of investment in new generation will be significant, as are the opportunities for innovation and consumers' participation to help drive the transition.

We are already working hard to ensure that the transition occurs efficiently over the coming decades, and that New Zealanders have trust and confidence in the ability of the system to remain affordable and reliable as it carries a greater responsibility for New Zealand's energy needs.

In 2020/21, we have continued to implement key projects including real-time pricing and the Transmission Pricing Methodology review to promote a stable investment environment with robust rules and clear price signals. Announcements of a series of new renewable generation projects and innovative approaches illustrate an already proactive industry acting on price and policy signals.

Impact measures

ACTION	MEASURE	SOURCE	DESIRED TREND	2020/21 RESULT
Ensure electricity market settings and conditions support an efficient transition to low-emissions energy, through competition, whilst maintaining reliability	Market participant confidence in settings to facilitate efficient transition	Participant survey	Increasing	**37%** of participants agreed that electricity market settings will support an efficient transition of the energy sector to low-emissions.
	Market participant confidence in reliability as New Zealand transitions to low-emissions energy	Participant survey	Increasing	**48%** of participants agreed that the electricity system will maintain reliability through the transition to low-emissions energy.
Implement price signals that facilitate lowest overall cost to consumers, including through investment in and operation of energy technology and demand-side flexibility	Level of implementation of cost-reflective network prices, transmission pricing and real-time pricing	Authority data	Implementation increasing	**Network pricing** (distribution pricing): The average across all distributors' 2021 annual scorecard assessments was **3.0 out of 5.** **Transmission pricing** (TPM): Progress of implementation of the new **TPM is on track.** **Real-time pricing** (RTP): Progress of implementation of the **RTP project is on track.**

These results set a baseline against which we can measure future progress. Our goal is to see participant confidence and the implementation of price signals improving over time.

PERCEPTION SURVEY

Just under half of the participants surveyed have confidence in system reliability through the transition to low-emissions energy, while roughly a third agreed that market settings will support an efficient transition. Participant confidence in the system's ability to maintain reliability during the transition to low-emissions energy was supported by the generation assets that are already in place. However, others highlighted issues impacting the transition to low-emissions such as incorrect market settings and a view that the current system is not designed for electrification.

PRICE SIGNALS

Network pricing (distribution pricing): In the distribution pricing scorecard assessments, the Authority produces a score for each distributor aggregated across six categories. Throughout 2020/21, several distributors made significant improvements, particularly with their pricing strategies and roadmaps – six stand out, with Aurora and Wellington Electricity the most improved.

For network pricing, the overall improvement related to distributors' 2021 pricing methodologies compared to 2020. In 2020, the average annual scorecard assessment (aggregated across six categories) across all distributors was 2.7 out of 5. The 2021 average scorecard assessment has increased to 3.0 out of 5, with a range of 1.7 to 4.2 out of 5.

Note, distribution scorecards were implemented in 2020. Going forward, and for the desired trend 'implementation increasing', this part of the performance measure is calculated by improvement in the aggregated scores.

Transmission Pricing Methodology (TPM): The implementation of TPM is on track, having met the milestones for 2020/21. Transpower submitted its proposed TPM to the Authority on 30 June 2021 (on target), following completion of the checkpoints process set out in the Authority's 2020 decision on TPM Guidelines and process.[2]

Real-time pricing (RTP): The implementation of the RTP project is also on track, having met its 2020/21 milestones. The first software milestone was implemented in May 2021 (on target). The second milestone for the project is due in March 2022.

2 https://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/transmission-pricing-review/development/tpm-decision-and-guidelines/

CASE STUDY

More accurate and actionable wholesale pricing on the way.

The real-time pricing (RTP) project reached a significant milestone in May 2021 when the first phase of software delivery was completed.

The Authority is preparing to move to real-time prices in late 2022. This will make the spot market simpler. Prices will be driven directly by live conditions on the power system rather than calculated separately the next day using different information. Consumers will be able to adjust their own electricity consumption in response to changes in pricing with confidence they are reacting to the correct price.

More accurate and actionable wholesale pricing in real time will also promote the integration of increased renewable generation as New Zealand transitions to a low-emissions economy.

RTP will add a low-cost path for small providers (such as residential solar and battery systems), and participants who aggregate small providers, to bid and offer their resources into the wholesale market. This will enable the system operator to use that information in the market schedules to balance the volatility of variable renewable generation. It will help mitigate price volatility within a trading period as wind and solar generators ramp up and down in response to their respective resources.

Allowing these distributed resources to bid and offer into the market will contribute to displacing gas-powered peaking plant in managing short-term changes in renewable generation output.

Alongside our project delivery partners NZX and Transpower as system operator, we have developed a series of webinars explaining the changes being implemented and their impacts on market participants. These webinars are focused on the participant experience and how the changes to the market will impact their day-to-day operations. All webinars have been recorded and are available on the Authority's website.

Further materials are being developed to prepare the industry for the changes to come with RTP and to stimulate discussion around the opportunities for innovation that will accompany the RTP changes.

CONSUMER CENTRICITY

Incorporating the consumer voice and an increased understanding of our wider operational environment in our work enables us to more deeply consider how our decisions will affect outcomes for all consumers – whether they are domestic, community, small, medium or large businesses, or industrial.

When decision-making by the industry and by regulators is centred around consumer outcomes, more diverse needs can be met and expectations exceeded.

Ever mindful of the ongoing challenges caused by the COVID-19 pandemic, in 2020/21, key projects such as the consumer care guidelines considered how influencing the relationship between retailers and their customers could lead to improved experiences and outcomes for all domestic consumers.

Similarly, our work to raise awareness of Powerswitch and Utilities Disputes services through retailers' communications with their consumers will lead to informed and empowered consumers who make good choices. This drives retailers to innovate and provide better service and access to more competitive pricing.

Consumer centricity in energy system development drives competition and furthers consumers' ability to participate in energy markets. We will continue to put consumers and our understanding of their varied needs and perspectives front and centre of what we do and how we do it.

Impact measures

ACTION	MEASURE	SOURCE	DESIRED TREND	2020/21 RESULT
Provide clarity on consumers' needs and the impact our decision-making has on those needs being met	Assessment of the quality of our decision-making on meeting consumers' needs	Independent assessment	Increasing	**3.9 out of 5.**
Increase the participation of, and engagement with, consumers in our decision-making processes	Assessment of the quality of our engagement with consumers in our decision-making processes	Independent assessment	Increasing	**3.7 out of 5.**

These results set a baseline against which we can measure future progress. Our goal is to see the results of the independent assessments improving over time as we continue to keep consumers at the forefront of what we do.

In 2020/21, we commissioned MartinJenkins to carry out an independent assessment of the above measures.[3] The assessments used the following scale to rank the Authority's performance against each measure. Based on this scale, the Authority received high 'satisfactory' marks, and was on the cusp of 'very good' for one of the measures.

GRADE AND ASSESSMENT

In its report, Martin Jenkins highlighted that:

... the Electricity Authority are innovating in this space ... [however] the levels of understanding that they are currently working with requires greater sophistication to meet their ambitions for consumer centricity that they have set themselves. Add to this, the emerging socioeconomic, political, and environmental complexities that have been accelerated by the global COVID-19 pandemic, the challenge is palpable for the Electricity Authority, and for Aotearoa New Zealand.

With our ambition to see consumer centricity guiding regulation and the industry, we want to improve how we understand and factor in consumers' needs into our decision-making and how we engage with consumers through our decision-making processes. The independent assessments recognised the effort that the Authority is putting into gaining consumer insights, noting that we have stepped up our game in this area. The report acknowledges the challenges we face in this ambition and identifies where we can continue to improve in the future.

3 The full report of the MartinJenkins independent assessments is available on our website: https://www.ea.govt.nz/about-us/corporate-projects/202021-planning-and-reporting/

CASE STUDIES

Empowering consumers

The Electricity Price Review and the Authority's own research found many consumers were not aware of Powerswitch or Utilities Disputes. Subsequently, the Authority amended the Electricity Industry Participation Code (Code) to raise consumer awareness of Utilities Disputes and Powerswitch. From 1 April 2021, retailers and distributors have been telling their consumers about Utilities Disputes. Retailers have also been letting their consumers know about Powerswitch. Raising awareness of Powerswitch and Utilities Disputes ensures consumers know about these services and are empowered to make good choices.

Mary Ollivier, Commissioner of Utilities Disputes, says,

"Early indications are that **this increase in awareness is having the looked-for effect of consumers knowing** they can call Utilities Disputes with any concerns about their electricity provider for independent help."

Since 1 April 2021, Utilities Disputes has received a significant increase in the number of cases received. "The past three months have seen cases rise by 89 percent from the same three months last year, which itself was the busiest year in Utilities Disputes' history."

Powerswitch has also had a significant increase in visits to its site. Powerswitch is run by Consumer New Zealand. Its Chief Executive Jon Duffy says, "We are pleased to be reaching more New Zealanders with price comparisons from a range of energy providers. Encouraging consumers to think more regularly about their choice of retailer, rather than a set-and-forget approach, benefits all consumers by stimulating competition."

Caring for consumers

From mid-2020, the Authority worked closely with a range of stakeholders including consumer representative groups, large and small electricity retailers, distributors, academics researching energy poverty, and support and government agencies, to inform the development of consumer care guidelines to improve outcomes for all electricity consumers.

The consumer care guidelines encourage retailers to proactively enhance the standard of care provided to all domestic consumers. They replace the existing guidelines and addendum on arrangements for retailers to assist medically dependent and vulnerable consumers.

Through the development of the consumer care guidelines, the Authority heard vulnerability takes many forms and can impact any person temporarily or permanently at any time. For that reason, the guidelines focus on retailers having a mindset of early engagement and proactivity, so positive outcomes are achieved for all consumers, not just a subset of consumers defined at a point in time.

The consumer care guidelines took effect on 1 July 2021. All retailers are expected to align with them fully by 31 December 2021.

TRUST AND CONFIDENCE

Consumers expect participants to be held to account to rules designed to provide long-term benefit. Participants require a stable investment framework and regulatory environment to enable decision making that will deliver further benefit to consumers.

We monitor industry closely and act when required – in general, favouring a largely non-interventionist, facilitative approach.

During the year, the Authority provided in-depth analysis and commentary and progressed/delivered key wholesale market enhancement projects to address concerns around the efficiency of the electricity system and its ability to meet consumer demand in the face of constrained energy supply and dry year risk.

We also concluded an extensive investigation – determining that an undesirable trading situation (UTS) had occurred in December 2019. As at 30 June, the Authority was yet to release a final decision on actions to correct the UTS.[4]

We will continue to emphasise the development of rules that promote consumer choice, provide clear investment signals and treat participants equally, and actively build trust and confidence in the industry and regulation by driving greater transparency, understanding and improved behaviours.

4 A final decision on actions to correct was released early in the 2021/22 financial year.

Impact measures

ACTION	MEASURE	SOURCE	DESIRED TREND	2020/21 RESULT
Increase our industry leadership, and build trust and confidence in how we are taking up our kaitiaki role	Participant perceptions of trust and confidence in us and how we are fulfilling our role	Participant survey	Increasing	**37%** of participants agreed that they have confidence in the role the Authority plays as kaitiaki of the electricity sector.
Increase active monitoring and reporting on the operation of the sector to improve conduct and compliance	Participant perceptions of the quality of our monitoring	Participant survey	Increasing	Overall, **50%** of participants agreed with the range of statements on the quality of our monitoring.
Monitor and enhance the operational efficiency and reliability of the electricity industry on an ongoing basis	Participant perceptions of reliability and operational efficiency	Participant survey	Increasing	Overall, **63%** of participants agreed with the range of statements on the electricity sector's reliability and operational efficiency.
Increased knowledge gained by consumers and, more broadly, about New Zealand's electricity sector and the energy trilemma trade-offs	Assessment of the quality of material produced (e.g. EMI reports, thought pieces)	Independent assessment	Increasing	**4.2 out of 5.**

These results set a baseline against which we can measure future progress. Our goal is to see participant perceptions and the independent assessment results improving over time.

PERCEPTION SURVEY

While over a third (37 percent) of participants have confidence in the role the Authority plays as kaitiaki of the electricity system, nearly the same amount (35 percent) do not. There is an opportunity for the Authority to improve participant confidence in us as kaitiaki.

Participants have more confidence in the electricity system delivering a high level of reliability, and of our monitoring of market outcomes than they do in other areas. Respondents noted the work the Authority has done to increase our monitoring capacity and capability. However, factors that impacted perceptions of trust and confidence include a lack of scrutiny on gentailer behaviour, the fragmented nature of the sector, and monitoring of outcomes for consumers.

INDEPENDENT ASSESSMENT

As with the consumer centricity independent assessments, we commissioned MartinJenkins to undertake the independent assessment in 2020/21. The Authority was rated 4.2 out of 5 ('very good') for the quality of material we produce to increase consumers' knowledge about New Zealand's electricity sector and the trade-offs in the energy trilemma (affordability, reliability, sustainability).

In its assessment, MartinJenkins noted:

The way the material is documented and the way it supports consumers' knowledge of the electricity sector and the energy trilemma is done well in the documents and projects under review. The Electricity Authority has a real opportunity to communicate more to the Aotearoa New Zealand public as climate change becomes so central to consumers' lives and the way the electricity ecosystem works becomes even more important to the whole country.

Establishing and maintaining trust and confidence in what they do in the electricity ecosystem is integral to the Electricity Authority as a regulator and kaitiaki of electricity. They are rigorous about documenting decision making processes and striving for transparency.

CASE STUDIES

New rule clarifies expected behaviours in the wholesale electricity market

In June 2021, a new trading conduct rule came into force. The new rule is the result of a comprehensive review led by the Authority and its Market Development Advisory Group.

At times, New Zealand's electricity system relies heavily on one or a small number of suppliers to meet demand. The trading conduct rule prevents suppliers taking advantage of such situations. The rule sets out the expected behaviour while still allowing prices to signal genuine scarcity of supply.

The previous rules may not have given the protection and assurance the sector and the public deserve, which is a reason why we decided to make changes. Most stakeholders agreed the previous rules lacked clarity and needed revising.

The review process was thorough given the difficult nature of the rules and the need to consider many different scenarios. The review involved multiple considerations with interested parties as well as the use of expert panels to test options.

We consider the new trading conduct rule will be easier to understand, comply with, and enforce. The rule is expected to provide clarity and strengthen confidence in the wholesale electricity spot market for the long-term benefit of consumers.

We are now **actively monitoring** the new rule as part of an enhanced monitoring, enforcement and compliance regime.

The trading conduct review is part of a suite of projects the Authority has underway to improve trust and confidence in the wholesale market. These projects include implementing enduring market-making arrangements, improving disclosure of wholesale market information and mandating the disclosure of internal transfer pricing and retail gross margin reporting.

Uplift in compliance

A good compliance culture among participants drives better outcomes for consumers. The Authority has been increasing its focus on what's working and what's not and helping participants to understand their obligations.

Following an investigation by the Authority, Genesis Energy Limited agreed to settle and offer compensation to other retailers following breaches of the saves and win-backs clause of the Code.

'Saves and win-backs' is the term used to describe two ways a retailer may seek to win a customer back after that customer agrees to switch to another retailer. Saves and win-backs make it difficult for other retailers to acquire customers, and can discourage potential entrants, both of which reduce competition in the sector. The Authority thinks it is important for all retailers to have an equal opportunity to compete for customers. From 31 March 2020, the switch protected period was extended to 180 days.

The Code does not prevent customers from initiating contact with the losing retailer or any other retailer to seek a better deal.

On 31 March 2020, Genesis contacted customers who were switching to other retailers, to try and persuade them to terminate their arrangements and stay with Genesis. Genesis made approximately 224 potential win-back attempts across 20 retailers and successfully retained 25 customers.

In May 2021, the Authority approved a settlement that required Genesis to compensate retailers $600 for each lost customer, totalling $15,000.

The promotion of competition and associated benefit to consumers is at the forefront of the Authority's work.

Security of supply

The 2021 security of supply event tested the supply management settings within the electricity system. It identified the Authority's need to understand the availability of thermal fuels for electricity generation and the extent to which large industrials were exposed to, and able to manage, high spot prices.

Low hydro inflows and restrained gas supply meant there were risks around the ability of the electricity system to maintain security of supply over the winter period.

Given the challenges facing the gas sector, there was particular concern around thermal generators' contracted supply of gas, and ability to secure additional fuel if required.

The Authority has powers under section 46(2)(a) of the Electricity Industry Act 2010 to require participants to provide information, including commercially sensitive information, so the Authority can carry out its monitoring, compliance and market facilitation functions. In April 2021, the Authority used its section 46 powers to:

- get assurance all appropriate actions were being taken to ensure thermal generation was well placed to supplement New Zealand's renewable resources during the evolving security of supply situation
- ensure the wholesale electricity spot price reflects the actual fuel supply position of generators
- confirm the system operator's assessment of the security of supply risk was robust
- understand the ability of industrial consumers to withstand high spot prices and whether there were any impediments to them obtaining hedges to manage their spot price exposure.

Information was requested from Transpower as the system operator, thermal generators and industrial consumers.

The granular information was used to verify steps the thermal generators were taking to ensure they were able to operate throughout the winter period and secure the fuel needed to maintain security of supply. The information also provided insights into demand response and the impact of high wholesale prices on large industrial consumers.

The information the Authority received in response to the section 46 requests provided assurance that:

- large industrials understood their risk positions and had made informed decisions about their hedging strategy
- generators had the appropriate incentives and arrangements in place to secure the additional fuel required to manage security of supply in a dry year
- the system operator's assessment of the security of supply risk was sound overall.

This work prompted serious conversations with participants and industry consumers to ensure the Authority had a complete picture that the security of supply situation was manageable. It also identified there were areas that could be improved for the winter period of 2022.

THRIVING COMPETITION

Market competition is a key enabler to deliver a better energy future – driving progress, efficiency and valuable outcomes for New Zealand.

Increased disruption to traditional electricity business models and industry structure through competition improves choice, control and affordability for consumers.

Over the years, our market-oriented solutions have successfully reduced barriers to retail participant entry and expansion. In the past year, we have continued to progress pro-competitive measures, including facilitating robust and evolving market making and increased information disclosure.

Competitive pressure is starting to expand across new parts of the supply chain. Electricity distribution businesses such as Aurora are taking positive steps towards the increased use of contestable non-network alternatives to deliver their services, and we are seeing an increase in independent renewable generators preparing to enter the market using innovative deployment of renewable technology.

We're committed to encouraging participation and reinforcing competition in traditional and emerging markets, and we will continue to put in place the mechanisms needed to maintain a level playing field so that participants can provide consumers value for money and a growing range of innovative products and services.

Impact measures

ACTION	MEASURE	SOURCE	DESIRED TREND	2020/21 RESULT
Identify and remove inefficient barriers to new entrants entering and competing with established participants, especially in the wholesale market	Participant perceptions of the ability for new entrants to compete with incumbents	Participant survey	Increasing	Overall, **18.5%** of participants agreed that new entrant retailers and generators can compete on a level playing field with established retailers or generators.
Ensure networks are open and that regulatory and market settings enable the full potential of Distributed Energy Resources (DERs) to be realised for all New Zealand electricity consumers	Number of network companies seeking to procure non-network services on a competitive basis	Network company survey	Increasing	**Three out of 19 (16%)** of the network companies surveyed are seeking to procure non-network services on a competitive basis.
	Number of participants providing non-network services to network companies	Network company survey	Increasing	Of the 19 network companies surveyed, **one** is currently receiving non-network services from a participant.

These results set a baseline against which we can measure future progress. Our goal is to see participant perceptions of competition and the number of non-network services provided improving over time.

PERCEPTION SURVEY

Half of all respondents (49.5 percent) disagreed that new entrant retailers and generators could compete on a level playing field with established organisations. This increases to 79 percent for participants whose organisation had been in the industry for 10 years or less.

Participants whose organisation had been in the electricity sector for more than 20 years were the most likely to agree that new entrants could compete with existing companies (15 percent). No participants whose organisation had been in the sector for under two years agreed that there was a level playing field.

In their answers, respondents' reasons for disagreeing included current conditions and market settings and the advantage of incumbents' existing customer bases and experience in the sector. Some respondents noted that, while new entrants could compete in theory, it was quite different in practice.

Network companies: Of the 19 respondents who indicated they are a network company, three have sought to procure non-network services in the past two years, with one currently receiving these services.

CASE STUDY

Greater access to thermal fuel information

An effective information disclosure regime is important for a well-functioning electricity market. Reducing information asymmetry drives competition and supports participants' confidence in the efficiency of spot and forward prices.

Disclosure rules need to continually evolve to meet the needs of the market over time. This year, we completed our review of thermal fuel information disclosure rules, which was initiated after spring 2018 (when extended Pohokura gas supply outages caused wholesale electricity price increases) and a recommendation from the Electricity Price Review, which highlighted the rules may not be fit for purpose.

We amended the Code to place an obligation on a new class of participant, called major participants, to report to the Authority on how they meet their disclosure obligations.

This reporting will allow the Authority and market participants to understand the extent to which major participants rely on exclusions to the disclosure obligations in the Code.

It will cause **major participants to focus more strongly** on making sure they meet their obligations.

To help participants find information that may be useful in understanding the thermal fuels market, we also updated the disclosure guidelines and published a list of websites containing information disclosed about thermal fuels.

These decisions will help build participants' confidence in the market by allowing them to better manage risk by giving them more visibility of market activities, which will ultimately benefit consumers in the long term through more efficient prices.

INNOVATION FLOURISHING

The unique challenges of New Zealand's electricity market have led to innovative approaches to wholesale, retail, reserve management, security of supply, and supporting participants to manage risk.

The Climate Change Commission's advice reinforces that continued transformational change will be required.

Ongoing evolution of the electricity system will be achieved through innovation and disruption, with both participants and the Authority thinking beyond the status quo as we seek to meet consumer needs and support the transition to a low-emissions energy system.

We work to unlock the full benefits of and opportunities for innovation for consumers by making sure regulatory settings are conducive to innovation and industry success. This demands a proactive, agile and forward-looking regulatory approach to match the pace of change and help innovation flourish.

Already, we are starting to see innovation and technology being tested and deployed in new ways that will enhance how electricity is generated, distributed and consumed, and ultimately change the cost and competitive structure of the industry.

Impact measures

ACTION	MEASURE	SOURCE	DESIRED TREND	2020/21 RESULT
Increase the availability and transparency of industry data	Number of data transactions we have facilitated	Authority data	Increasing	In 2020/21, the number of data transactions facilitated was **1,367,765**.
	Number of new datasets we have provided access to	Authority data	Increasing	In 2020/21, **10** new datasets were made available on EMI.
Increase the ability of the regulatory system to accommodate new business models	Participant perceptions of the ability of the system to support rapid change	Participant survey	Increasing	**18%** of participants agreed that the regulatory environment supports new business models and technology.
	Number of sandboxes, trials and pilots in play across the network	Authority data	Increasing	At 30 June 2021, there were **two** small-scale trials in play.

These results set a baseline against which we can measure future progress. Our goal is to see participant perceptions and the number of data transactions, datasets, and trials improving over time.

DATA TRANSACTIONS

The data transactions facilitated in 2020/21 include report views, dashboard views and dataset downloads from our Electricity Market Information (EMI) website.

PERCEPTION SURVEYS

Participants tended to believe that the regulatory system does not currently support rapid change (45 percent) or had no strong opinion on the matter (30 percent). In their comments, respondents suggested that there was limited ability to adapt quickly under the current market settings and structures.

SANDBOXES, TRIALS AND PILOTS

The Authority has been working with the following organisations to facilitate small-scale trials below the level of the Code:

- Ara Ake for multiple trading arrangements
- Kāinga Ora for a type of peer-to-peer trade.

These trials will indicate the degree of consumer benefits that could be expected with a large-scale trial and what, if any, Code impediments exist.

CASE STUDY

Energy storage systems

To ensure consumers benefit from an evolving electricity system, the Authority will amend the Code so energy storage systems like batteries can participate and compete in the reserves market.

This work promotes competition in the electricity industry by enabling new technology to participate in the instantaneous reserves market, therefore producing downward pressure on reserve prices earned by existing technologies. It will also support the reliable supply of electricity to consumers by broadening the range of technologies that can provide instantaneous reserve.

This amendment is particularly timely as several parties have already invested in network-connected battery technology in New Zealand, and others have announced their interest in battery options at significant scale, in the order of 100MW or more.

In addition, the cost of battery energy storage systems has markedly decreased in recent years and is expected to continue to do so, with global levels of investment rapidly increasing.

Increasing the amount of instantaneous reserve in the market is good for competition and enhances the capacity of the grid to securely and reliably transmit electricity around the grid and between the two main islands.

Subject to required consultations, the Code changes are likely to be in place by April 2022, following further work by the system operator and the Authority to develop a complementary amendment to the system operator's ancillary services procurement plan.

PART 2

REPORT ON OUR OUTCOMES

Our outcomes

THE OUTCOMES WE ACHIEVED FOR THE LONG-TERM BENEFIT OF CONSUMERS AND NEW ZEALAND

The Electricity Industry Act 2010 (Act) gives us a statutory objective to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.

We use outcome measures for competition, reliability and efficiency to see how successful our work has been at achieving our statutory objective. Progress is measured through quantitative metrics like statistics, as well as qualitative data collected through surveys of both consumers and industry participants.

The measurement of these outcomes is complex, with many influencing factors. Cause and effect relationships between our work and measurable change in electricity markets is not always straightforward, and it can take several years for change to become clear. Factors outside the control of the Authority can also have a major influence, causing variations in the results from year to year.

Our outcome measures are designed to be analysed over the medium to long term. As such, some results may cover multiple years rather than just 2020/21. In 2020/21, we also carried out a review of our survey-based measures, and this report marks the first time the results of the new surveys are reported.[5] Going forward, these new results will act a baseline to measure progress against.

This section is a summary of progress to date against the competition, reliability and efficiency parts of our statutory objective. Appendix A includes more detailed trend information.

HOW OUR OUTCOMES ALIGN WITH OUR STRATEGIC AMBITIONS

Our statutory objective is linked to our strategic ambitions. We use Competition, Reliability and Efficiency together to drive the success of our ambitions.

We use a holistic system-based approach towards achieving our ambitions and outcomes, highlighting how the two work together to achieve our purpose. Our approach means that the outcome measures for our statutory objective also contribute to our strategic ambitions. However, while they contribute to the ambitions, outcome measures are not used to directly measure progress against a given ambition – this is measured with impact measures.

The following table summarises how our strategic ambitions align to our statutory objective. Each ambition has a primary relationship to a part of our objective and may also have a secondary or tertiary relationship. The sizes of the circles indicate the level of relationship between an ambition and part of our objective.

We go into further detail on how our outcomes and ambitions work together in our revised SOI 2021–2025.

STATUTORY OBJECTIVE (OUTCOME MEASURES)	STATUTORY AMBITION (IMPACT MEASURES)				
	LOW-EMISSIONS ENERGY	CONSUMER CENTRICITY	TRUST AND CONFIDENCE	THRIVING COMPETITION	INNOVATION FLOURISHING
COMPETITION					
RELIABILITY					
EFFICIENCY					

5 The final UMR participant and consumer survey reports are available on our website: https://www.ea.govt.nz/about-us/corporate-projects/202021-planning-and-reporting

Competition

WE ENCOURAGE COMPETITION IN ALL ELECTRICITY-RELATED MARKETS

Competition helps ensure New Zealanders have plenty of choice about how they get and use electricity and improves their access to competitive pricing. We encourage competition in electricity markets across the supply chain, taking into account the long-term opportunities that will lead to better outcomes for consumers.

Competition can lead to large value gains for consumers, driving industry participants to continually look for new, more efficient and effective ways to serve their customers.

Competition also assures consumers they are paying reasonable prices and have options to find an electricity retailer that meets their needs. Innovative retailers seek to better understand their customers and invest in new technologies and new partnerships to provide more value to their customers.

OUTCOME MEASURE	HOW WE MEASURE RESULTS	DESIRED TREND	2020/21 RESULT
Improved participant perceptions of the competitiveness in electricity markets	Percentage of participants who agree with a range of statements on electricity market competitiveness: 1. Competition between electricity generators ensures wholesale market prices are set at an efficient level (i.e. there is a balance between the amount of generation and cost) 2. Competition between electricity generators ensures they build the most efficient power stations 3. Competition between retailers ensures that consumer prices only rise in line with costs to the electricity companies	Increasing	Overall, **36%** of participants agreed with the range of statements on electricity market competitiveness.
	Percentage of participants who agree that prices in the following electricity markets reflect the outcomes expected in a workably competitive market: a. Retail market b. Spot market c. Hedge market, including ASX and OTC d. Ancillary service markets	Increasing	Overall, **29%** of participants agreed with the range of statements on prices in electricity markets reflecting the outcomes expected.

OUTCOME MEASURE	HOW WE MEASURE RESULTS	DESIRED TREND	2020/21 RESULT
Improved consumer perceptions of the competitiveness of electricity markets	Percentage of consumers who agree with a range of statements on electricity market competitiveness: 1. I have a choice in my electricity provider 2. I can find a power company that meets my needs 3. Having a choice of power companies means I can find a fair price	Increasing	Overall, **75%** of consumers agreed with the range of statements on electricity market competitiveness.
Overall improvement across a suite of statistics on electricity market competition	Overall improvement in the following statistics: ▪ Retail market concentration (HHI statistic) ▪ Retail market share (CR4 statistic) ▪ Net pivotal analysis ▪ Hedge market concentration (HHI statistic) ▪ Concentration in the ancillary services market (HHI of reserves statistic) ▪ Number of retailers' approaches to consumers with offers to induce switching (measured by survey)	Improving	Five of the six statistics either improved (3) or remained stable (2) over the year. The number of retailers' approaches to consumers continued to fall in 2020/21.

PERCEPTION SURVEYS

Participants rated lower levels of agreement with statements on competition than consumers. Just over a third of participants agreed with the range of statements on the competitiveness of electricity markets as a whole – even less when the questions focused on specific markets. Their comments highlighted factors such as established retailers' existing customer bases and ability to keep prices artificially low, and pricing structures of the various markets not working in customers' best interests.

In the consumer survey, three quarters of respondents agreed with the statements on electricity market competitiveness. However, some respondents commented that the electricity retail market, and the pricing models of retailers specifically, were confusing and made it difficult to compare prices of different retailers. Others noted that the variation in price between electricity retailers was minimal, so it didn't make sense for them to change providers, with many also commenting on the cost of electricity in New Zealand in general being too high.

STATISTICS

We use statistics that measure market concentration and market share as indicators to assess the structure of the market, where a less-concentrated market can indicate greater competition. For many of these statistics, we use the Herfindahl-Hirschman Index (HHI) to measure concentration – a high HHI indicates a more-concentrated market, suggesting less competition.

In 2020/21, the retail market saw a continued downward trend in the HHI and the concentration ratio of the four largest retailers' market share (CR4 statistic), suggesting an ongoing improvement in market competition. HHI statistics for other markets remained low and stable, which suggests consistently low market concentration over time.

Further details of the 2020/21 results, including details on how the statistics are used, can be found in Appendix A.

Reliability

WE SEEK RELIABLE DAY-TO-DAY AND LONG-TERM SECURITY OF ELECTRICITY SUPPLY FOR CONSUMERS

Reliability is important because homes and businesses depend on having a continuous supply of electricity. Our regulatory focus on reliability will become even more important as the country reduces emissions through increased electricity use.

Reliable supply refers to both the reliability of supply, in terms of the quality and physical continuity of electricity supply and the security of supply – for example, the risk of supply shortages putting upward pressure on electricity prices.

We facilitate industry participants' development and operation of the electricity system to manage security and reliability in ways that minimise total costs while being robust to adverse events. Adverse events may include a severe drought, major storms, an earthquake or a cyberattack.

OUTCOME MEASURE	HOW WE MEASURE RESULTS	DESIRED TREND	2020/21 RESULT
Improved participant perceptions of the efficiency of supply reliability	Percentage of participants who agree with a range of statements on electricity supply reliability: 1. There is a reliable supply of electricity each day 2. There is enough electricity to meet ongoing needs	Increasing	Overall, **72%** of participants agreed with the range of statements on electricity supply reliability.
Improved participant perceptions of the balance between the cost and reliability trade-offs	Percentage of participants who agree with a range of statements on the balance between the cost and reliability trade-offs: 1. The current electricity market arrangements ensure an appropriate balance between reliability and cost 2. Over the next 10 years, the electricity system will strike a balance between reliability and cost	Increasing	Overall, **36%** of participants agreed with the range of statements on the balance between cost and reliability trade-offs.
Improved consumer perceptions of the reliability of electricity in New Zealand	Percentage of consumers who agree with a range of statements on electricity reliability: 1. It's rare to experience an unplanned power cut 2. If there is an unplanned power cut, it gets fixed quickly 3. There is enough electricity to keep New Zealand homes and businesses powered in the future	Increasing	Overall, **64%** of consumers agreed with the range of statements on electricity reliability.

OUTCOME MEASURE	HOW WE MEASURE RESULTS	DESIRED TREND	2020/21 RESULT
Overall improvement across a suite of statistics on efficient levels of reliable electricity supply	Overall improvement in the following statistics: ▪ Pricing in scarcity events reflects opportunity cost, as measured by case-by-case analysis ▪ Effective management of dry years or emergency events, as measured by case-by-case analysis ▪ Capacity and energy margins are within efficient bounds or are moving towards those bounds, as measured by the annual security assessment ▪ Investigation of reliability events does not identify systemic issues, as measured by case-by-case analysis	Improving	Initial reviews suggest the statistics performed as expected. Further detailed analysis of pricing in scarcity events and management of dry years is ongoing, with results expected in 2021/22.

SURVEY RESULTS

Nearly three quarters of participants agreed that there is a reliable supply of electricity that will meet ongoing needs. Interestingly, the survey was run during a period with dry year and security of supply risk (where a dry period means hydro lake levels are lower than expected). While it would have been reasonable to expect a lower level of agreement with reliability due to this, the results here indicate a high level of confidence in the reliability of electricity systems.

However, participants were less convinced that electricity market arrangements meet the balance between reliability and cost, with just over a third of participants agreeing with the range of statements. In their comments, survey respondents raised several issues relating to risks, challenges and unknowns to future supply that make it difficult to anticipate if there is enough electricity to meet ongoing needs, or if the future electricity system will strike a balance between reliability and cost.

Meanwhile, the majority of consumers agreed with statements around electricity reliability now and in the future. However, they noted concerns about future power demands, including power shortages and subsequent power cuts, the impact of a growing population on New Zealand's power demand, and an ongoing need for infrastructure investment.

STATISTICS

There was some risk to security of supply heading into winter 2021 as a result of 2021 being a La Niña year, New Zealand experiencing lower than normal levels of hydro storage and constrained gas supplies. Initial reviews for the reliability statistics suggest that the electricity system responded in the way we expected it to, given the scarce resources, to ensure ongoing supply. However, it is important to note that the scarce supply led to more expensive generating plant in operation and higher prices.

The Authority is continuing to progress a review of competition in the spot and forward markets. The review includes looking at the structure, conduct and performance of the markets during key periods such as the 2018 Pohokura outage, the announcements from the New Zealand Aluminium Smelter in 2020, and the 2021 dry year event.

In terms of the desired trend 'improving', this is interpreted as the statistics continuing to perform as expected in the relevant circumstances, with lessons learned and process improvements implemented where identified.

Further details of the 2020/21 results, including details on how the statistics are used can be found in Appendix A.

Efficiency

WE ARE CONTINUOUSLY FOCUSED ON EFFICIENCY IMPROVEMENTS IN THE ELECTRICITY INDUSTRY

When efficiency is high, electricity system resources and investments are focused in the right areas, and costs to operate the system can reduce and flatten. Ongoing innovation and improvements help create greater efficiency.

We seek wholesale and retail electricity markets and transmission and distribution arrangements that are efficient at coordinating electricity production and consumption, and facilitating timely and innovative investment in the electricity system.

For a consumer, greater efficiency should translate into more affordable electricity and services. We want consumers to see transparent pricing for the various types of services they receive. We also want those prices to reflect the actual costs of those services, so that consumers get the benefits of the efficiency gains and can make more efficient choices.

From an operational point of view, efficiency is important because it means that existing resources and investments are used, and better outcomes are more likely to be achieved.

OUTCOME MEASURE	HOW WE MEASURE RESULTS	DESIRED TREND	2020/21 RESULT
Improved participant perceptions of the efficiency in electricity markets and transmission and distribution arrangements	Percentage of participants who agree with a range of statements on the efficiency in electricity markets and transmission and distribution arrangements: 1. The New Zealand electricity market ensures electricity is generated efficiently 2. The New Zealand electricity market ensures electricity is transmitted efficiently 3. The New Zealand electricity market ensures electricity is distributed efficiently 4. New Zealand's wholesale electricity market efficiently coordinates electricity production and consumption 5. New Zealand's wholesale electricity market efficiently facilitates timely investment in the electricity system 6. New Zealand's hedge market efficiently coordinates electricity production and consumption 7. New Zealand's hedge market efficiently facilitates timely investment in the electricity system 8. Competition between electricity retailers promotes efficiency within retail operations	Increasing	Overall, **37%** of participants agreed with the range of statements on efficiency in electricity markets and transmission and distribution arrangements.

OUTCOME MEASURE	HOW WE MEASURE RESULTS	DESIRED TREND	2020/21 RESULT
Improved consumer perceptions of the efficiency of electricity in New Zealand	Percentage of consumers who agree with a range of statements on the efficiency of electricity in New Zealand: 1. I can easily find and connect with an electricity provider 2. Prices on my electricity bill fairly represent the actual cost of my electricity use	Increasing	Overall, **65%** of consumers agreed with the range of statements on the efficiency of electricity in New Zealand.
Overall improvement across a suite of statistics on electricity system and market efficiency	Overall improvement in the following statistics: ▪ Robust futures prices ▪ Dry year prices reflect storage levels, as assessed by case-by-case analysis ▪ Exceptional prices are justified by underlying fundamentals, as assessed by case-by-case analysis ▪ Reducing constrained-on compensation	Improving	Three of the four statistics performed as expected in initial review. Further detailed analysis is ongoing, with results expected in 2021/22. Our review into a December 2019 claim of exceptional prices found a UTS where market fundamentals were not met. Work is ongoing to address actions to correct the UTS.

PERCEPTION SURVEYS

A third of participants agreed with at least one statement on electricity supply efficiency. Most participants (51 percent) agreed the New Zealand electricity market ensures electricity is generated efficiently. However, when asked about specific markets' efficiency, participants were more inclined to disagree or not have an opinion either way. Factors for these views included the regulated nature of transmission and distribution, a small fragmented sector, and market structures that do not promote efficiency.

A majority of consumers agreed with the outcomes they would be expected to experience in an efficient electricity market. Respondents were more likely to agree they could find and connect to an electricity provider (80 percent) than their electricity bills fairly reflected the cost of their electricity use. They noted retailers' pricing structures were confusing and difficult to understand, which could lead to unexpected charges.

STATISTICS

The Efficiency statistics were also impacted by the security of supply risks in the latter half of 2020/21. The efficiency of prices during the financial year will continue to be assessed as part of ongoing reviews of competition in the spot market.

The futures prices reflected market fundamentals, in that prices on the hedge market increased from late 2020 as more information became available on potential future supply – namely, the low hydro storage and constrained gas supplies. Low hydro inflows and high prices seen in 2019/20 persisted into 2020/21 and were exacerbated by falling output from the Pohokura gas field. The dry year experienced caused high prices, as expected in the market, with further analysis underway and continuing into 2021/22.

These high spot prices are also likely to have impacted constrained-on compensation costs. These costs are an amount paid to generators if the system operator requires them to generate electricity during a trading period where the final price is less than the generators' offer price in that period. While the costs were higher in the 2020 calendar year than in 2019, overall constrained-on compensation (and therefore cost) has been falling since 2013.

In December 2020, the Authority released its decision on the December 2019 claim of an undesirable trading situation (UTS). Our investigation found that there was a UTS, suggesting that spot market prices did not reflect the underlying market fundamentals. Actions to correct the UTS have been decided and announced in 2021/22.

In terms of the desired trend 'improving', this is interpreted as the statistics continuing to perform as expected in the relevant circumstances, with lessons learned and process improvements implemented where identified.

Further details of the 2020/21 results, including details on how the statistics are used can be found in Appendix A.

PART 3

STATEMENT OF PERFORMANCE

Alongside implementing our work programme, the exercise of our functions also makes a valuable contribution to our strategic ambitions.

We receive funding from the Crown each financial year from three appropriations within Vote Business, Science and Innovation.

OUR APPROPRIATIONS	OUR FUNCTIONS
Operating appropriation	
Electricity industry governance and market operations	Promote market development
	Monitor, inform and educate
	Operate the electricity system and markets
	Enforce compliance
Contingent appropriations	
Managing the security of New Zealand's electricity supply	Addressing funding requests from the system operator for the management of security of supply events
Electricity litigation fund	Defending cases against the Authority and taking enforcement action

This section sets out our performance for each appropriation, including:

- what was intended to be achieved
- the scope of each appropriation
- the functions provided under each appropriation
- the 2020/21 performance measures, including desired results and targets
- the status and result for each performance measure as at 30 June 2021.

Performance measures used in the 2020/21 Estimates of Appropriations

Some performance measures used in the Statement of Performance Expectations (SPE) are also used in the 2020/21 Estimates of Appropriations. These measures are identified in **bold**.

SERVICE PERFORMANCE DISCLOSURE STATEMENT

The COVID-19 pandemic and the resulting lockdown period of 2019/20 had a material impact on one service performance measure for 2020/21, due to the nature of the measure's 12-month rolling period. Further details can be found under the enforce compliance function.

For all other service performance measures, there was no material impact of the pandemic in 2020/21. Business-as-usual services were able to continue largely unaffected, except for some individual projects being paused, while COVID-19 related work was carried out. Changes in alert levels did not adversely affect the Authority's ability to report against performance indicators, as work was able to continue remotely.

Electricity industry governance and market operations

What is intended to be achieved

This appropriation is intended to achieve the promotion of competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.

Scope of appropriation

This appropriation is limited to formulating, monitoring and enforcing compliance with the regulations and code governing the electricity industry and other outputs in accordance with the statutory functions under the Electricity Industry Act; and delivery of core electricity system and market operation functions, carried out under service provider contracts.

Our functions under this appropriation

This appropriation funds our operations, including Board members' costs, the Rulings Panel, the Security and Reliability Council, advisory groups and the operation of the electricity system and market operations as detailed below. This includes our four main functions, which are specified in the sections that follow.

1. **Promote market development:** We promote development of the electricity markets by making amendments to the Code and through market facilitation measures.[6]

2. **Monitor, inform and educate:** We monitor market behaviour, make data, information and tools available and educate consumers and participants.

3. **Operate the electricity system and markets:** We are responsible for the day-to-day operation of the electricity system and markets, delivered through contracts with service providers.

4. **Enforce compliance:** We monitor, investigate and enforce compliance with the Act, relevant regulations and the Code.

6 Market facilitation measures are actions we can take short of amending the Code or recommending changes to regulations. This can include working directly with participants to develop desired results, education programmes, publication of guidelines and publication of model agreements.

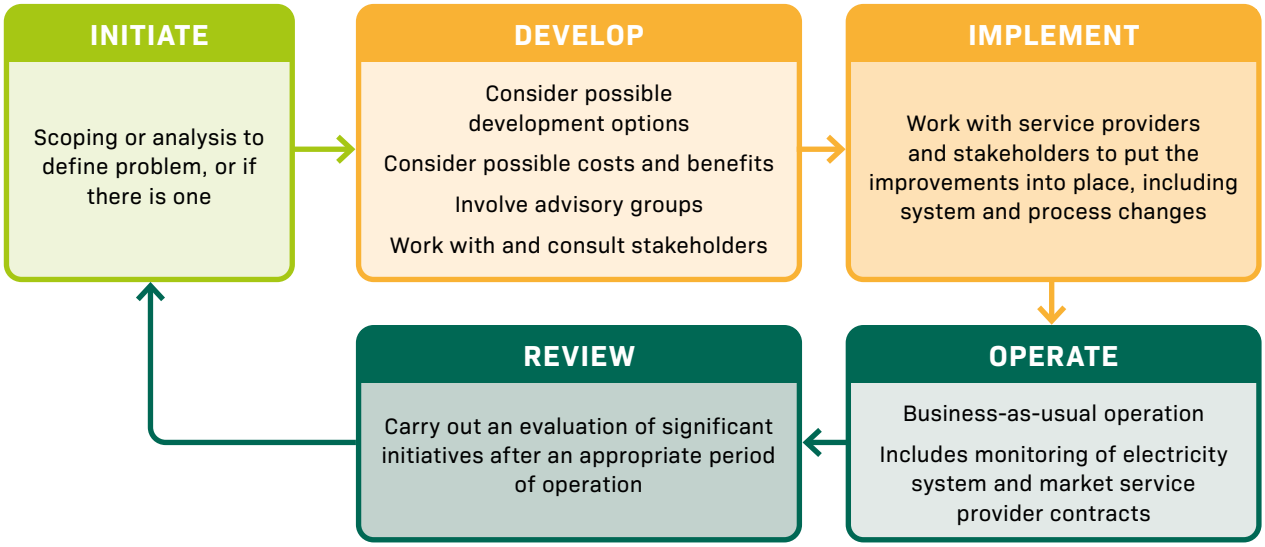
1. Promote market development

Our market development work promotes competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.

We have two key tools at our disposal to develop the market: amending the Code and adopting market facilitation measures.

We use these tools to ensure market arrangements are appropriate for today's needs and flexible enough to enable tomorrow's innovations. Our market development cycle (Figure 2) ensures market improvement initiatives are effectively implemented, and the results assessed.

FIGURE 2: OUR MARKET DEVELOPMENT CYCLE



We use post-implementation reviews of key projects to assess whether our initiatives deliver the expected benefits. We also carry out overall monitoring of the performance of the market under our monitor, inform and educate function (see page 42).

The Innovation and Participation Advisory Group (IPAG) and Market Development Advisory Group (MDAG), stakeholders and contracted service providers have all made significant contributions to our market development work.

In 2020/21, the Authority's decision-making process was the subject of an appeal to the High Court. The Court upheld the Authority's decision to decline to act on a complaint, finding that the Authority was justified in its decision and acted reasonably.[7]

We are also in the process of responding to Trustpower's judicial review of the Authority's June 2020 Transmission Pricing Methodology guidelines decision. As at 30 June 2021, the judicial review is ongoing and will be heard in October 2021.

7 *Intellihub Ltd v Genesis Energy Ltd*, see https://www.ea.govt.nz/code-and-compliance/high-court-decisions/

Performance measures

MEASURE	TARGET	STATUS	2020/21 RESULT
Market development projects achieve planned deliverables for the year.	**80% of market development projects with published targets meet all of their milestones.***		**Not achieved.** In 2020/21, 78% of market development projects met all of their milestones. The remaining 22% partially met their milestones, with delays due to the work needed to manage the dry year and security of supply risk.
Our market development decisions** are lawful and appropriate.	Zero (0) legal challenges that result in an Authority market development decision being overturned.***		**Achieved.** There were zero successful legal challenges in 2020/21.
Transparent, rigorous post-implementation reviews are conducted to establish whether Code amendments deliver intended benefits and impacts on market behaviour.	In 2020/21, we plan to complete one post-implementation review. Post-implementation reviews show that market behaviour altered in intended direction identified when the Code or market facilitation measure was approved.		**Achieved.** In 2020/21, the Board approved the post-implementation review of the guidelines for communication about price changes.

Notes:

* Our market development projects and milestones are identified in the Electricity Authority Work Programme, which is published on our website: http://www.ea.govt.nz/about-us/strategic-planning-and-reporting/our-work-programme/

** Includes market development decisions to implement Code amendments or market facilitation measures. These decisions can be disallowed, appealed or judicially reviewed — on the process used to reach the decision, and/or on the lawfulness, reasonableness or appropriateness of the decision itself.

*** An appeal or judicial review can overturn a market development decision by directing us to reconsider a decision or re run a process. The House may also overturn a market development decision if it accepts a Regulations Review Committee recommendation for it to be 'disallowed' — meaning the decision will no longer have force.

2. Monitor, inform and educate

Our market monitoring, information and education work focuses on improving the availability of data, information and tools, and improving awareness and understanding of how electricity markets function. Transparency and understanding are vital to ensure the competitive, reliable and efficient operation of the electricity market.

Our market analysis function improves understanding by identifying behaviours that are potentially inconsistent with our objective. It also provides appropriate feedback into the market development work.

We must also undertake reviews of any matters relating to the electricity industry that are specified by the Minister under section 18 of the Act.

Performance measures

MEASURE	TARGET	STATUS	2020/21 RESULT
Robust investigation, analysis and reporting on events.	Two reports completed per annum.		**Achieved.** In 2020/21, we published the final report on the Undesirable Trading Situation that took place in 2019. We also published four Quarterly Reviews throughout the year.
Reviews requested by the Minister under section 18 of the Act.	Reports under section 18 of the Act rated as good or very good by independent peer review.*		**N/A.** The Authority did not receive any requests for reports under section 18 in 2020/21.
Making information available to enable public understanding of the electricity system in New Zealand to facilitate effective decision making within the system.	Publish 10 or more consumer focused items on the New Zealand electricity system.**		**Achieved.** 12 consumer-friendly items on market performance were published in 2020/21.
	Maintain the number of annual visits (60,000) to the consumer section of the Authority website.		**Achieved.** The number of annual visits increased during 2020/21 from 153,653 to 160,627.
Making, data, insights and analytical tools available to industry participants.	Maintain the number of annual visits (35,000) to the EMI website.***		**Not achieved.** The number of annual visits during 2020/21 was 30,283. While this was under the target (35,000), it represents a 2% increase from 2019/20 (29,673).

Notes:

* Assessment was by external expert reviewers using a 5-point scale of very poor, poor, average, good or very good.

** Reporting to date has been based on new or updated content placed on the 'Consumers' section of the website during the year. New pages: 'Will I still get my local energy trust rebate if I switch electricity retailer?', 'Why is my electricity bill higher in winter?', 'How could spot prices affect my bill?'. Updated pages: 'What are my rights as an electricity consumer?', 'How do I switch electricity companies?', 'Is a spot price contract right for me?'.

*** The Electricity Market Information website (EMI) is the Electricity Authority's avenue for publishing data, market performance metrics and analytical tools to facilitate effective decision-making within the New Zealand electricity industry.

3. Operate the electricity system and markets

We are responsible for the day-to-day (real-time) efficient and reliable operation of the electricity system and markets. The Act requires us to contract out a number of functions to a group of service providers.[8]

There have been extensive changes to the Market Operation Service Providers (MOSPs) services, systems and contract arrangements over recent years. Because of this, the main focus under this function for 2020/21 continued to be on ensuring services were delivered to the high standard expected by the Authority and the users of the services.

Performance measures

MEASURE	TARGET	STATUS	2020/21 RESULT
Electricity system and market operation performance will be assessed by monitoring service provider performance to ensure that contract requirements, including performance standards, are met.*	**Performance levels met or remediation agreed.**		**Achieved.** All relevant contract, Code and performance standards were met. No material issues were raised in relation to contracts.
	Any issues identified in audits of market operation service providers have a remedial plan agreed and actioned by the agreed date.**		**Achieved.** During 2020/21, no material issues were revealed by the annual audits of service providers.
The Authority carries out its Code obligations in accordance with the Electricity Industry Participation Code 2010.	No significant breaches as a result of the Authority carrying out its Code obligations.***		**Achieved.** During 2020/21, there were no significant breaches of the Authority's Code obligations.

Notes:

* This measure combines several different performance measures for the system operator and market service providers, including system operator annual performance assessment, regular monitoring and review.

** For example, significant service provision issues may include breaches of the Code, issues that have affected market confidence and/or issues that have resulted in multiple complaints and/or a warning letter to the CEO.

*** Including market administration and other obligations under the Code. Although the Authority is not a participant, the absence of breaches is an indicator that standards are met. Significant breaches are considered to be issues that have affected market confidence.

8 A list of service providers is available on page 34 of our Statement of Intent 2020–2024.

4. Enforce compliance

We are responsible for monitoring, investigating and enforcing compliance with the Act, regulations made under the Act and the Code. The Authority's compliance and enforcement functions are key areas for building trust and confidence in the sector.

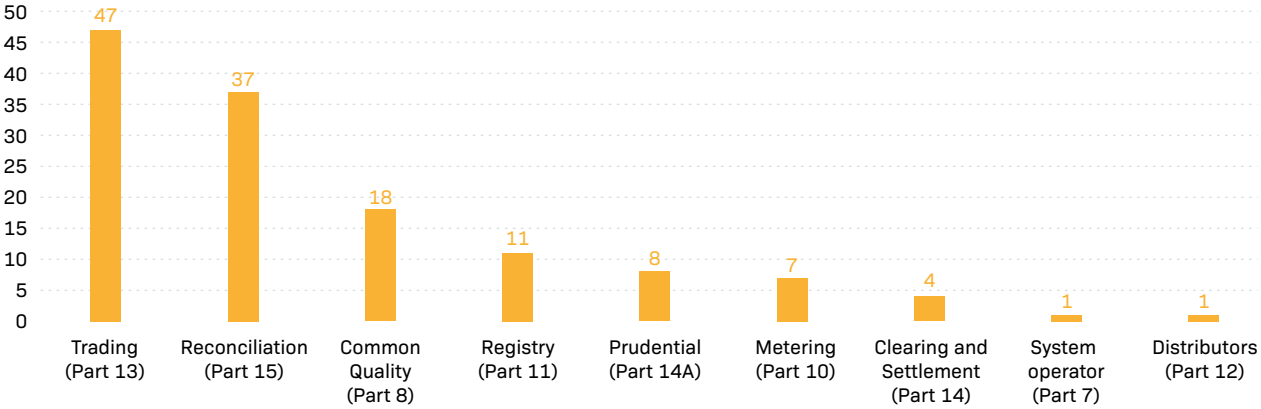
Our compliance function aims to improve the performance of the industry through education of participants and helps us identify and resolve ongoing or systemic issues.

Our enforcement function aims to take appropriate and proportionate action where necessary, to ensure the Act, regulations and the Code are followed by electricity industry participants.

In 2020/21, the Authority focused on resolving 16 formal investigations and achieving settlements where possible. The investigations included three very complex alleged breaches of the high standard of trading conduct rule,[9] as well as investigations that had previously been delayed due to the COVID-19 pandemic.

The Authority was notified of 134 potential breaches of the Code across 45 different industry participants (figure 3). During the year, the Authority resolved 106 cases and issued 15 warning letters.

FIGURE 3: CATEGORY OF CODE BREACH
134 notifications received in 2020/21



9 Investigation reports into Meridian Energy Ltd, Contact Energy Ltd and Genesis Ltd – see https://www.ea.govt.nz/code-and-compliance/compliance/decisions/investigations-closed-no-settlement-reached/

Performance measures

MEASURE	TARGET	STATUS	2020/21 RESULT
Percentage of investigations* decided within 12 months of the investigation being opened.	**100%**		**Not achieved.** During 2020/21, of the 106 investigations resolved, 88% were decided within 12 months of the investigation being opened.
Sound compliance processes followed.	All reports to the Compliance Committee** comply with the Authority's quality standards and case management procedures.		**Achieved.** During 2020/21, all reports to the Compliance Committee (and/or delegate) complied with the Authority's quality standards and case management procedures.

Notes:

* Investigations in this context include all fact-finding enquiries as well as formal investigations of alleged breaches of the Code. This measure and target was introduced in the 2016/17 SPE, and excluded any cases on hand as at 1 July 2016 that were over six months old.

** The Compliance Committee makes decisions on alleged breaches of the Act, various regulations and the Code. The committee determines appropriate enforcement responses, whether settlements should be approved or further investigation undertaken and makes recommendations to the Board regarding the laying of formal complaints with the Rulings Panel and instigating prosecutions.

The percentage of investigations decided within 12 months of the investigation being opened, takes all investigations decided in 2020/21 and calculates how long each investigation was open. Due to the rolling 12-month nature of this measure, it includes investigations that were opened prior to the 2020/21 financial year (if they were decided during the year). Of the open investigations that had decisions made in 2020/21, 13 were impacted by COVID-19 and the lockdown period of 2019/20, causing them to be decided more than 12 months after they were opened.

COMPLIANCE RESET PROGRAMME

During 2020/21, a number of initiatives were commenced as part of the Authority's strategy reset:[10]

- Engaging with MBIE on possible amendments to strengthen the legislation and regulations in the areas of enforcement.
- Updating the Authority's governance arrangements to achieve more timely decision making on potential breaches of the Code.
- Developing a new compliance strategy that will bring an Authority-wide approach to industry compliance.
- Preparing a monitoring and compliance programme for the new trading conduct provisions that came into force on 30 June 2021.[11]
- Publicising high-profile decisions of the Rulings Panel and High Court to increase the visibility of the enforcement function.[12]
- Increasing resourcing and legal support for the compliance and enforcement functions.
- Upgrading the technology platform that is used by the Authority and the sector for reporting and managing breaches.
- Developing a new risk-based compliance monitoring framework.

10 See https://www.ea.govt.nz/about-us/strategic-planning-and-reporting/strategy-reset-2020/
11 See https://www.ea.govt.nz/operations/wholesale/trading-conduct/
12 See https://www.ea.govt.nz/code-and-compliance/compliance/compliance-monitoring/compliance-update/2020/

Electricity industry governance and market operations appropriation and cost breakdown

ACTUAL 2019/20 $000	ELECTRICITY INDUSTRY GOVERNANCE AND MARKET OPERATIONS APPROPRIATION	ACTUAL 2020/21 $000	*BUDGET 2020/21 $000
73,457	Revenue from the Crown	76,627	**76,936
73,457	Expenditure	76,627	76,936

Notes:

* The budget for 2020/21 corresponds to the Main Estimates of Appropriations for the year ending 30 June 2021.

** An in-principle expense transfer for $1.479 million from 2019/20 to 2020/21 was confirmed at the October 2020 baseline update. This brought the budget in the Supplementary Estimates of Appropriations to $78.415 million.

The above table includes the amount approved in the Government's Estimates of Appropriations for 2020/21 of $76.936 million, representing the maximum expenditure that can be incurred. The following table provides a breakdown of the components of this expenditure.

ACTUAL 2019/20 $000	ELECTRICITY INDUSTRY GOVERNANCE AND MARKET OPERATIONS APPROPRIATION	ACTUAL 2020/21 $000	*BUDGET 2020/21 $000
25,950	System operator – operating expenses	26,367	26,480
15,258	System operator – capital related expenses	15,554	16,025
41,208	**System operator expenses**	**41,921**	**42,505**
2,348	Service provider – clearing manager	2,444	2,479
1,647	Service provider – wholesale information and trading system	1,703	1,686
746	Service provider – pricing manager	758	767
908	Service provider – reconciliation manager	931	932
662	Service provider – registry manager	701	685
794	Service provider – financial transmission right manager	813	810
1,208	Service provider – depreciation and amortisation	1,375	2,057
24	Service provider – IT costs	4	70
8,337	**Other service provider expenses**	**8,729**	**9,486**
23,912	**Authority operating expenses**	**25,977**	**24,945**
73,457	**Total expenses**	**76,627**	**76,936**

Managing the security of New Zealand's electricity supply

What is intended to be achieved

This appropriation is intended to achieve enhanced security of supply in the electricity system during periods of emerging or actual security situations.

Scope of appropriation

This appropriation is limited to the management by the system operator (Transpower) of actual or emerging emergency events relating to the security of New Zealand's electricity supply.

The system operator can request funding from this appropriation to:

- increase monitoring and management responsibilities in the event of an emerging or actual security situation
- plan and run an official conservation campaign.

Managing the security of New Zealand's electricity supply is a multi-year appropriation for the period 2017/18 to 2021/22. Expenses under this appropriation can only be incurred by the system operator – we cannot incur any expenses of our own under this appropriation.

Our functions under this appropriation

The system operator is responsible for ongoing security monitoring and emergency management.[13] The security management functions of the system operator include the preparation of the emergency management policy, which is incorporated into the Code by reference following our review and approval. The policy sets out the steps the system operator will take and encourage industry participants to undertake during an extended emergency.

Our primary role in respect to security of electricity supply is to ensure the Code promotes an efficient level of supply reliability. This includes specifying the functions of the system operator, how the functions are to be performed, and setting the requirements for transparency and performance. We also monitor the system operator's performance. This work is covered under the promoting market development and operating the electricity system and markets functions, respectively, of the electricity industry governance and market operations appropriation.

Our role in respect to this appropriation is limited to addressing requests from the system operator to use these funds. Our approval of any request is subject to an agreed process and criteria. The process requires the system operator to provide evidence of an actual or emerging security event, and to describe the actions it intends to take using the funds and how the use of these funds will be monitored. Agreeing this information in advance can help us to assess the effectiveness of the actions and the funding during and after the event.

The system operator would seek our approval for funding from this appropriation on a case-by-case basis, when it considers increased monitoring or security management actions are justified. However, the system operator can, acting on a good faith basis, incur up to $300,000 of costs in this area without prior approval if it is not reasonably practicable to seek that approval.

13 Section 8(2) of the Electricity Act 2010 states that as well as acting as system operator for the electricity industry, the system operator must (a) provide information and short- to medium-term forecasting on all aspects of security of supply and (b) manage supply emergencies. Information about the system operator's security management role is available on its website at https://www.transpower.co.nz/system-operator/security-supply-and-ercs

Performance measures

Managing the security of New Zealand's electricity supply contributes to our reliability outcome (see page 28 of the 2020–2024 Statement of Intent). The effective management of dry years and emergency events, as measured by case-by-case-analysis, is one of a suite of statistics we use to measure whether there are efficient levels of reliable electricity supply. Should the system operator seek funding under this appropriation to manage a dry year or emergency event, how it uses the funding would be reviewed as part of the subsequent analysis. The results of the review would be published on our website and a summary reported in the outcomes section of our annual report.

Given that the relevant outcome and function performance measures are already captured elsewhere, the measures below are limited to those that demonstrate we have fulfilled our obligations for this appropriation.

MEASURE	TARGET	STATUS	2020/21 RESULT
Electricity Authority decisions in relation to managing the security of New Zealand's electricity supply appropriation are made in accordance with the agreed process and criteria.	**Process and criteria met.***		**Achieved.** On 14 May 2021, we received a non-urgent application for funding under this appropriation. On 8 June 2021, we approved funding for the application. The process used and criteria assessed in our decision meets those agreed with the system operator.**

Notes:

* We have an agreed process and criteria for the system operator to follow. For example, correct documentation is provided, appropriate sign-off by system operator management, evidence that there is an actual or emerging security event, intended actions are clearly described, and monitoring and reporting are specified.

** Although an application was received and approved in 2020/21, the funding was not drawn upon due to improving conditions.

Further information on how the Authority addressed the security of supply risk in 2020/21 is included on page 23.

Managing the security of New Zealand's electricity supply appropriation

ACTUAL 2019/20 $000	MANAGING THE SECURITY OF NEW ZEALAND'S ELECTRICITY SUPPLY APPROPRIATION*	ACTUAL 2020/21 $000	**BUDGET 2020/21 $000
-	Revenue from the Crown	-	1,200
-	Expenditure	-	1,200

Notes:

* This is a multi-year appropriation of $6 million over five years. Following the expiry of the previous appropriation, a new appropriation was established commencing on 1 July 2017 and expiring on 30 June 2022. This appropriation is contingent in nature and is not routinely used. To provide consistency with the appropriations contained in the Government's Estimates documents for Vote Business, Science and Innovation, annual budgeted amounts have been included in the above appropriation table. However, as it is not routinely used, no amounts in relation to this appropriation have been included in the 2020/21 budgets within the other financial statements contained in this annual report.

** The budget for 2020/21 corresponds to the Main Estimates of Appropriations for the year ending 30 June 2021.

Electricity litigation fund

What is intended to be achieved

This appropriation is intended to achieve assurance that the Electricity Authority is able to participate in litigation effectively and without delay.

Scope of appropriation

This appropriation is limited to meeting the cost of litigation activity undertaken by the Electricity Authority arising from it carrying out its functions under the Electricity Industry Act 2010.

Our functions under this appropriation

Our functions under this appropriation include defending judicial review and appeal cases taken against us and taking enforcement action against participants under our compliance function.

Performance measures

MEASURE	TARGET	STATUS	2020/21 RESULT
The Electricity Authority uses the litigation fund in accordance with the criteria for use of the fund.*	**Criteria met.**		**Achieved.** During 2020/21, the fund was used in accordance with agreed criteria for the costs and expenses the Authority incurred in participating in one High Court case.

Notes:

* The criteria are set out in our output agreement with the Minister of Energy and Resources.

In 2020/21, the fund was used to respond to various matters, including:

- **Transmission Pricing Methodology** — Responding to Trustpower's judicial review of the Authority's June 2020 TPM guidelines: evidence preparation, pleadings, initial procedural matters, first case management conference.
- **Genesis/Intellihub appeal** — The High Court dismissed an appeal by Intellihub Limited against Genesis in relation to a decision of the Electricity Authority. The Court found that the Authority was justified in its decision and acted reasonably.
- **Transpower underfrequency event causer December 2018** — This related to a matter heard by the Rulings Panel regarding the "causer" of an underfrequency event under clause 8.62 of the Code. The Rulings Panel affirmed the Authority's decision.

Electricity litigation fund appropriation

ACTUAL 2019/20 $000	ELECTRICITY LITIGATION FUND APPROPRIATION*	ACTUAL 2020/21 $000	**BUDGET 2020/21 $000
187	Funded by revenue from the Crown	1,144	***444
	Funded by internal reserves	660	-
187	Total litigation expenditure	1,804	444

Notes:

* This appropriation is contingent in nature, and to provide consistency with the appropriations contained in the Government's Estimates documents for Vote Business, Science and Innovation, annual budgeted amounts have been included in the above appropriation table. No amounts in relation to this appropriation have been included in the 2020/21 budgets within the other financial statements contained in this annual report.

** The budget for 2020/21 corresponds to the Main Estimates of Appropriations for the year ending 30 June 2021.

*** An in-principle expense transfer for $0.700 million from 2019/20 to 2020/21 was confirmed at the October 2020 baseline update. This was updated in the Supplementary Estimates of Appropriations, bringing the budget to $1.144 million.

PART 4

ORGANISATIONAL CAPABILITY

As the organisation continues to evolve, our staff remain passionate about the contribution we make to the lives of New Zealanders and our country as a whole.

Strategic Capability

Our strategic capabilities provide a foundation for external delivery and internal growth.

LISTENING AND EMPATHY

To deliver value and the best outcomes for the breadth of different electricity consumers, we need to understand who they are and their experiences, perspectives and needs. This understanding can only come from increased curiosity and genuine, open listening. We also need to exercise this capability with the regulated community. We will adopt a customer-centred approach to ensure the regulatory platform better serves people, businesses and the nation.

PURPOSEFUL CONNECTION

To grow trust and confidence, build knowledge and progress the electricity sector, we will deepen our connection to those we serve – electricity consumers, tangata whenua, the regulated community and agencies we must collaborate with and can learn from. We also need to broaden our networks internationally. We will be clear about who we engage with and why and actively build relationships. We need to listen and demonstrate we've heard, and better communicate sector success.

INSPIRED CULTURE

To achieve great outcomes for New Zealand, our internal talent needs to grow and thrive. We will invest in our culture, diversity and capability and provide opportunities for collaboration and progression, so our people feel fulfilled and are empowered to do their best work. Their valued experience and commitment are the foundation from which the Authority will change, grow its professional maturity and enhance the craft of our regulation.

TRANSFORMATIVE MINDSET

To meet the pace of change and drive innovation, we need to be creative, fast, bold, practical and flexible – choosing processes and methodologies that support responsiveness, agility and better solutions. We will improve our governance, be more pragmatic, experiment, iterate and scan horizons – both within and outside energy, domestically and internationally.

IMPACTFUL DELIVERY

To achieve our intended outcomes, we need to be more efficient and strategic – prioritising and aligning our efforts and using more streamlined, transparent processes. We will invest in systems and tools for success, better leverage internal knowledge, resources, data and technology and apply a continuous improvement mindset to all our activities.

Our stakeholders

We have a strong track record of working across our stakeholder groups including consumer representatives, industry participants and other government agencies to improve the service we provide. Continuous improvement is key to ensuring these relationships grow and flourish. Effective improvements for the New Zealand electricity market require strong and enduring understanding, and this is the driver for all our stakeholder interactions.

Our website provides stakeholders and New Zealand consumers with a wide range of information to enhance understanding and knowledge of the electricity market, how it works, our statutory objective and how we continue to seek long-term benefits for consumers through other online and media channels. Videos and graphics on our website have seen increased engagement from consumers and an increased understanding and interest in the role of the Authority in ensuring we keep the lights on.

Our people

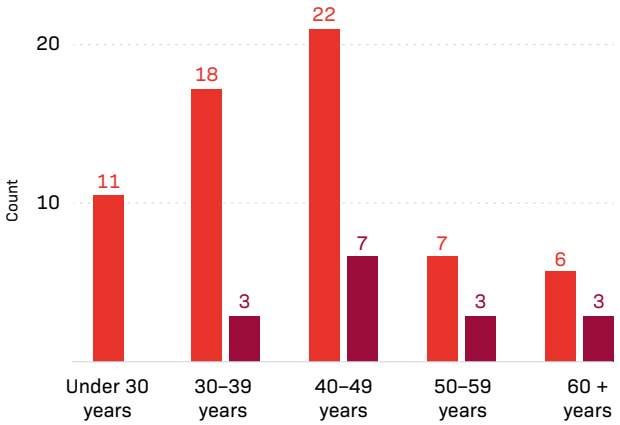
Our biggest asset is our workforce. We respect honesty, integrity and professional judgement, which allows us to perform and deliver to the highest levels. Our Workforce Strategy aims to foster the right talent mix to create an inspired culture, a transformative mindset and impactful delivery on a wide range of initiatives.

The Authority is committed to promoting equal employment opportunities. We constantly strive towards increasing the diversity of our workforce through recruiting, flexible working options, and development. We are partnering with Diversity Works (previously Equal Opportunities Trust) to assist us on the journey of inclusion.

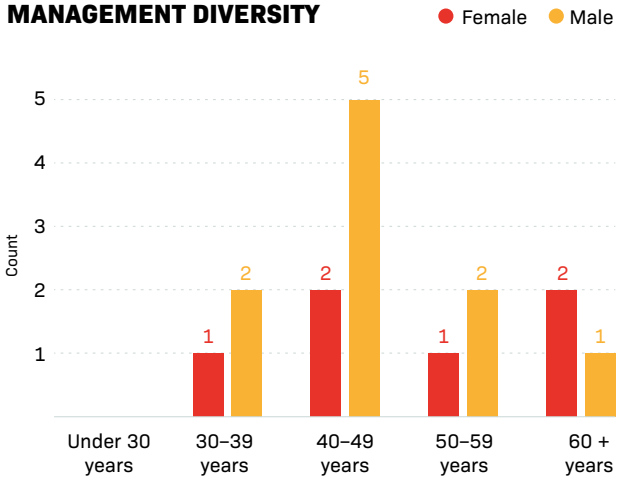
As of 30 June 2021, the Electricity Authority had a workforce of 80 fixed-term and permanent employees.

At the management level (the Senior Leadership Team and people managers), the gender split was 62.5 percent male and 37.5 percent female.

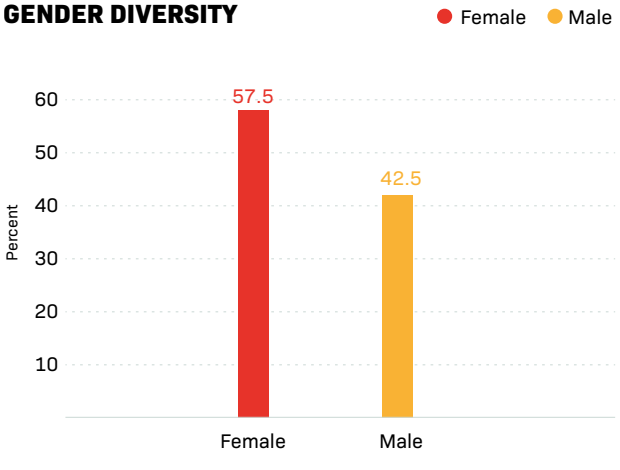
OUR AGE DIVERSITY



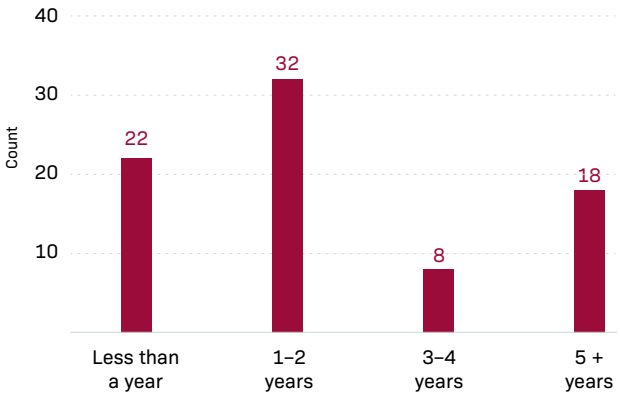
MANAGEMENT DIVERSITY



GENDER DIVERSITY



LENGTH OF SERVICE



Good employer

Our people and capability processes are based on the principles of being a good employer.

Policies combine best practice with the flexibility to respond to the needs of our people both personally and professionally. We interact and engage with our people through a variety of media such as surveys and focus groups, to involve everyone in the design of outcomes that will benefit the individual, the organisation and consumers.

Leadership, accountability and culture

Accountability for ensuring we have the best possible people capability sits collectively with our Senior Leadership Team and people managers. Collectively, they work across all functions to develop organisational policies and approaches that reflect and develop the growing diversity of our people and their wider community.

We encourage the respectful sharing and exchange of views to better inform and guide important decisions to deliver outcomes for consumers and the sector. We expect our people to behave ethically and professionally in everything they do to align with our values of integrity, openness, excellence, our people and boldness.

Capability structure and agility

Ensuring achievement of outcomes requires organisational structures that are fit for purpose. We continually review our structures and organisational capability to ensure we have the best people in the right places at the right time.

We recognise this is what will enable us to succeed in delivering quality results for consumers and the sector.

Our processes

Regulatory framework

The Electricity Industry Act 2010 (the Act) provides our overarching regulatory framework.

Our foundation documents elaborate on the framework provided by the Act and are available on our website. They are the *Interpretation of the Statutory Objective*, the *Charter for Advisory Groups* and the *Consultation Charter*. [14]

A key function is setting the rules for the market through voluntary arrangements or the Code. The *Consultation Charter* describes the process for amending the Code, including our Code amendment principles. These principles emphasise clear problem identification and quantified cost-benefit assessments plus tie breaker principles that apply when cost-benefit assessments are inconclusive.

Value for money

We carefully manage our funding, balancing efforts to restrain our spending with the need to progress important work in a timely and robust fashion. We continue to work with our service providers to ensure value for money.

Improving effectiveness and efficiency crosses all functional areas. We ensure the cost-effectiveness of our work through:

- appropriation consultation — our appropriations are scrutinised through public consultation in accordance with section 129 of the Act
- robust use of planning and procurement disciplines
- assessment of proposed Code amendments and market facilitation measures — benefits and costs of proposed Code amendments and market facilitation measures are scrutinised through public consultation in accordance with our Consultation Charter
- joint procurement — where practicable and cost-effective, we work with other agencies on joint procurement and shared services
- taking up All-of-Government procurement offerings, where applicable
- sharing IT support services with the Commerce Commission
- exploring other shared services opportunities as these arise.

14 The foundation documents are available at www.ea.govt.nz/about-us/strategic-planning-and-reporting/foundation-documents/

Authority planning and reporting

The Crown Entities Act 2004 (CEA) sets out our major planning and reporting requirements, including preparing and publishing the SOI, SPE and Annual Report.

Each year, we seek input from our stakeholders to assist with developing our statutory plans. Under section 129 of the Act, we consult levy payers on our proposed appropriations. This generally takes place over the October to December period. We use feedback received to develop appropriations recommendations to the Minister, our statutory plans and our work programme.

In addition, we also publish our work programme, which includes key market development projects and four-monthly reports on progress.

From 2021/22 onwards, we will be publishing and reporting against an Annual Corporate Plan, which replaces the work programme in terms of identifying the key initiatives and development projects we intend to undertake for the year.

Risk management

We have an active risk management framework encompassing organisational, health and safety, financial and business continuity risk.

Responsibility for ensuring we manage risk is shared at Board, Senior Leadership Team and individual level. This responsibility is underpinned and supported by policies and registers developed at Senior Leadership Team level and owned by the Board, but everyone has a part to play to ensure we are doing the right thing.

The Board's Audit and Finance Committee advises on the quality and integrity of the financial environment including managing the relationship with the external auditor. The committee also advises on whether appropriate governance, policies and processes are in place to ensure effective operational management of risk and the delivery and integrity of internal audit and improvement processes.

Directions issued by Ministers

New Zealand Business Number

On 10 May 2016, the Minister of State Services and Minister of Finance issued a direction under section 107 of the CEA to support a whole-of-Government approach to the New Zealand Business Number (NZBN).

The Authority has assessed all of its business systems (e.g. procurement, register of levy payers, client relationship management, and participant register) for NZBN application and made progress in implementing requirements one and two of the expectations on a Tier Three agency.

Most work to include NZBNs in the Authority's systems was completed in previous years, and progress is being made with the following system:

- The participant register (register of participants in the industry) is currently held in an Excel spreadsheet. Work is continuing on a project to develop an online portal for participants, with the intention to have an application programming interface (API) connection to NZBN.[15] Approximately 30 participants have been involved in a pilot portal, with a second version of the portal due to go live in early 2021/22.

Government Workforce Policy Statement on the Government's expectations for employment relations in the public sector

On 5 May 2021, the Minister for the Public Service issued a Government Workforce Policy Statement setting out the Government's expectations of how it wants the Public Service and most other public sector agencies to effectively manage employment relations.

The Workforce Policy priority of achieving shared goals within the fiscal context of the Government was highlighted in the COVID-19 environment, with pay restraint needing to continue to be exercised across the Public Service for the foreseeable future. This aligns with the Public Service Commissioner's letter, dated 15 June 2021, formally conveying the Workforce Policy and Pay Guidance 2021.

As an independent Crown entity, the Electricity Authority must have regard to the Workforce Policy and related Pay Guidance.

15 An API allows data exchange between various program components.

Climate change and greenhouse gas emissions

As an independent Crown entity, the Authority intends to lead by example, taking active steps to measure and reduce our greenhouse gas (GHG) emissions.[16]

We have identified two areas as our main sources of GHG emissions. They are the energy we purchase and travel.

Despite border closures limiting international travel, air travel accounted for 90–97 percent of the Authority's emissions in 10 months of the year. Air travel is considered a Scope 3, or indirect emission, i.e. it is an emission that occurs "because of the activities of the organisation, but generated from sources that it does not own or control."[17]

All GHG emissions are expressed as kilograms of carbon dioxide equivalent (kg CO_2-e) and have been calculated using the Ministry for the Environment's *Measuring Emissions: A Guide for Organisations.*[18]

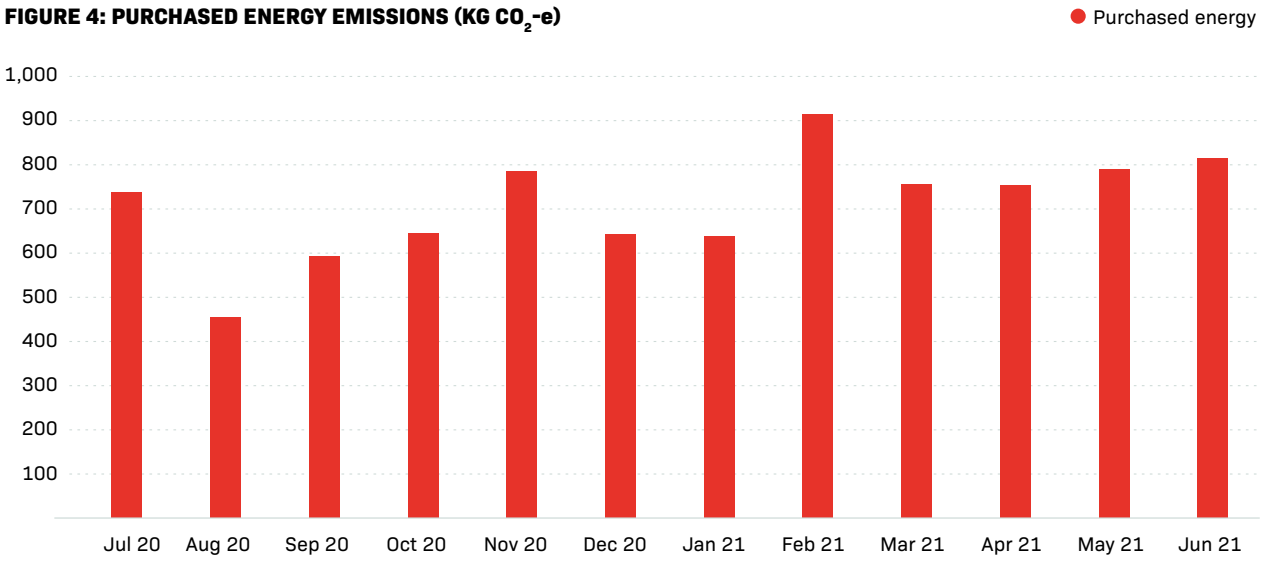
Overall, in 2020/21, the Electricity Authority had **205,947 kg CO_2-e** of Scope 2 (purchased energy) and Scope 3 emissions.

The 2020/21 financial year is the first year the Authority has calculated emissions. Our intention is to see a reduction in our emissions over time. However, due to the COVID-19 pandemic and subsequent alert level changes, 2020/21 does not represent a 'normal' year. This means there may be some variation in our baselining process as New Zealand moves into a post-COVID world. There will also be an increase in our overall carbon footprint as we continue to identify and measure new areas of emissions, simply because we are increasing the number of factors we measure.

Purchased energy

Our purchased energy is in the form of electricity used to power our offices. In 2020/21, we purchased 8,522 kilowatt hours (kWh) of energy.

FIGURE 4: PURCHASED ENERGY EMISSIONS (KG CO_2-e)

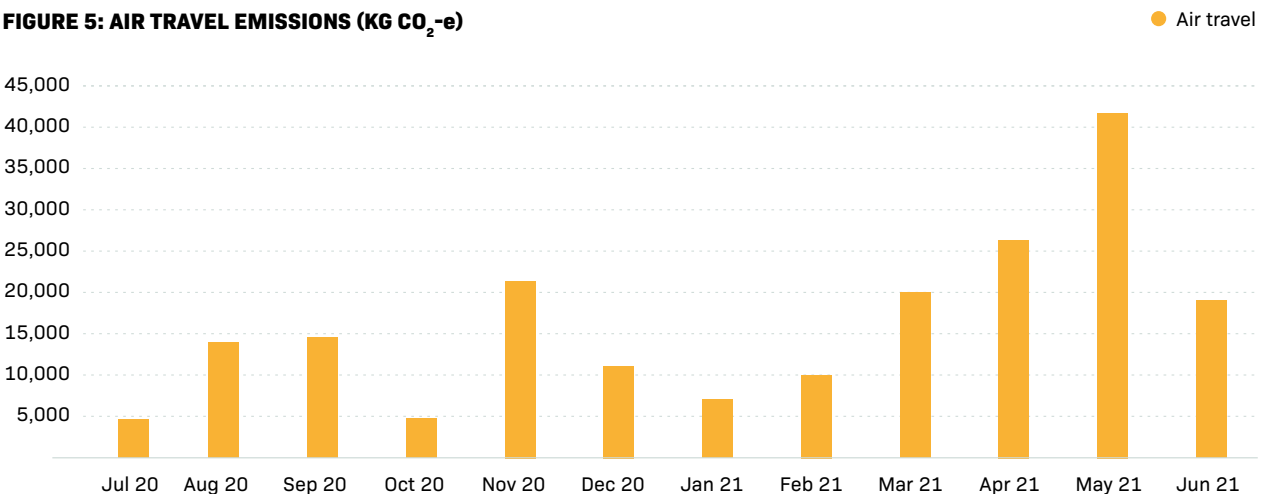


16 Information on electricity sector emissions is held by the Ministry of Business, Innovation and Employment (MBIE).
17 https://environment.govt.nz/assets/Publications/Files/Measuring-Emissions-Detailed-Guide-2020.pdf
18 https://environment.govt.nz/publications/measuring-emissions-detailed-guide-2020/

Travel

The Authority flew approximately 105,111km domestically in 2020/21. Due to the COVID-19 pandemic and border closures, there was no international travel in the year.

FIGURE 5: AIR TRAVEL EMISSIONS (KG CO_2-e)



Hotel accommodation and taxi use made up slightly over one percent of measured emissions in 2020/21.

FIGURE 6: ACCOMMODATION EMISSIONS (KG CO_2-e)

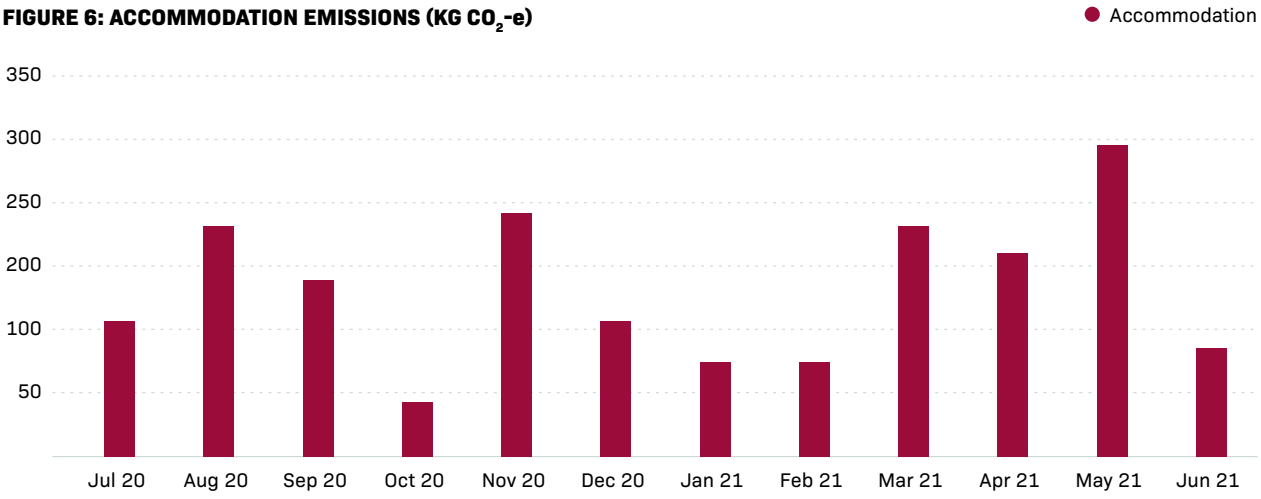
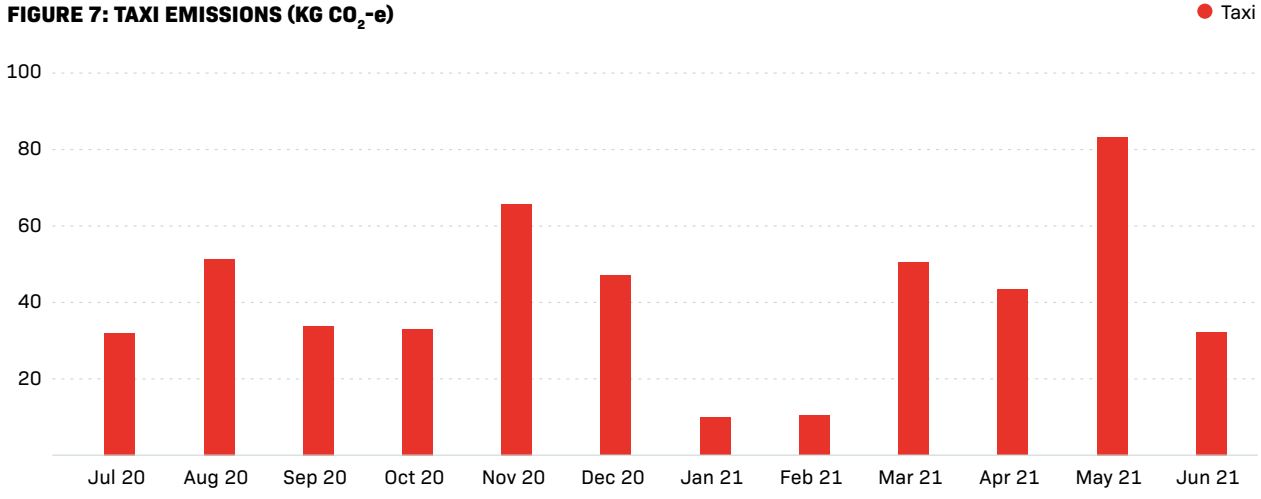


FIGURE 7: TAXI EMISSIONS (KG CO_2-e)



PART 5

FINANCIAL STATEMENTS

The financial statements report actual results against budget information in the Authority's 2020/21 Statement of Performance Expectations (SPE).

These statements are provided in accordance with section 151 of the Crown Entities Act 2004.

Statement of comprehensive revenue and expense

FOR THE YEAR ENDED 30 JUNE 2021

ACTUAL 2019/20 $000		NOTE	ACTUAL 2020/21 $000	*BUDGET 2020/21 $000
73,644	Funding from the Crown	2	77,771	76,936
340	Interest revenue		126	400
73.984	**Total revenue**		**77,897**	**77,336**
13,844	Personnel costs	3	14,262	11,592
1,436	Depreciation, amortisation and impairment	7,8	1,628	2,348
48,337	Service provider contracts		49,275	49,933
10,027	Other expenses	4	13,266	13,063
73,644	**Total expenditure**		**78,431**	**76,936**
340	**Total comprehensive revenue and expense**		**(534)**	**400**

* Budget amounts are unaudited.

The accompanying notes form part of these financial statements. Explanations for major variances to budget are provided in **Note 23**.

Statement of changes in equity

FOR THE YEAR ENDED 30 JUNE 2021

ACTUAL 2019/20 $000		NOTE	ACTUAL 2020/21 $000	*BUDGET 2020/21 $000
13,008	Balance at 1 July		13,348	13,250
340	Total comprehensive revenue and expense	5	(534)	400
13,348	**Balance at 30 June**		**12,814**	**13,650**

* Budget amounts are unaudited.

The accompanying notes form part of these financial statements. Explanations for major variances to budget are provided in **Note 23**.

Statement of financial position

AS AT 30 JUNE 2021

ACTUAL 2019/20 $000		NOTE	ACTUAL 2020/21 $000	*BUDGET 2020/21 $000
	ASSETS			
	Current assets			
16,631	Cash and cash equivalents	6	17,083	16,346
54	Receivables and prepayments		21	200
-	GST receivable		62	-
16,685	**Total current assets**		**17,166**	**16,546**
	Non-current assets			
332	Property, plant and equipment	7	317	432
4,270	Intangible assets	8	5,461	4,872
4,602	**Total non-current assets**		**5,778**	**5,304**
21,287	**Total assets**		**22,944**	**21,850**
	LIABILITIES			
	Current liabilities			
5,694	Payables and accruals	9	8,526	7,000
819	Employee entitlements	10	812	1,000
116	GST payable		-	200
1,292	Appropriation repayable to the Crown	11	644	-
-	Provisions	12	130	-
7,921	**Total current liabilities**		**10,112**	**8,200**
	Non-current liabilities			
18	Employee entitlements	10	18	-
18	**Total non-current liabilities**		**18**	**-**
7,939	**Total liabilities**		**10,130**	**8,200**
13,348	**Net assets**		**12,814**	**13,650**
	EQUITY			
9,011	Contributed capital		9,011	9,011
4,337	Accumulated surplus		3,803	4,639
13,348	**Total equity**		**12,814**	**13,650**

* Budget amounts are unaudited.

The accompanying notes form part of these financial statements. Explanations for major variances to budget are provided in **Note 23**.

Statement of cash flows

FOR THE YEAR ENDED 30 JUNE 2021

ACTUAL 2019/20 $000		NOTE	ACTUAL 2020/21 $000	*BUDGET 2020/21 $000
	Cash flows from operating activities			
74,936	Receipts from the Crown		78,415	76,936
340	Interest from investments		126	400
(1,581)	Repayment of appropriation to the Crown		(1,292)	-
(59,407)	Payments to suppliers		(59,546)	(62,996)
(13,919)	Payments to personnel		(14,269)	(11,592)
364	Goods and services tax (net)		(178)	-
733	**Net cash flows from operating activities**	13	**3,256**	**2,748**
	Cash flows from investing activities			
(173)	Purchase of property, plant and equipment		(138)	(209)
(608)	Purchase of intangible assets		(2,666)	(1,725)
(781)	**Net cash flows from investing activities**		**(2,804)**	**(1,934)**
(48)	**Net increase in cash and cash equivalents**		**452**	**814**
16,679	Cash and cash equivalents at beginning of year		16,631	15,532
16,631	**Cash and cash equivalents at end of period**		**17,083**	**16,346**

* Budget amounts are unaudited.

The accompanying notes form part of these financial statements. Explanations for major variances to budget are provided in **Note 23**.

Statement of commitments

AS AT 30 JUNE 2021

Service provider agreements exist for the clearing manager, pricing manager, reconciliation manager, registry manager, wholesale and information trading system (WITS) manager, financial transmission rights (FTR) manager and system operator. The commitments included below represent the minimum payments due under the contract's notice period for termination, or the contract expiry date.

The system operator agreement has no fixed expiry date and has a three-year notice period for termination. The other market operator service provider agreements are due to expire 30 June 2024.

The reconciliation manager agreement includes upgrade and improvement services to the market systems and is represented in the capital commitments.

ACTUAL 2019/20 $000		ACTUAL 2020/21 $000
	OPERATING COMMITMENTS	
	Service providers	
49,659	Not later than one year	47,056
*106,611	Later than one year but not later than five years	103,559
156,270		**150,615**
	Building lease	
512	Not later than one year	620
640	Later than one year but not later than five years	128
1,152		**748**
	Other operating commitments	
1,352	Not later than one year	1,415
3,669	Later than one year but not later than five years	2,470
19	Later than five years	-
5,040		**3,885**
162,462	**Total operating commitments**	**155,248**
	CAPITAL COMMITMENTS	
	Intangible assets	
463	Not later than one year	453
1,399	Later than one year but not later than five years	946
1,862		**1,399**
1,862	**Total capital commitments**	**1,399**

* The commitment has been restated from $61,916 to $106,611 due to the interpretation of the System Operator agreement.

The accompanying notes form part of these financial statements.

Notes to the financial statements

1. Accounting policies

REPORTING ENTITY

The Electricity Authority (Authority) is an independent Crown entity as defined by the Crown Entities Act 2004 and is domiciled and operates in New Zealand. The relevant legislation governing the Authority's operations includes the Crown Entities Act 2004 and Electricity Industry Act 2010. The Authority's ultimate parent is the New Zealand Crown.

The Authority's primary role is to provide services to the New Zealand public, and it does not operate to make a financial return. Accordingly, it has designated itself a public benefit entity (PBE) for financial reporting purposes.

The financial statements for the Authority are for the period 1 July 2020 to 30 June 2021 and were approved by the Board on 3 December 2021.

BASIS OF PREPARATION

The financial statements have been prepared on a going concern basis, and the accounting policies have been applied consistently throughout the period.

STATEMENT OF COMPLIANCE

The financial statements of the Authority have been prepared in accordance with the requirements of the Crown Entities Act 2004, which includes the requirement to comply with New Zealand generally accepted accounting practice (NZ GAAP).

The Authority is a Tier 1 entity, and the financial statements have been prepared in accordance with PBE accounting standards.

PRESENTATION CURRENCY AND ROUNDING

The financial statements are presented in New Zealand dollars rounded to the nearest thousand dollars ($000), except where otherwise stated.

STANDARDS ISSUED THAT ARE NOT YET EFFECTIVE AND HAVE NOT BEEN EARLY ADOPTED

An amendment to PBE IPSAS 2 Statement of Cash Flows requires entities to provide disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes. This amendment is effective for annual periods beginning on or after 1 January 2021, with early application permitted. The Authority has assessed these amendments as having no material effect on its 2020/21 financial statements.

PBE issued IPSAS 41 Financial Instruments in March 2019. This standard supersedes PBE IFRS 9 Financial Instruments, which was issued as an interim standard. It is effective for reporting periods beginning on or after 1 January 2022. The Authority has not assessed the effect of this amendment, and this will be evaluated prior to the due date.

PBE FRS 48 replaces the service performance reporting requirements of PBE IPSAS 1 and is effective for reporting periods beginning on or after 1 January 2022. The Authority has not yet determined how application of PBE FRS 48 will affect its statement of service performance.

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

REVENUE

The specific accounting policies for significant revenue items are explained below.

Funding from the Crown

The Authority is primarily funded by the Crown. This funding is restricted in its use for the purpose of the Authority meeting the objectives specified in its founding legislation and the scope of the relevant appropriations of the funder.

The Authority considers there are no conditions attached to the funding and it is recognised as non-exchange revenue at the point of entitlement. Appropriations received from the Crown are recognised as revenue to the extent that expenditure has been incurred. Appropriations received but not spent are treated as a Crown creditor and shown in the statement of financial position as a provision for refund of appropriations to the Crown.

Levies

The Authority administers a levy on industry participants under the Electricity Industry (Levy of Industry Participants) Regulations 2010 (Regulations). Levies are paid directly to the Crown for reimbursement of funding provided to the Authority. Levies are not recognised as revenue in the Authority's financial statements.

Interest

Interest is earned on bank deposits and is recognised in the period to which it relates.

Operating leases

An operating lease is a lease that does not transfer substantially all the risks and rewards incidental to ownership of an asset to the lessee.

Lease payments under an operating lease are recognised as an expense on a straight-line basis over the lease term.

Cash and cash equivalents
Cash and cash equivalents include cash on hand, deposits held on-call with banks and other short-term highly liquid investments with original maturities of normally three months or less.

Receivables and prepayments
Short-term receivables and prepayments are recorded at their face value, less any provision for impairment.

A receivable is considered impaired when there is evidence that the Authority will not be able to collect the amount due. The amount of the impairment is the difference between the carrying amount of the receivable and the present value of the amounts expected to be collected.

PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consist of the following asset classes: computer hardware, furniture and fittings, office equipment and leasehold improvements.

Property, plant and equipment are shown at cost, less any accumulated depreciation and impairment losses.

Additions
The cost of an item of property, plant and equipment is recognised as an asset only when it is probable that future economic benefits or service potential associated with the item will flow to the Authority and the cost of the item can be measured reliably.

Disposals
Gains and losses on disposals are determined by comparing the proceeds with the carrying amount of the asset. Gains and losses on disposals are reported net in the surplus or deficit.

Depreciation
Depreciation is provided on a straight-line basis on all property, plant and equipment at rates that will write off the cost (or valuation) of the assets to their estimated residual values over their useful lives. The useful lives and associated depreciation rates of each asset class have been estimated as follows:

COMPUTER HARDWARE	3–5 years	20%–33%
FURNITURE AND FITTINGS	5 years	20%
OFFICE EQUIPMENT	5 years	20%
LEASEHOLD IMPROVEMENTS	Unexpired period of the lease	

INTANGIBLE ASSETS

Software acquisition and development
Acquired software licences are capitalised on the basis of the costs incurred to acquire and bring to use the specific software.

Costs that are directly associated with the development of software are recognised as an intangible asset when the software becomes operational. Work in progress is recognised at cost less impairment.

Staff training costs are recognised as an expense when incurred.

Costs associated with maintaining software are recognised as an expense when incurred.

Costs associated with the development and maintenance of the Authority's corporate website are recognised as an expense when incurred.

Amortisation
The carrying value of an intangible asset with a finite life is amortised on a straight-line basis over its useful life. Amortisation begins when the asset is available for use and ceases at the date that the asset is derecognised. The amortisation charge for each financial year is recognised in the surplus or deficit. The value of additions made to an existing asset are amortised over the remaining useful life of the existing asset.

The useful lives and associated amortisation rates of each asset class are estimated as follows:

COMPUTER SOFTWARE	3–17 years	6%–33%

IMPAIRMENT OF CAPITAL ASSETS

The Authority does not hold any cash generating assets. Assets are considered cash generating where their primary objective is to generate a commercial return.

Non-cash generating assets
Property, plant and equipment and intangible assets that have a finite useful life are assessed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss would be recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of the asset's fair value less costs to sell and value in use.

Value in use is determined using an approach based on either depreciated replacement cost, restoration cost or service units. The most appropriate approach depends on the nature of the impairment and availability of information.

If an asset's carrying amount exceeds its recoverable service amount, the asset is regarded as impaired and the carrying amount is written down to the recoverable amount. The total impairment loss is recognised in the surplus or deficit.

The reversal of an impairment loss is recognised in the surplus or deficit.

PAYABLES AND ACCRUALS

Short-term payables and accruals are recorded as exchange transactions at their face value.

EMPLOYEE ENTITLEMENTS

Short-term employee entitlements

Employee benefits that are due to be settled within 12 months after the end of the period in which the employee renders the related service are measured based on accrued entitlements at current rates of pay.

These include salaries and wages accrued up to balance date, annual leave earned but not yet taken at balance date and sick leave.

Sick leave is recognised to the extent that compensated absences in the coming year are expected to be greater than the sick leave entitlements earned in the coming year. The amount is calculated based on the unused sick leave entitlement that can be carried forward at balance date to the extent that the Authority anticipates it likely to be used by staff to cover those future absences.

A liability and an expense are recognised for bonuses where there is a contractual obligation or a past practice that has created a constructive obligation and a reliable estimate of the obligation can be made.

Long-term employee entitlements

Employee benefits that are due to be settled beyond 12 months after the end of period in which the employee renders the related service, such as long-service leave, have been calculated on an actuarial basis. The calculations are based on:

- likely future entitlements accruing to staff, based on years of service, years to entitlement, the likelihood that staff will reach the point of entitlement and contractual entitlement information; and
- the present value of the estimated future cash flows.

Presentation of employee entitlements

Sick leave, annual leave and vested long service leave are classified as a current liability. Non-vested long service leave and retirement gratuities expected to be settled within 12 months of balance date are classified as a current liability. All other employee entitlements are classified as a non-current liability.

SUPERANNUATION SCHEMES

Defined contribution schemes

Obligations for contributions to KiwiSaver and the State Sector Retirement Savings Scheme are accounted for as defined contribution superannuation schemes and are recognised as an expense in the surplus or deficit as incurred.

PROVISIONS

A provision is recognised for future expenditure of uncertain timing when there is a present obligation (either legal or constructive) as a result of a past event, it is probable that expenditure will be required to settle the obligation and a reliable estimate of the amount of the obligation can be made.

EQUITY

Equity is measured as the difference between total assets and total liabilities. Equity is disaggregated and classified into the following components:

- contributed capital
- accumulated surplus/(deficit).

GOODS AND SERVICES TAX (GST)

All items in the financial statements are presented exclusive of GST, except for receivables and payables, which are presented on a GST inclusive basis. Where GST is not recoverable as input tax, it is recognised as part of the related asset or expense.

The net amount of GST recoverable from or payable to the Inland Revenue Department (IRD) is included as part of receivables or payables in the statement of financial position.

The amount of GST owing from or to the IRD at balance date, being the difference between Output GST and Input GST, is included under current assets and current liabilities respectively.

The net GST paid to or received from the IRD, including the GST relating to investing and financing activities, is classified as a net operating cash flow in the statement of cash flows.

Commitments and contingencies are disclosed exclusive of GST.

INCOME TAX

The Authority is a public authority and consequently is exempt from the payment of income tax. Accordingly, no provision has been made for income tax.

BUDGET FIGURES

The budget is derived from the 2020/21 SPE, as approved by the Authority's Board.

The budget figures have been prepared in accordance with Tier 1 PBE accounting standards, using accounting policies that are consistent with those adopted by the Board in preparation of the financial statements. All budget figures are unaudited.

MEASUREMENT BASE

The financial statements have been prepared on a historical cost basis. The accounting policies that materially affect the measurement of financial performance, financial position and cash flows are set out below and have been applied consistently to all periods presented in these financial statements.

CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS

In preparing these financial statements, the Authority has made estimates and assumptions concerning the future. These estimates and assumptions may differ from the subsequent actual results. Estimates and assumptions

are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, or future financial years, are discussed below.

IMPACT OF COVID-19

The Authority has assessed the financial statements on a line-by-line basis and has concluded that COVID-19 and the resulting lockdown period in 2019/20 had no material impact on the Authority's revenue, expenses, assets, liabilities and cash flow for financial year 2020/21.

The ongoing impacts of COVID-19 have not had and are not expected to have any impacts on the operations of the Authority.

IMPAIRMENT OF INTANGIBLE ASSETS

At each balance date, the impairment of intangible assets is reviewed. Assessing the appropriateness of an asset impairment requires a number of factors to be considered such as an asset's value in use and its carrying amount versus its recoverable amount.

Impairment will affect the amortisation or impairment expense recognised in the surplus or deficit and the carrying amount of the asset in the statement of financial position.

Estimating useful lives and residual values of intangible assets

At each balance date, the estimates of useful lives and residual values of intangible assets are reviewed. Assessing the appropriateness of these estimates requires a number of factors to be considered such as the condition of the assets, expected period of use of the assets by the Authority and expected disposal proceeds from the future sale of the assets.

A revision to the estimate of the useful life or residual value of an asset will affect the amortisation expense recognised in the surplus or deficit and carrying amount of the asset in the statement of financial position.

2. Crown appropriations

The Authority has been provided with funding from the Crown for specific purposes as set out in the Electricity Industry Act 2010 and in the scope of the appropriations as set out in Vote Business, Science and Innovation. Appropriations are recognised as revenue to the extent that they are spent.

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Electricity industry governance and market operations	76,627	73,457
Electricity litigation fund	1,144	187
	77,771	**73,644**

3. Personnel costs

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Salaries and contractors	13,886	13,375
Contributions to defined contribution plans	434	404
Increase in annual and long service leave provision	(58)	65
	14,262	**13,844**

Contributions to defined contribution plans include contributions to KiwiSaver and the State Sector Retirement Savings Scheme.

4. Other expenses

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
External work programme support	6,722	5,449
Litigation fund	1,804	187
Auditor fees for external audit	59	49
Auditor fees for other services	17	-
Advisory group and working group fees (Note 17)	73	71
Board member remuneration (Note 15)	563	654
Rulings Panel remuneration (Note 16)	81	88
Operating lease expenses	603	580
Travel expenses	89	181
Other operating expenses	3,255	2,768
	13,266	**10,027**

5. Total comprehensive revenue and expense

The Authority may elect to retain interest revenue and other revenue in order to maintain an appropriate level of working capital. The Authority has exercised this option in the period 1 July 2020 to 30 June 2021. The Authority posted a deficit of $0.534 million due to $0.660 million spent on litigation in addition to the Crown appropriation of $1.144 million.

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Interest revenue	126	340
Litigation expense funded by reserves	(660)	-
	(534)	**340**

6. Cash and cash equivalents

The carrying value of cash at bank and short-term deposits with maturities of normally three months or less approximates their fair value.

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Cash in current account	83	1,131
Cash on call in interest-bearing money market account	1,000	1,000
Cash on three-month term deposit	16,000	14,500
	17,083	**16,631**

7. Property, plant and equipment

There are no restrictions over the title of the Authority's fixed assets nor any fixed assets pledged as security for liabilities.

	COMPUTER HARDWARE $000	OFFICE EQUIPMENT $000	FURNITURE & FITTINGS $000	LEASEHOLD IMPROVEMENT $000	TOTAL $000
COST OR VALUATION					
Balance at 1 July 2019	572	171	382	730	**1,855**
Additions	103	19	51	-	**173**
Balance at 30 June 2020	**675**	**190**	**433**	**730**	**2,028**
Balance at 1 July 2020	675	190	433	730	**2,028**
Additions	36	2	44	56	**138**
Balance at 30 June 2021	**711**	**192**	**477**	**786**	**2,166**
ACCUMULATED DEPRECIATION					
Balance at 1 July 2019	439	61	356	672	**1,528**
Depreciation expense	105	26	18	19	**168**
Balance at 30 June 2020	**544**	**87**	**374**	**691**	**1,696**
Balance at 1 July 2020	544	87	374	691	**1,696**
Depreciation expense	79	29	18	27	**153**
Balance at 30 June 2021	**623**	**116**	**392**	**718**	**1,849**
NET CARRYING VALUE					
At 1 July 2019	133	110	26	58	**327**
At 30 June 2020 and 1 July 2020	131	103	59	39	**332**
At 30 June 2021	**88**	**76**	**85**	**68**	**317**

8. Intangible assets

There are no restrictions over the title of the Authority's intangible assets nor any intangible assets pledged as security for liabilities.

	WORK IN PROGRESS $000	SOFTWARE AND SYSTEMS $000	TOTAL $000
COST OR VALUATION			
Balance at 1 July 2019	725	28,894	29,619
Additions	597	11	608
Transfers	(608)	608	-
Disposals	-	-	-
Balance at 30 June 2020	**714**	**29,513**	**30,227**
Balance at 1 July 2020	714	29,513	30,227
Additions	2,666	-	2,666
Transfers	(829)	829	-
Disposals	-	-	-
Balance at 30 June 2021	**2,551**	**30,342**	**32,893**
ACCUMULATED AMORTISATION			
Balance at 1 July 2019		24,689	24,689
Amortisation expense		1,268	1,268
Eliminate on disposal		-	-
Impairment losses		-	-
Balance at 30 June 2020		**25,957**	**25,957**
Balance at 1 July 2020		25,957	25,957
Amortisation expense		1,475	1,475
Eliminate on disposal		-	-
Impairment losses		-	-
Balance at 30 June 2021		**27,432**	**27,432**
NET CARRYING VALUE			
At 1 July 2019			4,930
At 30 June 2020 and 1 July 2020			4,270
At 30 June 2021			**5,461**

The Authority's intangible assets are comprised of acquired and developed software, systems and associated licences; the most significant of which is the software used in the operation of the electricity market.

At 30 June 2021 this software had a cost of $28.114 million, net carrying value of $2.859 million and an estimated remaining useful life of between three and five years

9. Creditors and other payables

Payables and accruals are non-interest bearing and are normally settled on 30-day terms, therefore the carrying value of payables and accruals approximates their fair value.

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Creditors	1,540	55
Accrued expenses	6,986	5,639
	8,526	**5,694**

10. Employee entitlements

A provision for sick leave was calculated and assessed as immaterial. A total of $191,149 was paid during financial year 2020/21 as compensation relating to cessation of employment.

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
CURRENT PORTION		
Annual leave	599	660
Accrued salary	207	153
Long service leave	6	6
Total current portion	**812**	**819**
NON-CURRENT PORTION		
Long service leave	18	18
Total non-current portion	**18**	**18**
	830	**837**

11. Appropriation repayable to the Crown

The Authority receives funding by way of appropriations from the Crown. The Crown is reimbursed for this funding by levies collected from industry participants.

The Authority receives its appropriations monthly according to a funding profile agreed at the start of the financial year. At the end of the year, the difference between funding drawn down and total Authority expenditure is recorded as a payable or receivable with the Crown. If all appropriations are fully drawn down, the amount will be a payable representing unspent funding to be returned to the Crown.

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Net Crown appropriations drawn down	78,415	74,936
Litigation expense funded by reserves	660	-
Less total Authority expenditure	(78,431)	(73,644)
Appropriation repayable to the Crown	**644**	**1,292**

12. Provisions

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Lease make-good	130	-
	130	**-**

This provision is for removal of leasehold improvements or additions in the event of termination of tenancy in September 2022.

13. Reconciliation of net operating surplus to net cash flows

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Net operating surplus	**(534)**	**340**
Add non-cash items		
Depreciation, amortisation and impairment	1,628	1,436
(Decrease) in non-current employee entitlements	-	(8)
Total non-cash items	**1,628**	**1,428**
Add movements in working capital items		
Decrease/(increase) in receivables and prepayments	33	(39)
(Increase)/decrease in GST receivables	(178)	364
Increase/(decrease) in payables and accruals	2,832	(1,004)
(Decrease) in employee entitlements	(7)	(67)
Increase in provisions	130	-
(Decrease) in provisions for refund of appropriation	(648)	(289)
Net working capital movements	**2,162**	**(1,035)**
Net cash flow from operating activities	**3,256**	**733**

14. Employee remuneration

REMUNERATION BAND	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
$100,000 – $109,999	4	4
$110,000 – $119,999	6	1
$120,000 – $129,999	4	4
$130,000 – $139,999	7	5
$140,000 – $149,999	5	2
$150,000 – $159,999	1	1
$160,000 – $169,999	4	3
$170,000 – $179,999	5	5
$180,000 – $189,999	2	3
$190,000 – $199,999	1	1
$200,000 – $209,999	3	3
$210,000 – $219,999	3	2
$220,000 – $229,999	1	2
$230,000 – $239,999	-	-
$240,000 – $249,999	-	1
$250,000 – $259,999	2	1
$260,000 – $269,999	2	2
$270,000 – $279,999	1	1
$370,000 – $379,999	1	1
	52	**42**

15. Board member remuneration

No Board members received compensation or other benefits in relation to cessation (2020: None). The Authority has directors' and officers' liability and professional indemnity insurance cover in respect of the liability or costs of Board members and employees.

		ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Dr Brent Layton	Board Chair - retired 31 October 2020	43	180
Dr Nicola Crauford	Board Chair - appointed 1 November 2020	124	-
Susan Paterson		83	93
Allan Dawson		91	109
Sandra Gamble		75	72
Lana Stockman		89	112
Mark Sandelin		58	88
		563	**654**

The Remuneration Authority, an independent body set up by Parliament, determines the remuneration received by Board members. For six months of the year the Board followed the Renumeration Authority (COVID-19 Measures) Amendment Act 2020 by taking a temporary reduction in hourly rates. This was a 20% reduction for the Board Chair and a 10% decrease for other Members.

16. Rulings Panel remuneration

No new members were appointed during the financial year. Three contracts expired, and one member passed away during 2019/20.

Credit adjustment represents over accrual from the prior financial year relating to an expired membership.

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Peter Dengate Thrush	-	36
Mel Orange	44	18
Geraldine Baumann	18	14
John O'Sullivan	-	4
Susan Roberts	-	2
Nicola Wills	(4)	6
Denis O'Rourke	8	2
Lee Wilson	15	6
	81	**88**

17. Advisory group and working group fees

Advisory groups and working groups comprise members paid by the Authority and members working in the industry who are paid by their own organisation. The members listed below are those paid by the Authority and do not represent the complete membership of each group. Credit adjustment represents over accrual from the prior financial year relating to two members who left the group.

		ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
Security and Reliability Council	Heather Roy (Chair)	17	11
	Anne Herrington	-	1
	Barbara Elliston	2	3
	Nanette Hammond	2	-
Market Development Advisory Group	Tony Baldwin (Chair)	9	16
	Ann Whitfield	2	2
	Al Yates	(3)	3
Innovation and Participation Advisory Group	John Hancock (Chair)	22	17
	Allan Miller	7	3
	Rosalind Archer	(1)	3
	Tim Rudkin	3	8
	Scott Willis	8	4
	Roxanne Salton	5	-
		73	**71**

18. Related party transactions

The Authority is a wholly owned entity of the Crown and receives funding by way of appropriations from the Crown.

Related party disclosures have not been made for transactions with related parties that are within a normal supplier or client/recipient relationship on terms and conditions no more or less favourable than those that it is reasonable to expect the Authority would have adopted in dealing with the party at arm's length in the same circumstances. Further, transactions with other government agencies (for example, government departments and Crown entities) are not disclosed as related party transactions when they are consistent with the normal operating arrangements between government agencies and undertaken on the normal terms and conditions for such transactions.

RELATED PARTY TRANSACTIONS REQUIRED TO BE DISCLOSED

GOVERNMENT-RELATED ENTITIES

The Authority purchased system operator and technical advisory services from Transpower New Zealand Ltd, as well as the provision of FTR manager services and market support services from their division Energy Market Services (EMS), for a total of $43.911 million (2020: $42.494 million).

KEY MANAGEMENT PERSONNEL COMPENSATION

Key management personnel include the Board and Senior Leadership Team (Chief Executive, Chief Operating Officer, Chief Strategy Officer, Communication Lead, Programme Director TPM and General Managers). Their remuneration and full-time equivalents were as follows:

	ACTUAL 2020/21	ACTUAL 2019/20
BOARD MEMBERS		
Remuneration ($000)	563	654
Full-time equivalent members	*1.66*	*1.75*
SENIOR LEADERSHIP TEAM		
Remuneration ($000)	2,006	1,666
Full-time equivalent members	*7.13*	*6.02*
Total key management personnel remuneration ($000)	**2,569**	**2,320**
Total full-time equivalent personnel	***8.79***	***7.77***

The full-time equivalent for Board members has been determined based on actual hours spent attending Board meetings, events or meetings representing the Authority and time spent preparing for meetings.

19. Financial instruments

The Authority is party to financial instrument arrangements as part of its everyday operations. These financial instruments include bank accounts, accounts receivable classified as financial assets at amortised cost and accounts payable classified as financial liability at amortised cost.

FINANCIAL INSTRUMENT RISKS

INTEREST RATE RISK

Interest rate risk is the risk that the return on funds invested and the cost of borrowed funds fluctuate due to changes in market interest rates.

The Authority's exposure to interest rate risk on funds invested is limited to on-call bank deposits and term deposits, which are subject to variable interest rates.

Under the Crown Entities Act 2004, the Authority requires Ministerial approval to enter into a borrowing arrangement. The Authority has no borrowings, and accordingly, there is no interest rate exposure on borrowed funds.

CREDIT RISK

Credit risk is the risk that a third party defaults on its obligations to the Authority causing the Authority to incur a loss. The Authority only invests in financial institutions that have high credit ratings.

LIQUIDITY RISK

Liquidity risk is the risk that the Authority encounters difficulties raising liquid funds to meet commitments as they fall due. The Authority has a low exposure to liquidity risk as it does not enter into credit arrangements except those available from suppliers as part of normal operating agreements and aims to maintain sufficient funds available on call to meet its liquidity requirements.

CURRENCY RISK

Currency risk is the risk that debtors and creditors due in foreign currency fluctuate because of changes in foreign exchange rates. The Authority has no significant exposure to currency risk on its financial instruments.

20. Capital management

The Authority's capital is its equity, comprised of accumulated funds and represented by net assets.

The Authority is subject to the financial management and accountability provisions of the Crown Entities Act 2004, which impose restrictions in relation to borrowings, acquisition of securities, issuing guarantees and indemnities and the use of derivatives.

The Authority prudently manages its revenues, expenses, assets, liabilities and general financial dealings to ensure it effectively achieves the objectives and purpose while remaining a going concern.

21. Contingencies

There are no known contingent assets or liabilities (2019/20: Nil) and no guarantees under the Crown Entities Act 2004 (2019/20: Nil).

22. Post balance date events

No significant events that would materially affect the financial statements have occurred between 30 June 2021 and the date of signing the financial statements.

23. Explanation of major variances against budget

EXPENDITURE AGAINST APPROPRIATIONS

APPROPRIATION AND OUTPUT CLASSES	ACTUAL 2020/21 $000	BUDGET 2020/21 $000	VARIANCE $000
OPERATIONAL APPROPRIATION			
Electricity industry governance and market operations appropriation	76,627	76,936	309
CONTINGENT APPROPRIATION			
Litigation expenses funded by appropriation	1,114	-	(1,144)
Litigation expenses funded by internal reserves	660	-	(660)
Total	**78,431**	**76,936**	**(1,495)**

ELECTRICITY INDUSTRY GOVERNANCE AND MARKET OPERATIONS

This appropriation provides funding for the general operations of the Authority and the operation of the electricity system and market. Expenditure in 2020/21 was $0.309 million less than budget. This was primarily driven by reduction in system operator and service provider expenses of $1.341 million that is partly offset by an increase in Authority operating expenses of $1.032 million.

MANAGING THE SECURITY OF NEW ZEALAND'S ELECTRICITY SUPPLY

This appropriation is contingent in nature and provides funding to allow the management of emergency events by the system operator, if required, including increased monitoring and management responsibilities in the event of an emerging security situation and planning and running an emergency conservation campaign. No expenditure was incurred under this appropriation in 2020/21.

ELECTRICITY LITIGATION FUND

This appropriation provides funding to ensure that the regulatory body for the electricity industry is able to participate in litigation effectively and without delay. The appropriation is contingent in nature, and expenditure is only incurred if litigation arises. The cost of litigation in 2020/21 was $1.804 million, of which $1.144 million was funded by appropriation.

The majority of this cost related to a judicial review of the Authority's June 2020 Transmission Pricing Methodology (TPM) guidelines decision initiated by Trustpower in late 2020, with five other parties then joining the proceedings. The Authority is robustly defending the judicial review. The extent of document discovery required and the extensive evidence to be responded to have contributed to higher-than-expected costs for the Authority, including engaging expert witnesses.

STATEMENT OF COMPREHENSIVE REVENUE AND EXPENSE

CROWN APPROPRIATIONS

Revenue from Crown appropriations was $0.835 million higher than the budget in 2020/21. This is mainly due to litigation expenses during 2020/21 of $1.804 million against an appropriation of $1.144 that is not included in the budget due to its contingent nature.

DEPRECIATION, AMORTISATION AND IMPAIRMENT

Depreciation, amortisation and impairment expenses were $0.720 million lower than budget. This was mainly due to lower system amortisation expenses due to delays in commissioning dates and a smaller number of system changes than were budgeted for.

PERSONNEL

Personnel costs were $2.670 million higher than budget. The increase in costs funded an uplift in capability across the organisation, supported key published work programme initiatives and enabled the Authority to give priority to the Government's response to the Electricity Pricing Review recommendations.

SERVICE PROVIDER CONTRACTS

Costs associated with the system operator and market service providers were $1.341 million lower than budget. This was driven by service provider expenses that were $0.757 million below budget due to the delays in completion of software projects and system operator expenses that were $0.584 million below budget due to the system operator's recovery on investments in assets being lower than the maximum provided for when the appropriation was set.

OTHER EXPENSES

Other expenses were $0.203 million higher than budget. This is driven by $1.804 million spent on litigation, which is not included in the budget due to the Litigation Fund being a contingent appropriation. The overspend is partly offset by underspends in various projects.

STATEMENT OF FINANCIAL POSITION

CASH AND CASH EQUIVALENTS

Cash and cash equivalents were $0.737 million higher than budget. Explanation for this variance is outlined in the statement of cash flows section later in this note.

INTANGIBLE ASSETS

Intangible assets were $0.589 million higher than budget due to the system upgrade of the FTR software.

REFUND OF APPROPRIATION TO THE CROWN

The Authority incurred expenditure that was $0.644 million less than the amount of appropriation funding received from the Crown. This unspent funding will be returned to the Crown.

STATEMENT OF CASH FLOWS

RECEIPTS FROM THE CROWN

The Authority received $78.415 million cash from the Crown, which is made up of $76.936 million from the electricity industry governance and market operations appropriation baseline and $1.479 million received from the in-principle expense transfer received from the prior year. An additional $1.144 million for the Litigation Fund was included in the wash up calculation back to the Crown.

PAYMENTS TO SUPPLIERS

Payments to suppliers were $2.717 million lower than budget mainly due to timing of payables, which increased from $5.694 million in 2019/20 to $8.526 million in 2020/21.

CASH AND CASH EQUIVALENTS AT 30 JUNE 2021

The closing cash balance at 30 June 2021 was $0.737 million higher than budget. This was primarily due to brought forward cash balance of $1.419 million partly offset by increased payments to suppliers and personnel.

Statement of electricity levy of industry participants

Levies collected from industry participants during the financial year are deposited into a Crown bank account administered by MBIE. A reconciliation is carried out after the end of the financial year between levies collected and expenditure to be recovered by the levy. The Crown will either provide a refund to, or request additional payment from, individual industry levy payers based on this reconciliation. Any over or under recovery of the Energy Efficiency and Conservation Authority portion of the levy is applied as an adjustment to the levy rate in future years, rather than being refunded or collected through the reconciliation process.

From 1 July 2020 to 30 June 2021, the levies collected were 1.1 percent lower than the expenditure to be recovered. The difference is expected to be $0.889 million and will be invoiced to levy payers.

The final figure may vary from this amount, and some levy payers may still be required to pay additional levies while others receive a refund, depending on whether they are generators, retailers or distributors and based on variations from estimated volumes of dispatches, sales and customer connections.

	ACTUAL 2020/21 $000	ACTUAL 2019/20 $000
TOTAL LEVIES COLLECTED BY THE CROWN	**82,550**	**79,692**
Electricity Authority expenditure	78,431	73,644
Energy Efficiency and Conservation Authority (EECA) operations	5,008	5,200
Total expenditure to be recovered by levies	**83,439**	**78,844**
Total owed to / (owed by) levy payers by the Crown	**(889)**	**848**

INDEPENDENT AUDITOR'S REPORT

To the readers of the Electricity Authority's financial statements and performance information for the year ended 30 June 2021.

The Auditor-General is the auditor of the Electricity Authority (the Authority). The Auditor-General has appointed me, Jacques Du Toit, using the staff and resources of Audit New Zealand, to carry out the audit of the financial statements and the performance information, including the performance information for appropriations, of the Authority on his behalf.

OPINION

We have audited:

- the financial statements of the Authority on pages 56 to 74, that comprise the statement of financial position and statement of commitments as at 30 June 2021, the statement of comprehensive revenue and expense, statement of changes in equity and statement of cash flows for the year ended on that date and the notes to the financial statements including a summary of significant accounting policies and other explanatory information; and

- the performance information of the Authority on pages 12 to 49.

In our opinion:

- the financial statements of the Authority on pages 56 to 74:
  - present fairly, in all material respects:
    - its financial position as at 30 June 2021; and
    - its financial performance and cash flows for the year then ended; and
  - comply with generally accepted accounting practice in New Zealand in accordance with Public Benefit Entity Reporting Standards; and

- the performance information on pages 12 to 49:
  - presents fairly, in all material respects, the Authority's performance for the year ended 30 June 2021, including:
    - for each class of reportable outputs:
      - › its standards of delivery performance achieved as compared with forecasts included in the statement of performance expectations for the financial year; and
      - › its actual revenue and output expenses as compared with the forecasts included in the statement of performance expectations for the financial year; and
      - what has been achieved with the appropriations; and
      - the actual expenses or capital expenditure incurred compared with the appropriated or forecast expenses or capital expenditure.
  - complies with generally accepted accounting practice in New Zealand.

Our audit was completed on 3 December 2021. This is the date at which our opinion is expressed.

The basis for our opinion is explained below. In addition, we outline the responsibilities of the Board and our responsibilities relating to the financial statements and the performance information, we comment on other information, and we explain our independence.

BASIS FOR OUR OPINION

We carried out our audit in accordance with the Auditor-General's Auditing Standards, which incorporate the Professional and Ethical Standards and the International Standards on Auditing (New Zealand) issued by the New Zealand Auditing and Assurance Standards Board. Our responsibilities under those standards are further described in the Responsibilities of the auditor section of our report.

We have fulfilled our responsibilities in accordance with the Auditor-General's Auditing Standards.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

RESPONSIBILITIES OF THE BOARD FOR THE FINANCIAL STATEMENTS AND THE PERFORMANCE INFORMATION

The Board is responsible on behalf of the Authority for preparing financial statements and performance information that are fairly presented and comply with generally accepted accounting practice in New Zealand. The Board is responsible for such internal control as they determine is necessary to enable them to prepare financial statements and performance information that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements and the performance information, the Board is responsible on behalf of the Authority for assessing the Authority's ability to continue as a going concern. The Board is also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting, unless there is an intention to merge or to terminate the activities of the Authority, or there is no realistic alternative but to do so.

The Board's responsibilities arise from the Crown Entities Act 2004 and the Public Finance Act 1989.

RESPONSIBILITIES OF THE AUDITOR FOR THE AUDIT OF THE FINANCIAL STATEMENTS AND THE PERFORMANCE INFORMATION

Our objectives are to obtain reasonable assurance about whether the financial statements and the performance information, as a whole, are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit carried out in accordance with the Auditor-General's Auditing Standards will always detect a material misstatement when it exists. Misstatements are differences or omissions of amounts or disclosures, and can arise from fraud or error. Misstatements are considered material if, individually or in the aggregate, they could reasonably be expected to influence the decisions of readers, taken on the basis of these financial statements and the performance information.

For the budget information reported in the financial statements and the performance information, our procedures were limited to checking that the information agreed to the Authority's statement of performance expectations.

We did not evaluate the security and controls over the electronic publication of the financial statements and the performance information.

As part of an audit in accordance with the Auditor-General's Auditing Standards, we exercise professional judgement and maintain professional scepticism throughout the audit. Also:

- We identify and assess the risks of material misstatement of the financial statements and the performance information, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- We obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control.
- We evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board.
- We evaluate the appropriateness of the reported performance information within the Authority's framework for reporting its performance.
- We conclude on the appropriateness of the use of the going concern basis of accounting by the Board and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Authority's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements and the performance information or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Authority to cease to continue as a going concern.
- We evaluate the overall presentation, structure and content of the financial statements and the performance information, including the disclosures, and whether the financial statements and the performance information represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the Board regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Our responsibilities arise from the Public Audit Act 2001.

OTHER INFORMATION

The Board is responsible for the other information. The other information comprises the information included on pages 4 to 11, 50 to 55 and 78 to 105, but does not include the financial statements and the performance information, and our auditor's report thereon.

Our opinion on the financial statements and the performance information does not cover the other information and we do not express any form of audit opinion or assurance conclusion thereon.

In connection with our audit of the financial statements and the performance information, our responsibility is to read the other information. In doing so, we consider whether the other information is materially inconsistent with the financial statements and the performance information or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on our work, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

INDEPENDENCE

We are independent of the Authority in accordance with the independence requirements of the Auditor-General's Auditing Standards, which incorporate the independence requirements of Professional and Ethical Standard 1: International Code of Ethics for Assurance Practitioners issued by the New Zealand Auditing and Assurance Standards Board.

Other than in our capacity as auditor, we have no relationship with, or interests in, the Authority.

Jacques Du Toit
Audit New Zealand
On behalf of the Auditor-General
Wellington, New Zealand

APPENDIX A

MEASURES OF COMPETITION, RELIABILITY AND EFFICIENCY

This appendix provides detailed information to support the high-level progress reported in Part 2 against the outcome measures used to assess the competition, reliability and efficiency parts of our statutory objective.

The 2020/21 financial year marks the first year reporting against updated participant and consumer perception surveys. The results from this year will be used to measure change and progress in future years.

The Herfindahl-Hirschman Index (HHI) is referred to throughout this section. An HHI provides a measure of market concentration. A decreasing HHI indicates decreasing market concentration, which can indicate greater competition. The HHI is calculated as the sum of the squares of the market share of all participants.

Many statistics in this section relate to calendar years. When a year is referred to that is not in the 20XX/XX format (e.g. 2020/21), it can be assumed that it is referring to the calendar year.

High-level overview

During 2020/21, there was some risk to the security of New Zealand's electricity supply, particularly heading into winter 2021. This was the result of 2021 being a La Niña year, with New Zealand experiencing lower than normal levels of hydro storage, and ongoing constrained gas supplies.

While movements in the spot price appeared to be consistent with the market conditions, there is still a question of whether the underlying supply and demand conditions explain the price levels seen in 2020/21. At the Downstream conference in March, the Authority announced a review of the market, focusing on competition in the spot market. This review looks at the structure, conduct and performance of the spot market since the unexpected Pohokura outage in late 2018, and include key periods such as the announcements from the New Zealand Aluminium Smelter in 2020 and the 2021 dry year event.

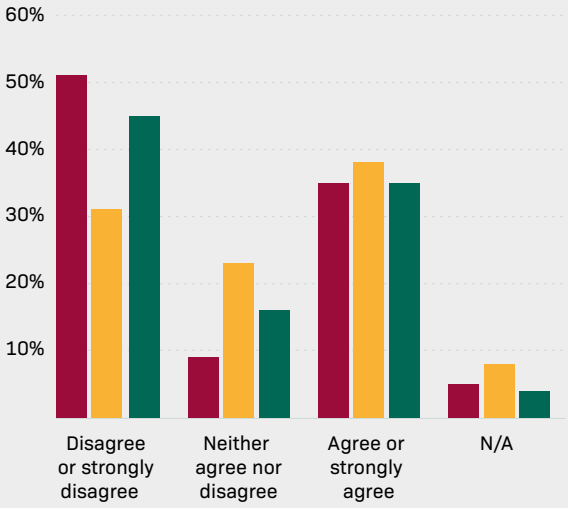
After the immediate risk of the security of supply situation decreased (due to high inflows in autumn and winter 2021), the Authority's focus moved from response to review. The Authority is undertaking a post-event review of how the sector, the system operator and the Authority responded to the 2021 dry year. This work will identify adjustments that should be made to improve the performance of the system in future dry years.

The security of supply and dry year risk were relevant to a number of statistics in 2020/21, particularly the statistics relating to Reliability and Efficiency. Further reviews are ongoing and will provide additional insight into how the system performed during this period.

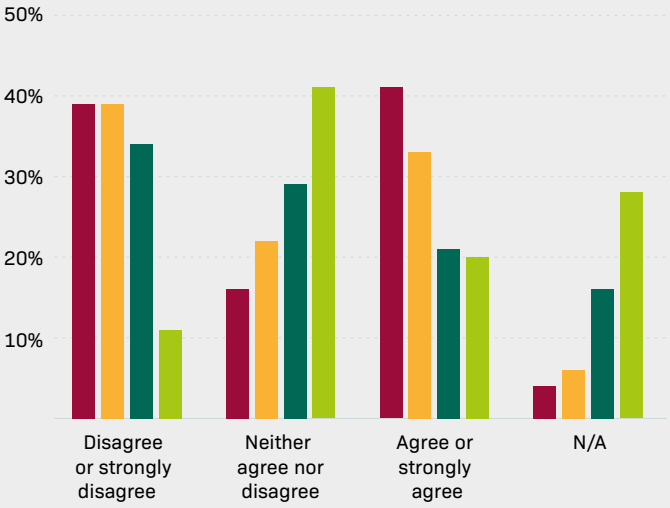
Statistical indicators suggest that electricity markets are performing the way we would expect in these conditions. However, participant perceptions highlight the impact of the dry year, particularly with high prices caused by the supply risk. The flow-on effect of high prices is seen through the participant perceptions on Competition and Reliability and Efficiency to a lesser extent.

Competition

PARTICIPANT PERCEPTIONS



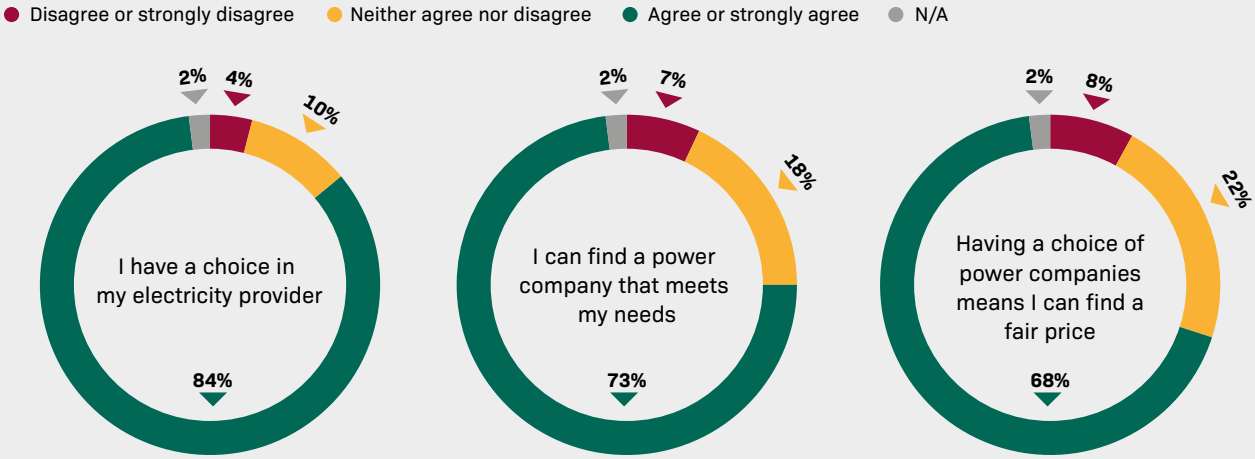
- Competition between electricity generators ensures wholesale market prices are set at an efficient level
- Competition between electricity generators ensures they build the most efficient power stations
- Competition between retailers ensures that consumer prices only rise in line with costs to the electricity companies



Prices in the following markets reflect the outcomes expected in a workable competitive market

- Retail market
- Spot market
- Hedge market, including ASX and OTC
- Ancillary service markets

CONSUMER PERCEPTIONS



STATISTICS

RETAIL MARKET CONCENTRATION (HHI STATISTIC)

Improving downward trend meaning the retail market is less concentrated. Lower concentration can indicate greater competition.

RETAIL MARKET SHARE (CR4 STATISTIC)

Improving downward trend meaning the retail market is less concentrated. Lower concentration can indicate greater competition.

NET PIVOTAL ANALYSIS

The most net pivotal generator is still net pivotal for less than 1 percent of trading periods.

HEDGE MARKET CONCENTRATION (HHI STATISTIC)

HHIs were low overall for both monthly and quarterly contracts.

CONCENTRATION IN THE ANCILLARY SERVICES MARKET (HHI OF RESERVES STATISTIC)

The HHI for New Zealand remains low and stable since the introduction of the national market for reserves.

NUMBER OF RETAILERS' APPROACHES TO CONSUMERS WITH OFFERS TO INDUCE SWITCHING

53 percent of survey respondents had been approached one or more times in the past 24 months. This was down from 56 percent in 2018.

Improved participant perceptions of the competitiveness in electricity markets

Percentage of participants who agree with a range of statements on electricity market competitiveness:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
Competition between electricity generators ensures wholesale market prices are set at an efficient level	51%	9%	35%	5%	100
Competition between electricity generators ensures they build the most efficient power stations	31%	23%	38%	8%	100
Competition between retailers ensures that consumer prices only rise in line with costs to the electricity companies	45%	16%	35%	4%	100

Percentage of participants who agree that prices in the following electricity markets reflect the outcomes expected in a workably competitive market:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
Retail market	39%	16%	41%	4%	100
Spot market	39%	22%	33%	6%	100
Hedge market, including ASX and OTC	34%	29%	21%	16%	100
Ancillary service markets	11%	41%	20%	28%	100

Improved consumer perceptions of the competitiveness in electricity markets

Percentage of consumers who agree with a range of statements on electricity market competitiveness

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
I have a choice in my electricity provider	4%	10%	84%	2%	1009
I can find a power company that meets my needs	7%	18%	73%	2%	1009
Having a choice of power companies means I can find a fair price	8%	21%	68%	3%	1009

Overall improvement across a suite of statistics

The suite of statistics used to assess electricity market competition and summary results to date are:[19]

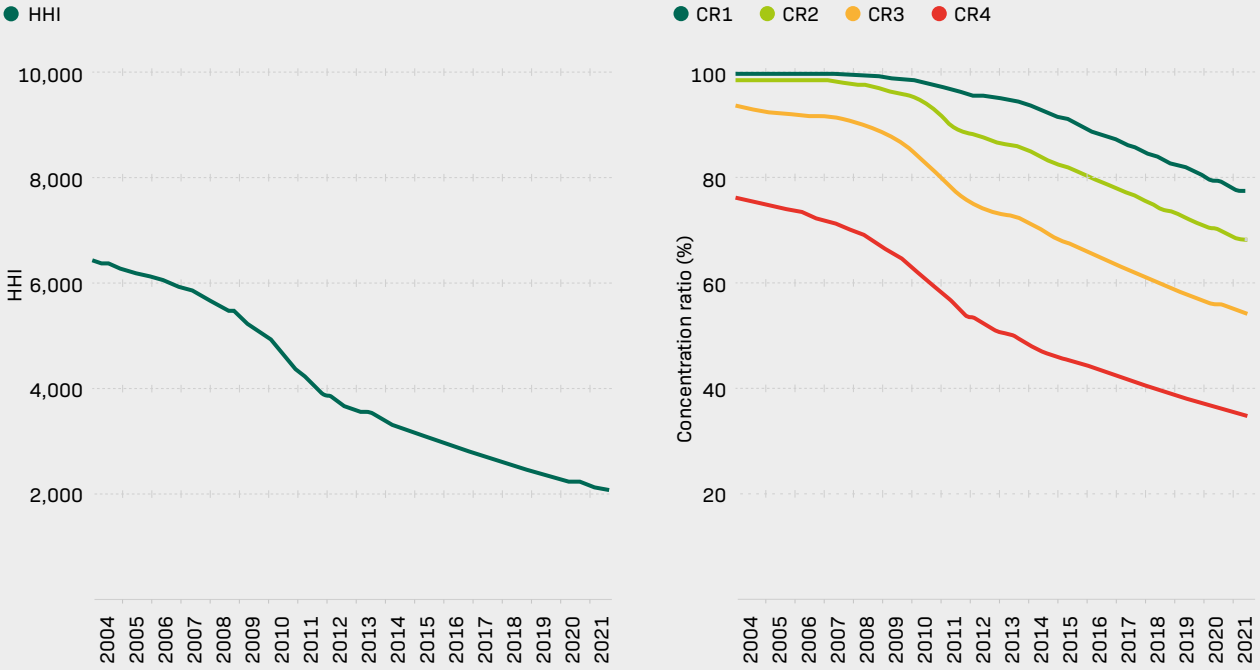
1. Retail market concentration (HHI statistic): Improving downward trend meaning the retail market is less concentrated. Lower concentration can indicate greater competition.
2. Retail market share (CR4 statistic): Improving downward trend meaning the retail market is less concentrated. Lower concentration can indicate greater competition.
3. Net pivotal analysis: The most net pivotal generator is still net pivotal for less than 1 percent of the time.
4. Hedge market concentration (HHI statistic): HHIs were low overall for both monthly and quarterly contracts.
5. Concentration in the ancillary services market (HHI of reserves statistic): The HHI for New Zealand remains low and stable since the introduction of the national market for reserves.
6. Number of retailers' approaches to consumers with offers to induce switching: 53 percent of survey respondents had been approached one or more times in the past 24 months. Down from 56 percent in 2018.

RETAIL MARKET CONCENTRATION/SHARE (STATISTICS 1 AND 2)

We take a structure-conduct-performance approach to assessing competition. We use HHI (statistic 1) and concentration ratio statistics (statistic 2) as measures of concentration.

These measures help to assess the structure of the market. Figure 8 shows these measures are falling in the residential retail market. This indicates the structure of the market is improving.

FIGURE 8: RETAIL MARKET CONCENTRATION/SHARE (RESIDENTIAL ONLY)



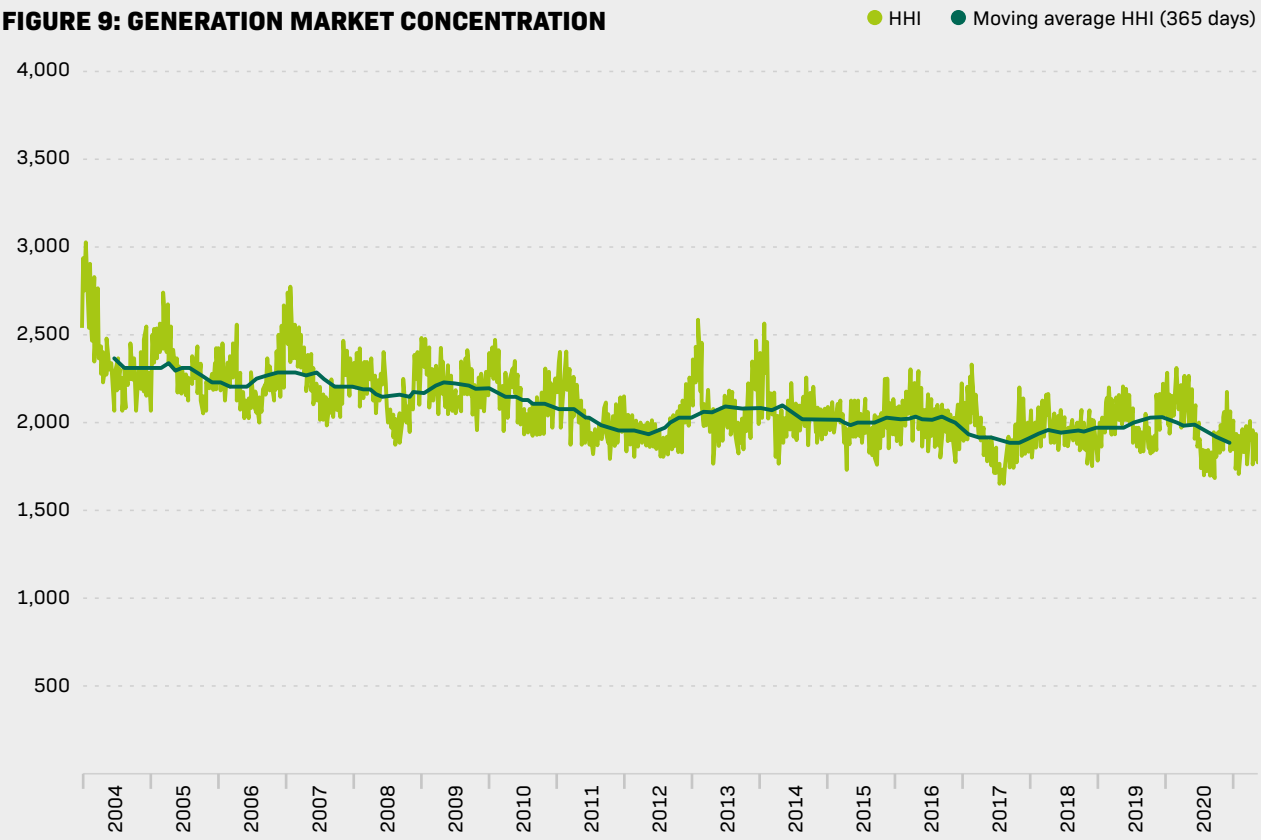
19 See the glossary for explanations of these statistics.

GENERATION MARKET CONCENTRATION

We also look at HHI in the area of electricity generation. Figure 9 shows the HHI is trending downwards over the long-term, although there is some seasonality with the HHI falling during periods when water is scarce and climbing when water is abundant. Low inflows during 2019 and 2021 have meant the HHI has decreased as large hydro generators produce less. This increases the market share of these hydro generators, creating the increase in the HHI.

The chart shows concentration decreasing over the long-term.

FIGURE 9: GENERATION MARKET CONCENTRATION



NET PIVOTAL ANALYSIS (STATISTIC 3)

To assess conduct, we look at the percentage of time that large generators are net pivotal. We use this statistic in the place of residual supply analysis.

A net pivotal generator can profitably and unilaterally raise prices, i.e. a generator is net pivotal when their generation is greater than their own retail and hedge sales in the relevant area. When a supplier is net pivotal, they have incentives to raise prices because:

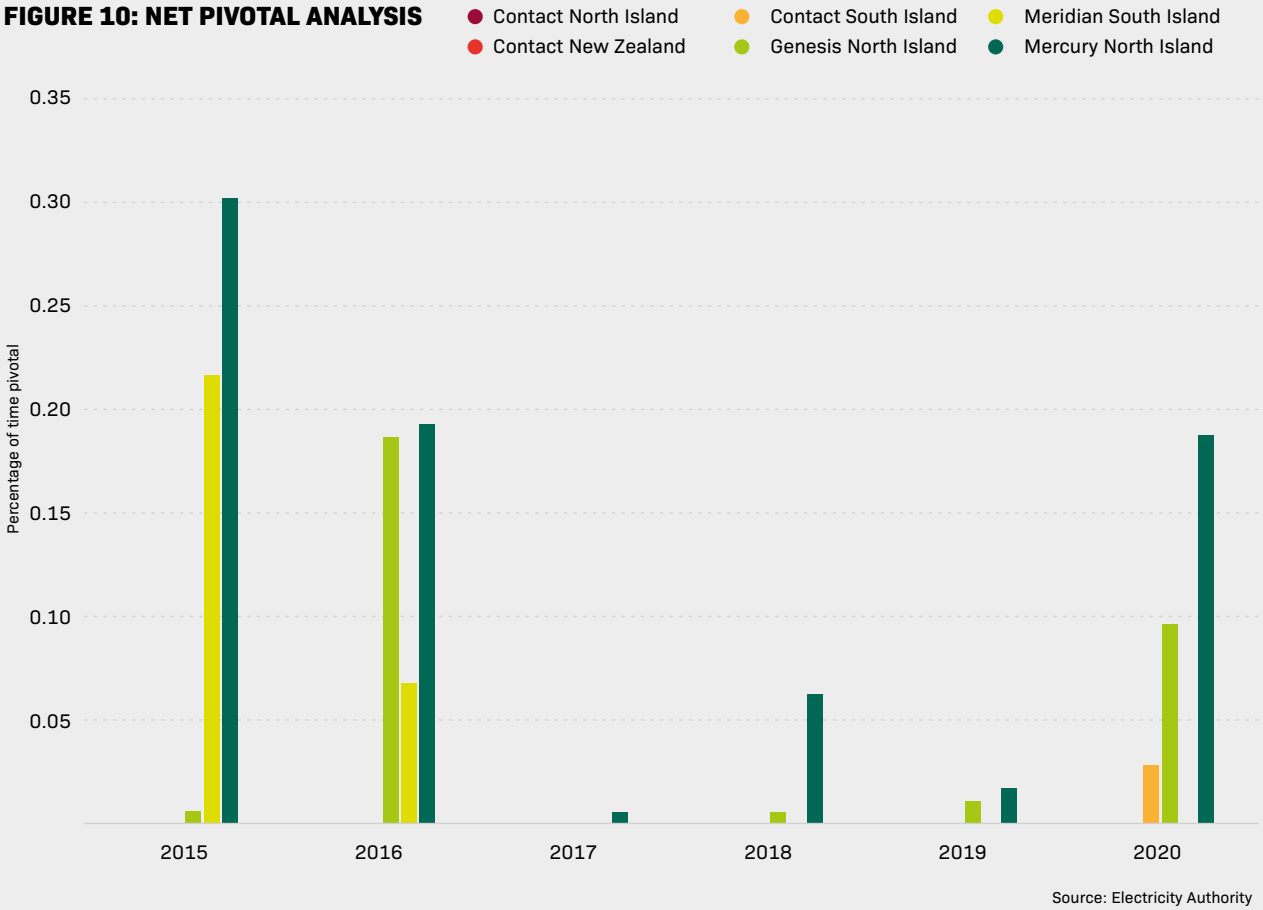
- their hedge position, including retail, provides no financial constraint
- they lack competitive pressure on prices (i.e. they have market power).

This measure is calculated using a simulation where we raise a trader's generation and reserve offers to an unusually high level and calculate the amount of energy the trader would have to produce. The trader's net obligations are subtracted for this amount to calculate the residual amount of energy. Usually, this provides a negative number, which means the trader would not be able to profitably increase its prices. We then measure the percentage of time a trader's residual amount of energy is a positive number. This percentage is the amount of time the trader is considered net pivotal.

Figure 10 shows the number of times large traders are net pivotal. In the last few years, no one generator was net pivotal for more than 1 percent of trading periods. Mercury Energy is the generator who is most frequently net pivotal in 2020. Contact and Genesis also had a small number of trading periods in which they were net pivotal. This may be because of the three-month HVDC outage in early 2020 leading to separate markets for much of the time.

Overall, the long-term trend is downwards to 2019, then increased in 2020. Meridian in the South Island was net pivotal more often in 2015 and 2016. We saw a large fall between 2016 and 2017.[20]

FIGURE 10: NET PIVOTAL ANALYSIS



Source: Electricity Authority

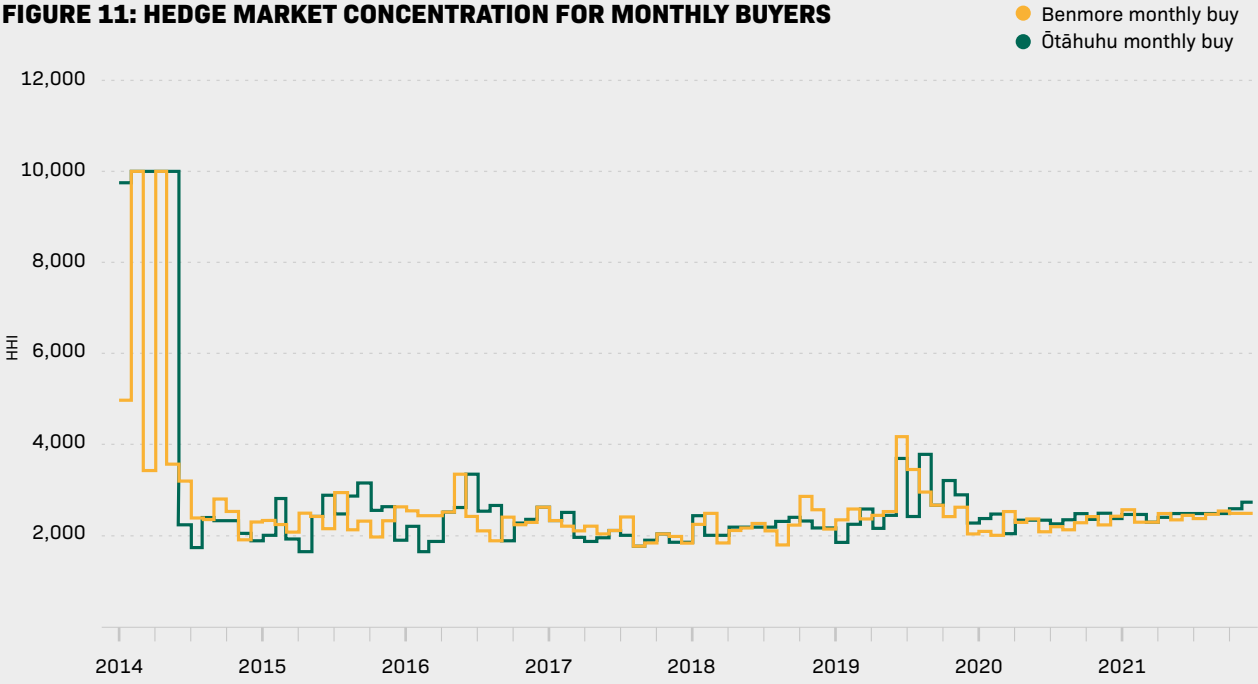
20 The virtual asset swap contracts involves Meridian Energy selling electricity by way of financial hedges, up to 450GWh/year to Genesis Energy and 700GWh/year to Mighty River Power in the South Island, and buying the same volumes of electricity from Genesis Energy and Mighty River Power in the North Island.

HEDGE MARKET CONCENTRATION (STATISTIC 4)

We monitor the hedge market's HHI (statistic 4). Figures 11–14 show the HHI for hedge sellers and buyers for both monthly and quarterly ASX contracts. We monitor both buy and sell HHIs because it is possible to take a position in either direction in a hedge market. The HHI in this context is more a measure of conduct than structure. The HHI in future periods helps us monitor how positions are changing in the market.

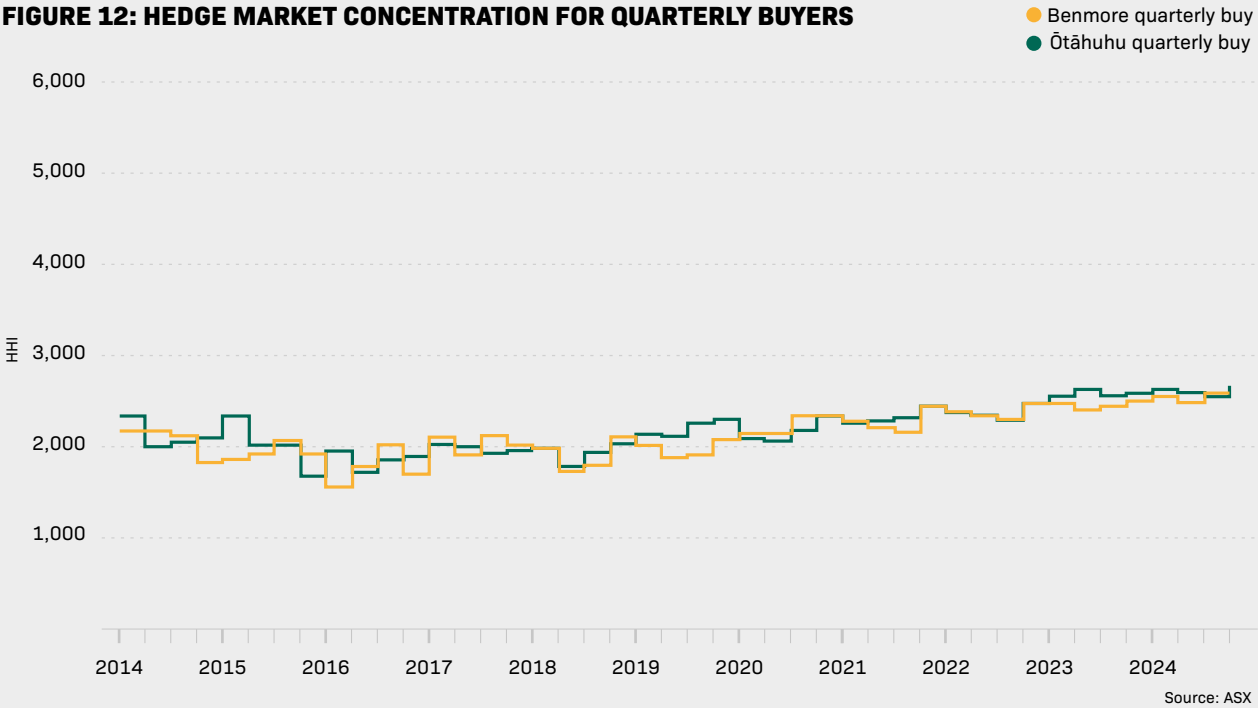
All contracts have HHIs just over 2,000 as at 30 June 2021. Monthly contracts exhibit more volatile HHIs than quarterly contracts. This indicates that there are generally more traders within the quarterly market (seen by a more stable HHI), whereas traders move in and out of the monthly market.

FIGURE 11: HEDGE MARKET CONCENTRATION FOR MONTHLY BUYERS



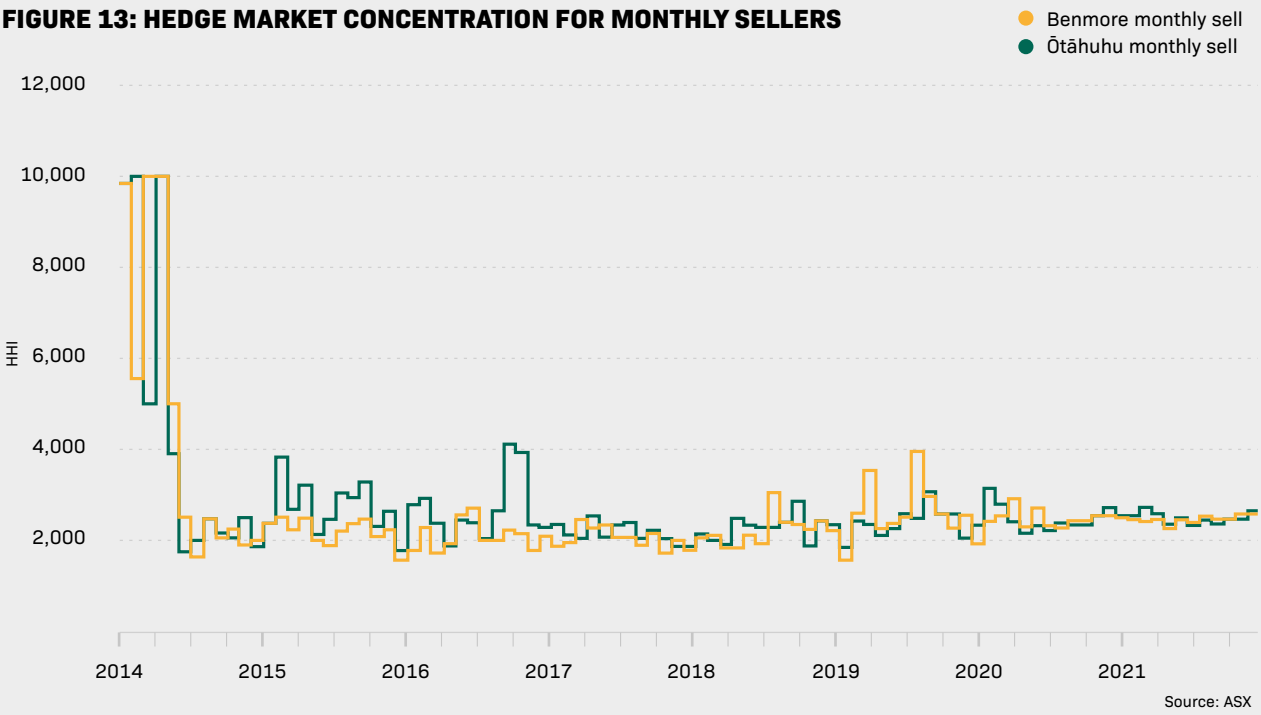
Source: ASX

FIGURE 12: HEDGE MARKET CONCENTRATION FOR QUARTERLY BUYERS



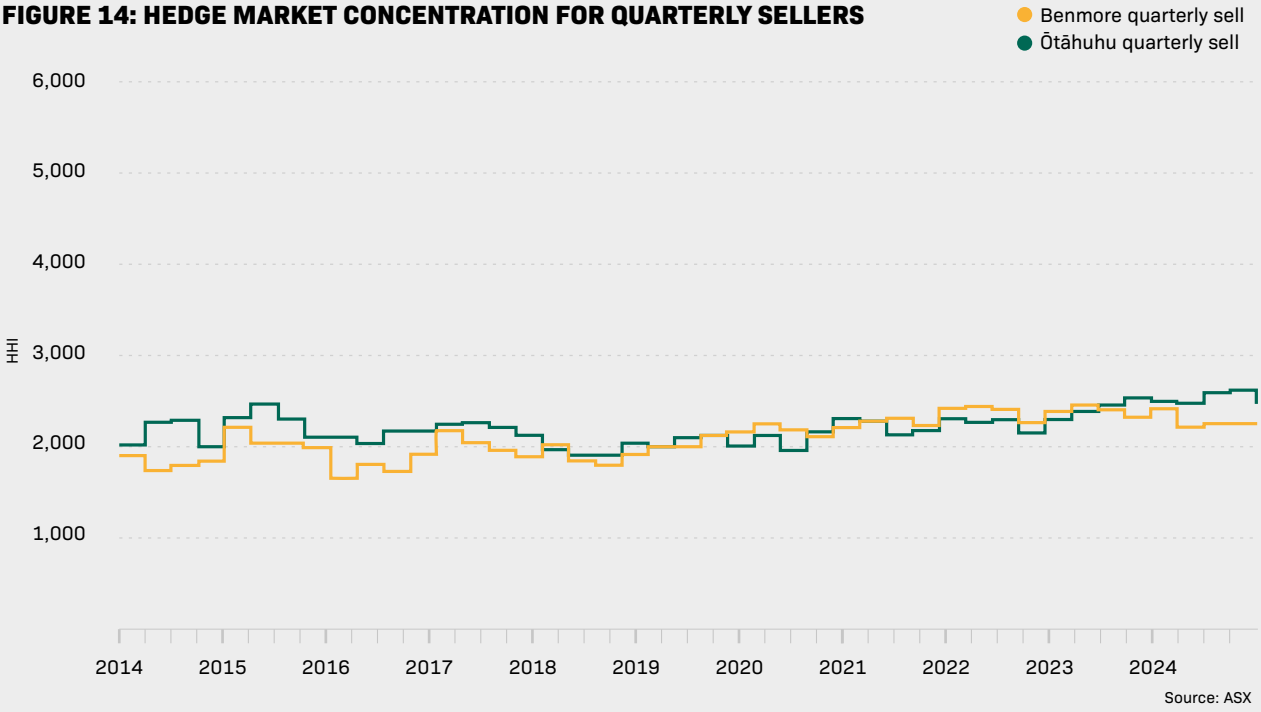
Source: ASX

FIGURE 13: HEDGE MARKET CONCENTRATION FOR MONTHLY SELLERS



Source: ASX

FIGURE 14: HEDGE MARKET CONCENTRATION FOR QUARTERLY SELLERS

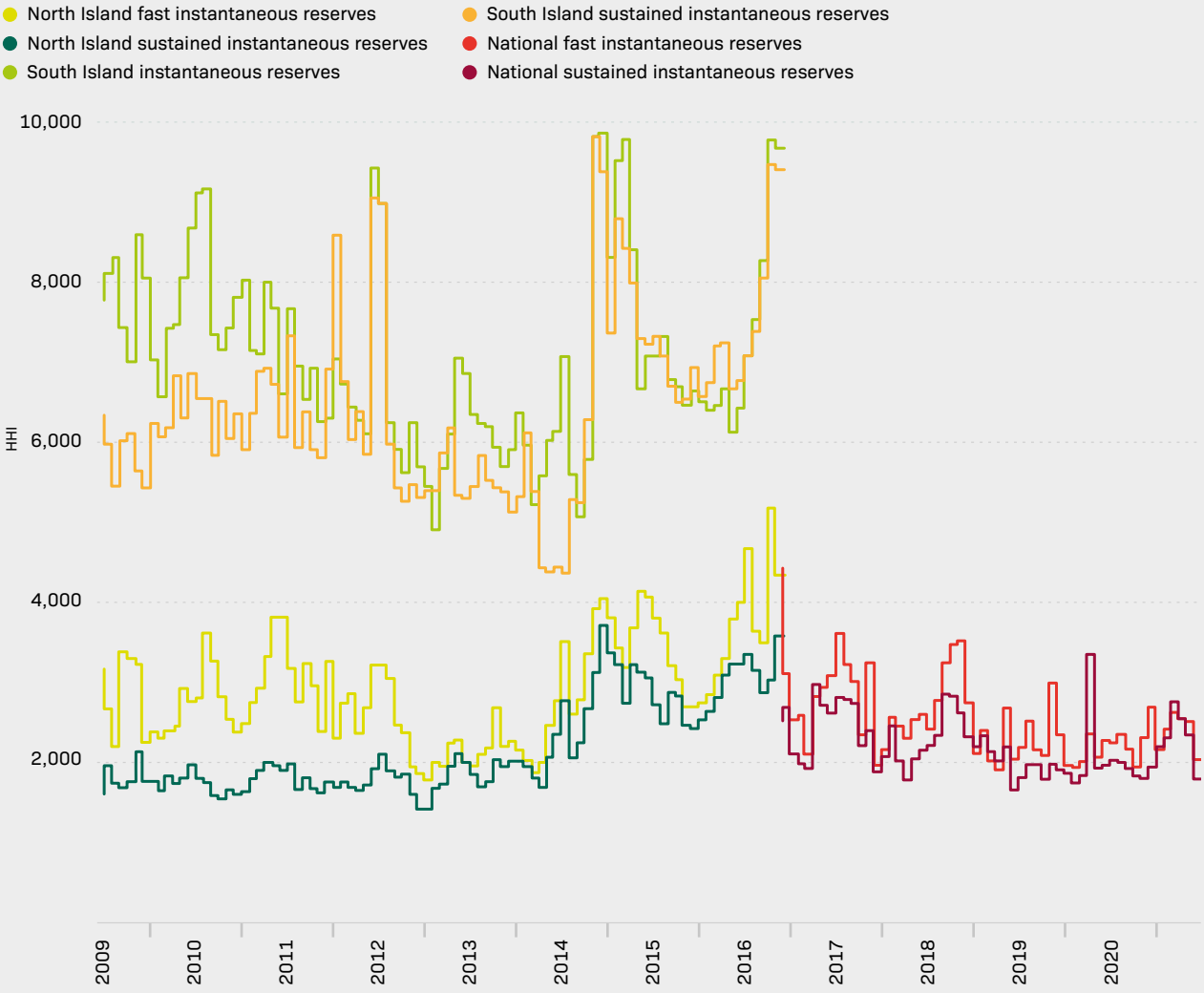


Source: ASX

RESERVES MARKET CONCENTRATION (STATISTIC 5)

The structure of the reserves market is shown in Figure 15, which tracks the monthly HHI for the reserves market in both islands (statistic 5). The South Island reserves market was more concentrated than the North Island simply because there are fewer generators able to provide the service. The chart shows the introduction of a national market for instantaneous reserves has meant a larger market and a lower HHI (the red lines in Figure 15).

FIGURE 15: RESERVES MARKET CONCENTRATION



Source: System operator

APPROACHES TO CONSUMERS TO SWITCH (STATISTIC 6)

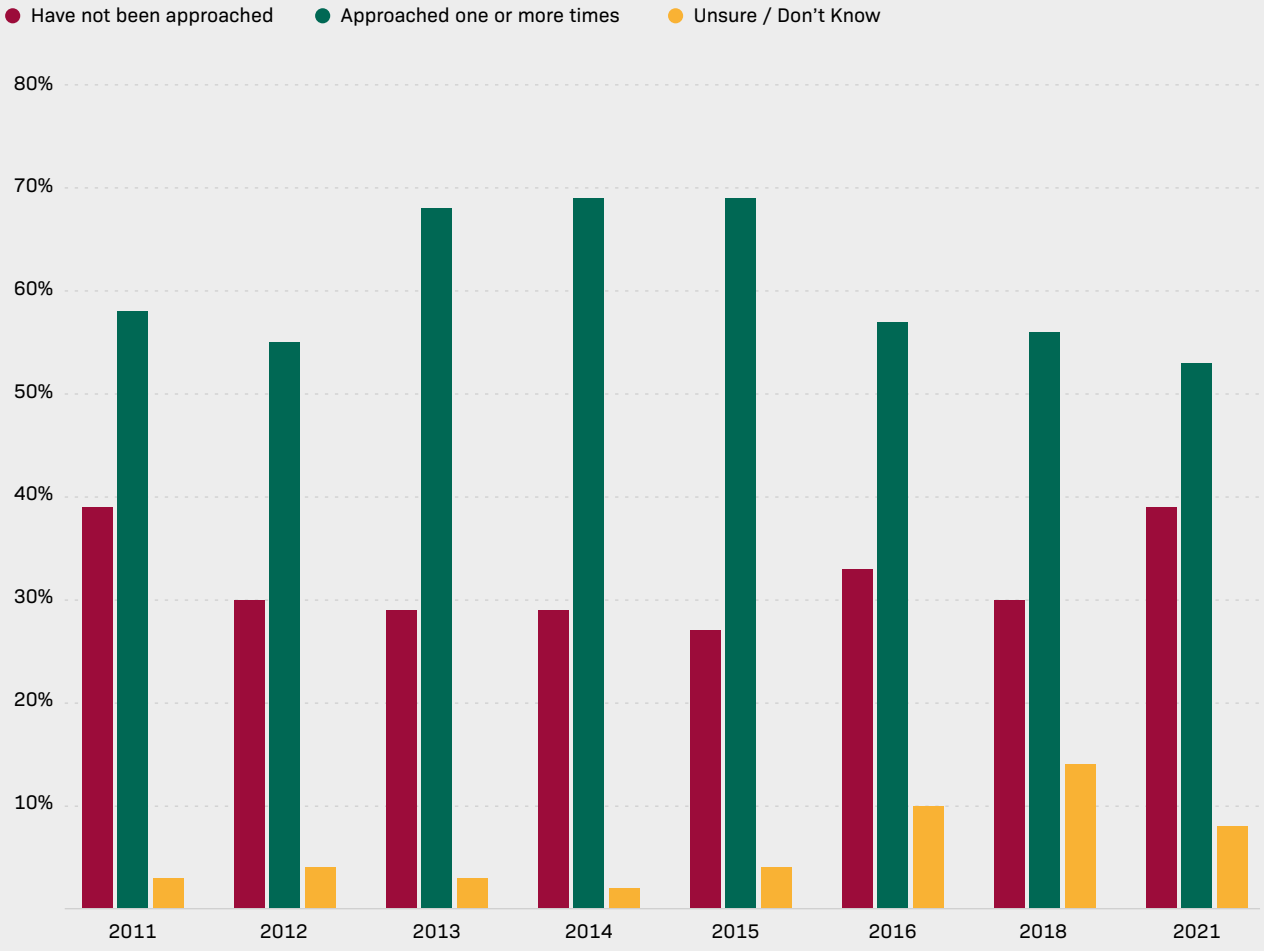
Figure 16 shows the number of consumers who have been approached by retailers from 2011 to 2021, whether by phone or door knocking (statistic 6). This measure indicates retailer conduct in the market.

In 2021, 53 percent of survey respondents indicated they had been approached at least one time in the past 24 months.

The green bars on the chart show the number of consumers being approached to switch retailers has decreased from a peak of 69 percent in 2014 and 2015. Since 2016, there has been a downward trend in the number of approaches made to consumers to 53 percent of survey respondents being approached by a retailer at least once – the lowest since this measure began.

Conversely, the red bars indicate the number of consumers who have not been approached to switch electricity retailers. The 2021 result of 39 percent was the highest it has been since the measure began and represents a statistically significant increase in not approaching when compared to 2018.[21] COVID-19 and the lockdowns experienced since March 2020, as well as retailer conduct, are likely to have contributed to this change

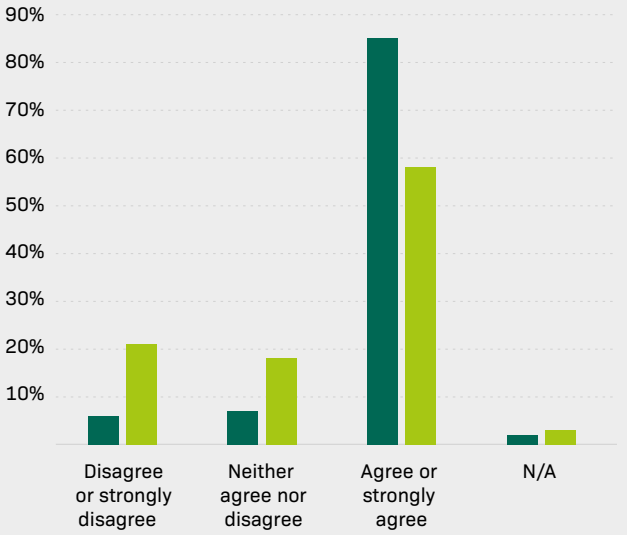
FIGURE 16: APPROACHES TO RESIDENTIAL CONSUMERS TO SWITCH RETAILERS

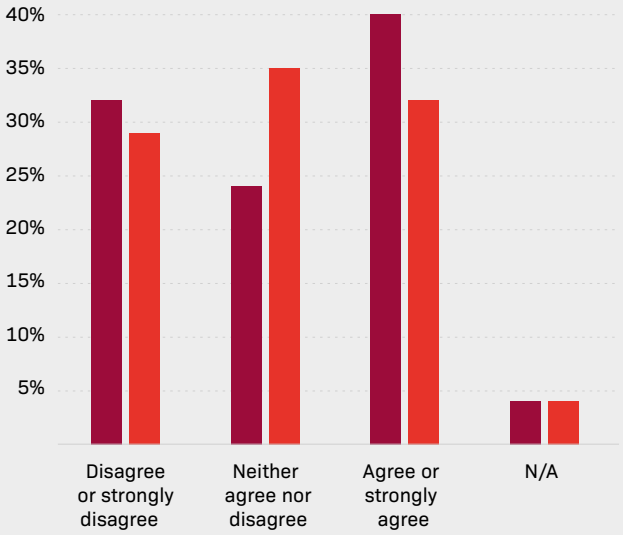


21 t(2207)=4.445, p<.001 Conclusion at the 0.05 critical alpha level.

Reliability

PARTICIPANT PERCEPTIONS

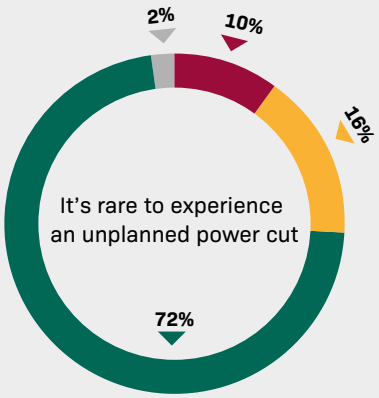


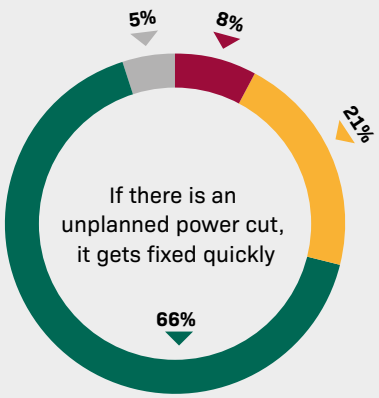


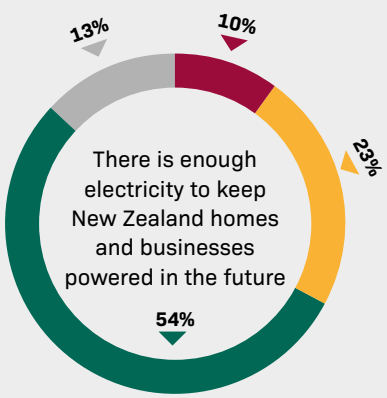
- There is a reliable supply of electricity each day
- There is enough electricity to meet ongoing needs
- The current electricity market arrangements ensure an appropriate balance between reliability and cost
- Over the next 10 years, the electricity system will strike a balance between reliability and cost

CONSUMER PERCEPTIONS

- Disagree or strongly disagree
- Neither agree nor disagree
- Agree or strongly agree
- N/A







STATISTICS

PRICING IN SCARCITY EVENTS REFLECTS OPPORTUNITY COSTS

High prices caused by low hydro storage levels and gas supply issues occurred in 2020/21. Initial analysis found prices reflected market fundamentals, with further in-depth investigation to be conducted in 2021/22.

CAPACITY AND ENERGY MARGINS ARE WITHIN EFFICIENT BOUNDS OR ARE MOVING TOWARDS THOSE BOUNDS

Capacity and energy margins are moving towards the bounds set by the Board.

EFFECTIVE MANAGEMENT OF DRY YEARS OR EMERGENCY EVENTS

High prices caused by low hydro storage levels and gas supply issues occurred in 2020/21. Further in-depth investigation will be conducted in 2021/22.

INVESTIGATION OF RELIABILITY EVENTS DOES NOT IDENTIFY SYSTEMIC ISSUES

There were no reliability events requiring investigation in 2020/21.

Improved participant perceptions on the efficiency on supply reliability

Percentage of participants who agree with a range of statements on electricity supply reliability:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
There is a reliable supply of electricity each day	6%	7%	85%	2%	100
There is enough electricity to meet ongoing needs	21%	18%	58%	3%	100

Improved participant perceptions of the balance between the cost and reliability trade-offs

Percentage of participants who agree with a range of statements on the balance between the cost and reliability trade-offs:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
The current electricity market arrangements ensure an appropriate balance between reliability and cost	32%	24%	40%	4%	100
Over the next 10 years, the electricity system will strike a balance between reliability and cost	29%	35%	32%	4%	100

Improved consumer perceptions of the reliability of electricity in New Zealand

Percentage of consumers who agree with a range of statements on electricity reliability:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
It's rare to experience an unplanned power cut	10%	16%	72%	2%	1009
If there is an unplanned power cut, it gets fixed quickly	8%	21%	66%	5%	1009
There is enough electricity to keep New Zealand homes and businesses powered in the future	10%	23%	54%	13%	1009

Overall improvement across a suite of statistics

The suite of statistics used to assess reliable electricity supply and summary of results to date are:[22]

7. Pricing in scarcity events reflects opportunity cost, as measured by case-by-case analysis: High prices caused by low hydro storage levels and gas supply issues occurred in 2020/21. Initial analysis found prices reflected market fundamentals, with further in-depth investigation to be conducted in 2021/22.

8. Effective management of dry years or emergency events, as measured by case-by-case analysis: High prices caused by low hydro storage levels and gas supply issues occurred in 2020/21. Further in-depth investigation will be conducted in 2021/22.

9. Capacity and energy margins are within efficient bounds or are moving towards those bounds, as measured by the annual security assessment: Capacity and energy margins are moving towards the bounds set by the Board.

10. Investigation of reliability events does not identify systemic issues, as measured by case-by-case analysis: There were no reliability events requiring investigation in 2020/21.

PRICING IN SCARCITY EVENTS (STATISTIC 7)

There was some risk to security of supply heading into winter 2021, as a result of 2021 being a La Niña year, with New Zealand experiencing lower than normal levels of hydro storage, and constrained gas supplies.

The spot price responded in the way we expected it to in these scarce resources and to ensure ongoing supply. Scarce supply led to more expensive generating plant in operation and higher prices.

The Authority is continuing to progress a review of competition in the spot and forward markets. The review includes looking at the structure, conduct and performance of the markets during key periods such as the 2018 Pohokura outage, the announcements from the New Zealand Aluminium Smelter in 2020, and the 2021 dry year event.

EFFECTIVE MANAGEMENT OF DRY YEARS (STATISTIC 8)

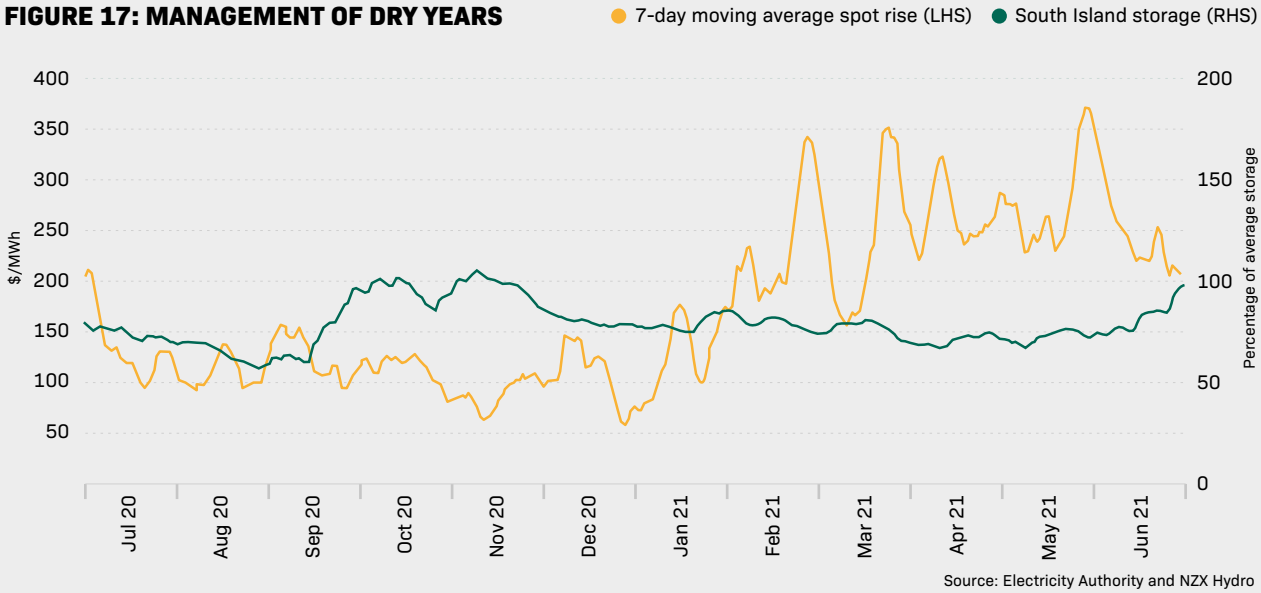
Figure 17 shows the spot price and South Island storage as a percentage of mean storage. Prices during 2021 remained high until storage increased in late June 2021.

There was low storage in the North Island from July to mid-September of 2020 combined with constrained export north due to a scheduled HVDC outage. This caused price separation with higher prices in the North Island and higher thermal generation.

Prices were also high from February 2021 when North Island storage was low, there were periods of very low wind generation and constraints on gas supply. Typically, you would expect to see the inverse relationship as shown in October and November 2020.

The 2020/21 spot prices are being investigated as part of our review of competition in the spot and forward markets.

FIGURE 17: MANAGEMENT OF DRY YEARS



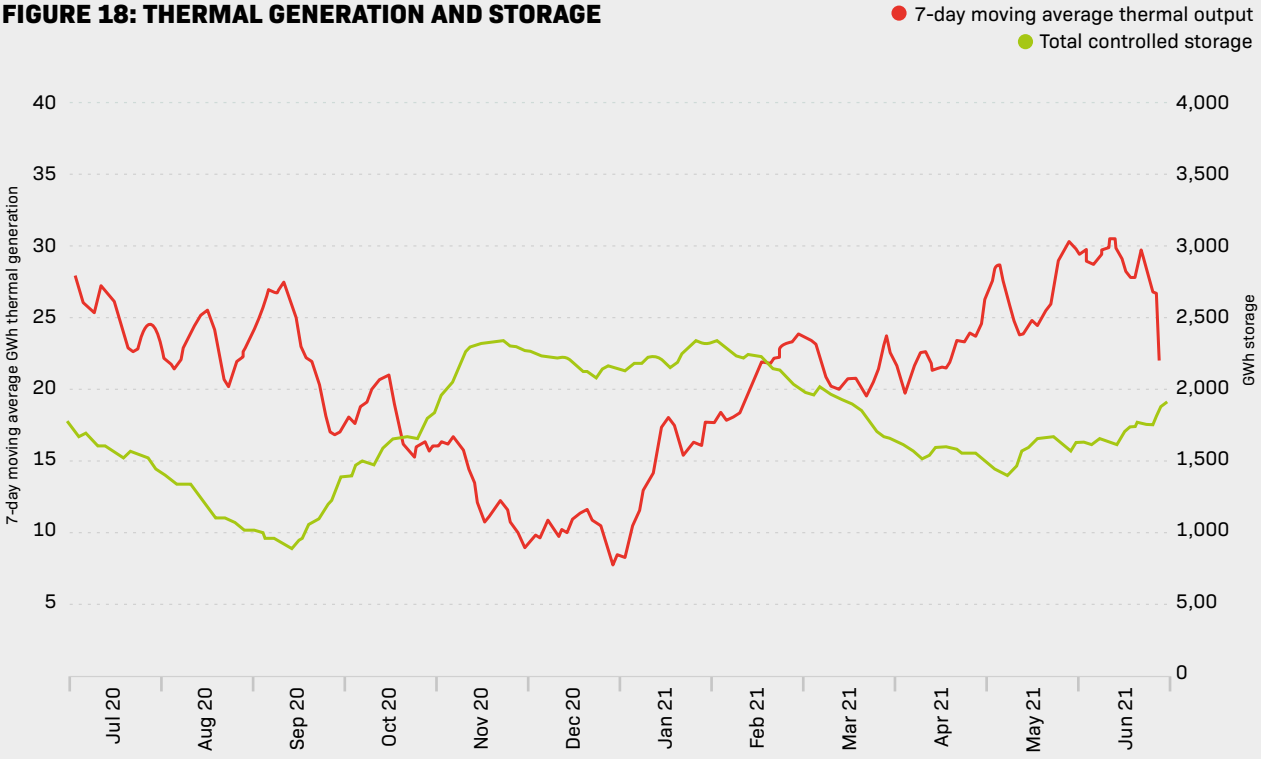
Source: Electricity Authority and NZX Hydro

22 See the glossary for explanations of these statistics.

Figure 18 shows thermal generation and total New Zealand hydro storage

It has a strong inverse relationship, where prices increase as storage falls to make it economic for thermal generators to run.

FIGURE 18: THERMAL GENERATION AND STORAGE



Source: Electricity Authority and NZX Hydro

CAPACITY AND ENERGY MARGINS (STATISTIC 9)

Statistic 9 relates to capacity and energy margins. These are assessed and reported annually by the system operator.[23] The latest security of supply annual assessment (2020) indicates capacity and energy margins are within the efficient bounds set by the board.

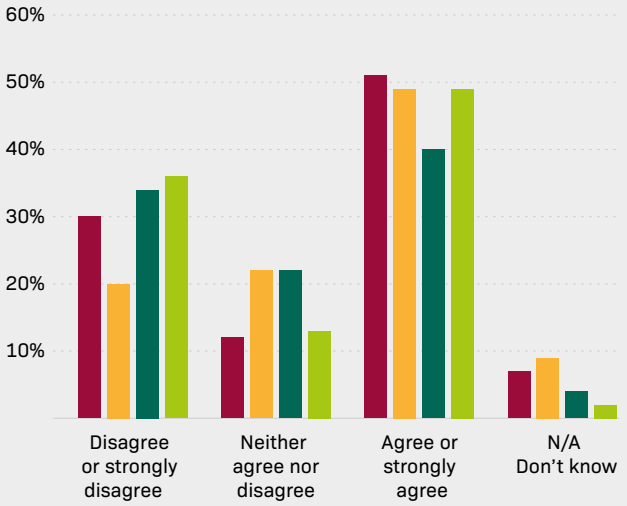
INVESTIGATION OF RELIABILITY EVENTS (STATISTIC 10)

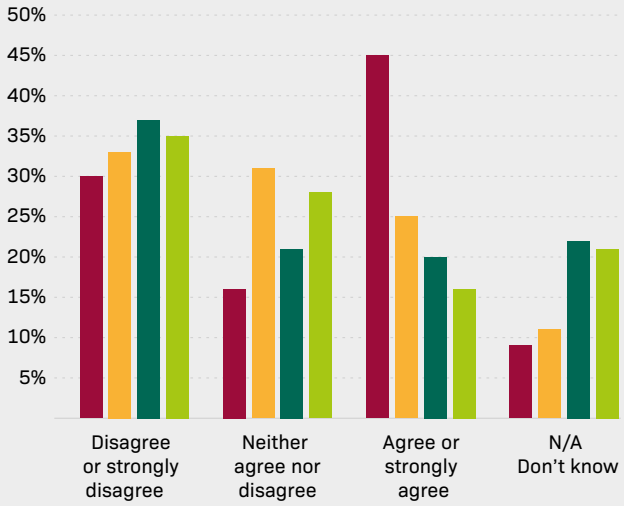
Statistic 10 relates to investigations of reliability events. There have been no events that have warranted investigation. We have asked a risk management consultant to review previous reports produced to determine what general lessons there might be for the industry.

23 The system operator's annual security of supply assessments are available at: www.transpower.co.nz/system-operator/security-supply/security-supply-annual-assessment

Efficiency

PARTICIPANT PERCEPTIONS

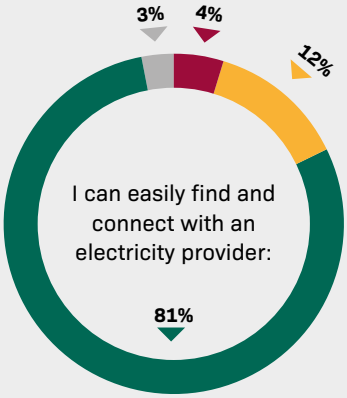


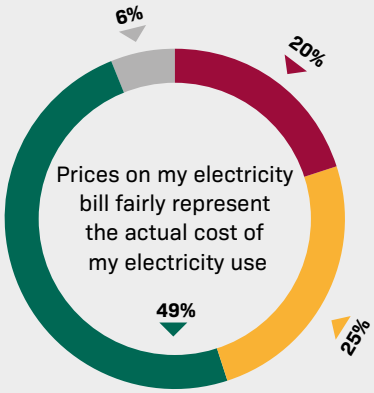


- The New Zealand electricity market ensures electricity is generated efficiently
- The New Zealand electricity market ensures electricity is transmitted efficiently
- The New Zealand electricity market ensures electricity is distributed efficiently
- Competition between electricity retailers promotes efficiency within retail operations
- New Zealand's wholesale electricity market efficiently coordinates electricity production and consumption
- New Zealand's wholesale electricity market efficiently facilitates timely investment in electricity system
- New Zealand's hedge market efficiently coordinates electricity production and consumption
- New Zealand's hedge market efficiently facilitates timely investment in electricity system

CONSUMER PERCEPTIONS

Disagree or strongly disagree · Neither agree nor disagree · Agree or strongly agree · N/A





STATISTICS

ROBUST FUTURES PRICES

The market performed better in 2021 than it did in 2018, largely due to development projects that increased liquidity.

EXCEPTIONAL PRICES ARE JUSTIFIED BY UNDERLYING FUNDAMENTALS

An investigation into the claim of a UTS suggests that spot prices may not have reflected underlying fundamentals during December 2019. This investigation found a UTS, and action to correct work is ongoing.

DRY YEAR PRICES REFLECT STORAGE LEVELS

High prices due to low inflows continued into 2020/21 and were impacted by falling output from the Pohokura gas field. The Authority is currently investigating spot market prices from 2018–2021

REDUCING CONSTRAINED-ON COMPENSATION

Constrained-on costs have continued to fall since 2013.

Improved participant perceptions of the efficiency in electricity markets and transmission and distribution arrangements

Percentage of participants who agree with a range of statements on the efficiency in electricity markets and transmission and distribution arrangements:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
The New Zealand electricity market ensures electricity is generated efficiently	30%	12%	51%	7%	100
The New Zealand electricity market ensures electricity is transmitted efficiently	20%	22%	49%	9%	100
The New Zealand electricity market ensures electricity is distributed efficiently	34%	22%	40%	4%	100
New Zealand's wholesale market efficiently coordinates electricity production and consumption	30%	16%	45%	9%	100
New Zealand's hedge market efficiently coordinates electricity production and consumption	37%	21%	20%	22%	100
New Zealand's wholesale market efficiently facilitates timely investment in the electricity system	33%	31%	25%	11%	100
New Zealand's hedge market efficiently facilitates timely investment in the electricity system	35%	28%	16%	21%	100
Competition between electricity retailers promotes efficiency within retail operations	36%	13%	49%	2%	100

Improved consumer perceptions of the efficiency of electricity in New Zealand

Percentage of consumers who agree with a range of statements on the efficiency of electricity in New Zealand:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
I can easily find and connect with an electricity provider	4%	12%	81%	3%	1009
Prices on my electricity bill fairly represent the actual cost of my electricity use	20%	25%	49%	6%	1009

Overall improvement across a suite of statistics

The suite of statistics used to assess electricity system and market efficiency and summary results to date are:[24]

11. Robust futures prices: The market performed better in 2021 than it did in 2018, largely due to development projects that increased liquidity.

12. Dry year prices reflect storage, as assessed by case-by-case analysis: High prices due to low inflows continued into 2020/21 and were impacted by falling output from the Pohokura gas field. The Authority is currently investigating spot market prices from 2018–2021.

13. Exceptional prices are justified by underlying fundamentals, as assessed by case-by-case analysis: An investigation into the claim of a UTS suggests that spot prices may not have reflected underlying fundamentals during December 2019. This investigation found a UTS, and action to correct work is ongoing.

14. Reducing constrained-on compensation: Constrained-on costs have continued to fall since 2013.

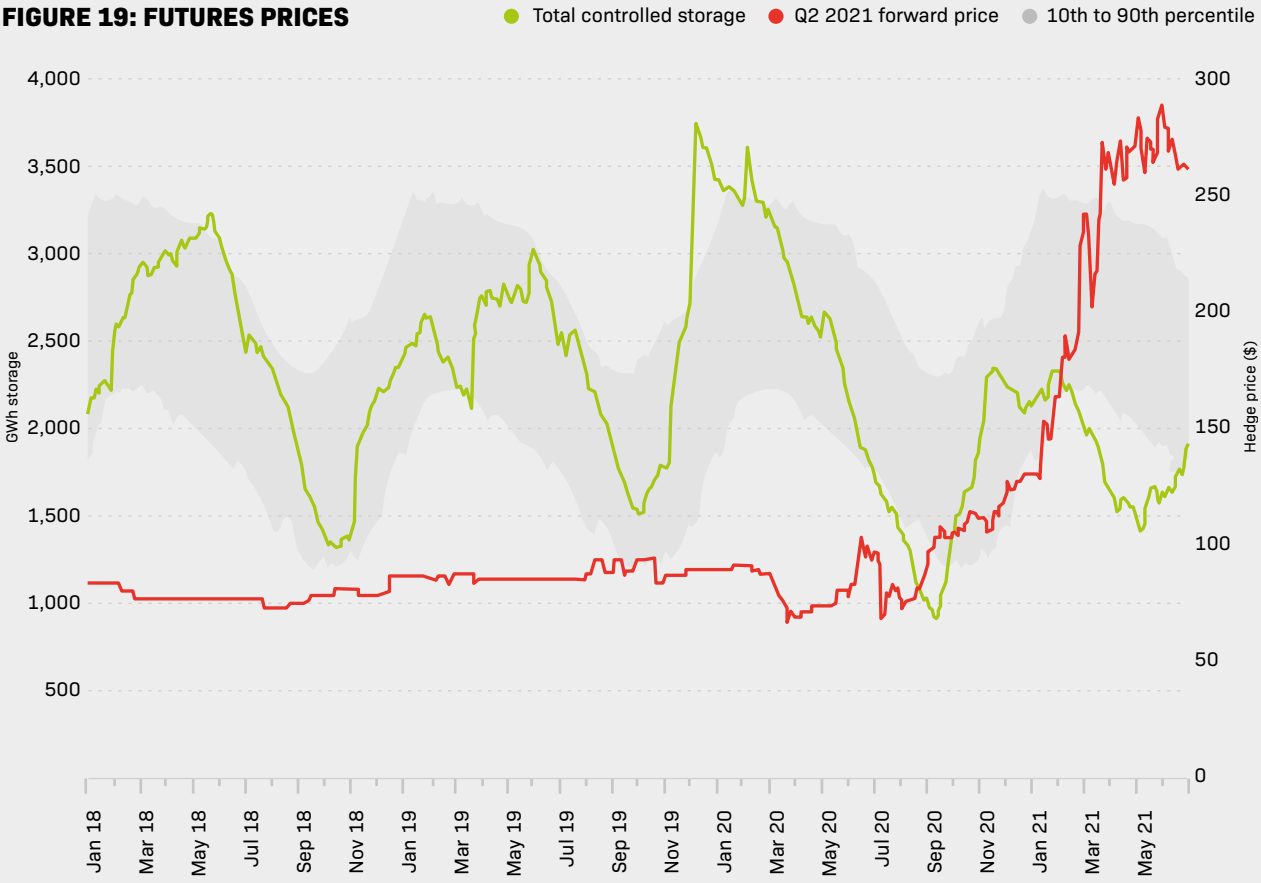
FUTURES PRICES (STATISTIC 11)

Figure 19 shows the hedge price (statistic 11) for the ASX June 2021 quarterly baseload hedge at Benmore and total national hydro controlled storage. The chart demonstrates how the hedge price reflects market fundamentals.

The chart shows the 2021 Q2 hedge price increased sharply from late 2020 due to low storage and lack of gas. The price reflects the underlying fundamental, where prices spike closer to the time as there is more information on the potential supply.

The hedge price did not respond to increased storage in late 2019 because storage at this time was unlikely to affect spot price in Q2 2021.

FIGURE 19: FUTURES PRICES



24 See the glossary for explanations of these statistics.

DRY YEAR PRICES REFLECT STORAGE (STATISTIC 12)

Low North Island inflows during 2020 combined with an HVDC outage from January to March and generation outages during May 2020 caused price separation and high prices as expected. Low inflows and high prices persisted into 2021 and were exacerbated by falling output from the Pohokura gas field. The Authority is reviewing competition in the wholesale market, because if the market is competitive, then we can have confidence in the spot price.

EXCEPTIONAL PRICES (STATISTIC 13)

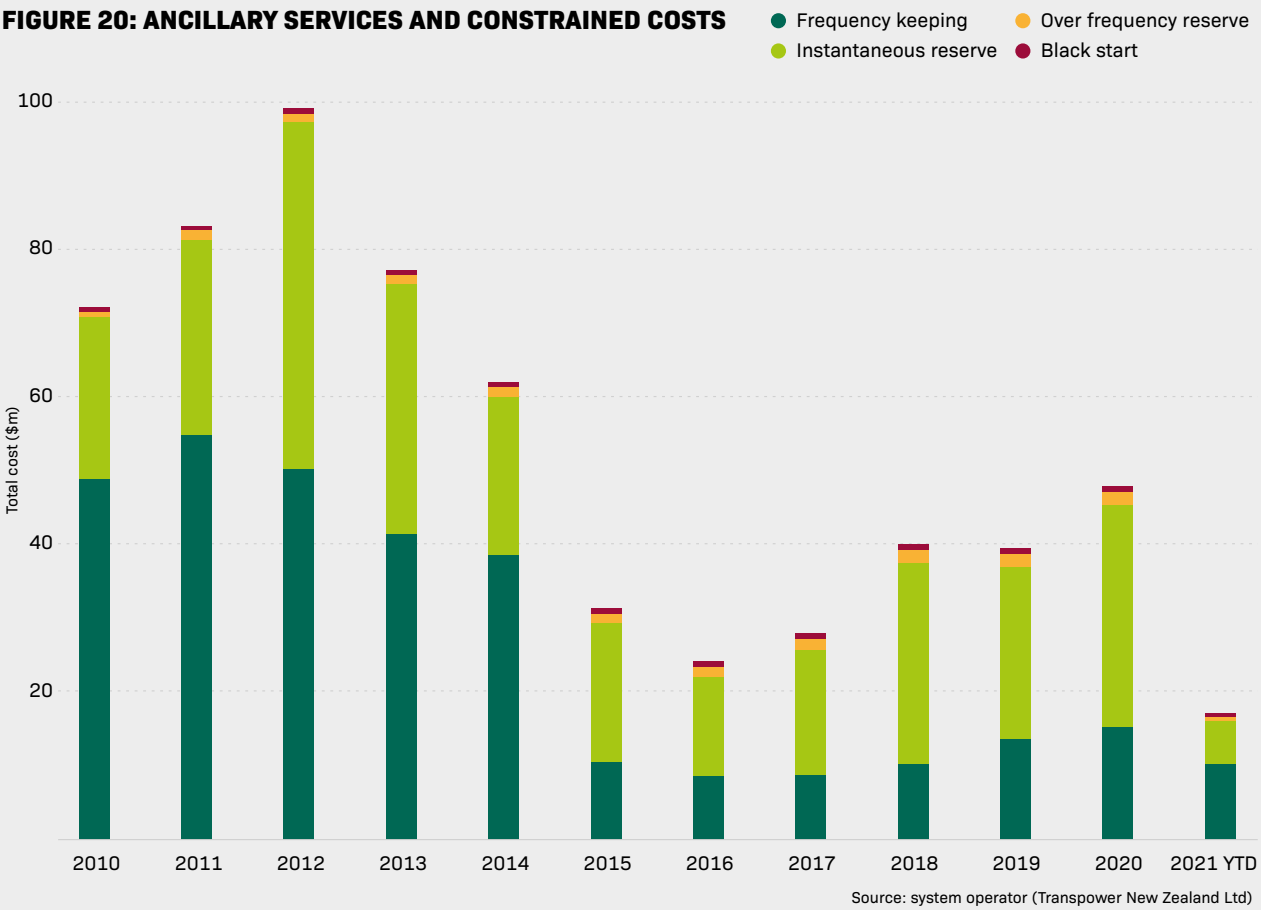
Prices remained high since early 2021 and will be investigated as part of our review of spot market competition.

ANCILLARY SERVICES AND CONSTRAINED COSTS (STATISTIC 14)

Figure 20 shows the total ancillary services costs (statistic 14) from 2010 to 2020 calendar years and to May 2021. It shows overall costs have fallen since 2012 with 2018, 2019 and 2020 being higher, most likely due to high spot prices. The two main components of ancillary services are frequency keeping and instantaneous reserves. These costs are affected by energy costs. The constrained-on and off costs of these ancillary services have been falling since 2013.

Constrained-on costs are also paid in the spot market to out of merit generators in certain circumstances. This occurs when the system operator requires generators to generate during a trading period where the final price is less than the generators' offer price. The Authority introduced new Code changes in March 2020 that removed these payments for ramping generation.

FIGURE 20: ANCILLARY SERVICES AND CONSTRAINED COSTS



Source: system operator (Transpower New Zealand Ltd)

APPENDIX B

SURVEY-BASED MEASURES OF STRATEGIC AMBITIONS

Low-emissions energy

Market participant confidence in settings to facilitate efficient transition

Percentage of participants who agree with the following statement:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
Electricity market settings will support an efficient transition of the energy sector to low-emissions	38%	16%	37%	9%	100

Market participant confidence in reliability as New Zealand transitions to low-emissions energy

Percentage of participants who agree with the following statement:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
The electricity system will maintain reliability through the transition to low-emissions energy	26%	19%	48%	7%	100

Trust and confidence

Participant perceptions of trust and confidence in us and how we are fulfilling our role

Percentage of participants who agree with the following statement:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
I have confidence in the role the EA plays as kaitiaki of the electricity sector	35%	26%	37%	2%	100

Participant perceptions of the quality of our monitoring

Percentage of participants who agree with the following statements:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
The EA actively monitors market outcomes	18%	21%	56%	5%	100
The EA actively monitors participant behaviour	20%	27%	52%	1%	100
The EA holds participants to account for their actions	39%	19%	41%	1%	100

Participant perceptions of reliability and operational efficiency

Percentage of participants who agree with the following statements:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
The electricity sector operates efficiently	35%	15%	48%	2%	100
The electricity system delivers a high level of reliability	12%	10%	78%	0%	100

Thriving competition

Participant perception of the ability for new entrants to compete with incumbents

Percentage of participants who agree with the following statements:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
New entrant retailers can operate on a level playing field with established retailers	56%	16%	19%	9%	100
New entrant generators can operate on a level playing field with established generators	43%	21%	18%	18%	100

Innovation flourishing

Participant perception of the ability of the system to support rapid change

Percentage of participants who agree with the following statement:

	DISAGREE OR STRONGLY DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE OR STRONGLY AGREE	N/A	COUNT (n=)
The electricity regulatory environment supports incorporation of new business models and technology in a timely manner	45%	30%	18%	7%	100

APPENDIX C

ADDITIONAL REPORTING

The following measures are identified in the 2021–2025 SOI, published in June 2021. They are included here to act as a baseline.

Low-emissions energy

IMPACT	MEASURE	DESIRED TREND	2020/21 RESULT
Our electricity market settings enable an efficient transition to reliable low-emissions energy in New Zealand	Assessment of the ability of market settings to facilitate an efficient transition to low-emissions energy	Increasing	Yet to be measured. Baseline results of this measure will be reported in the 2021/22 Annual Report.

Consumer centricity

IMPACT	MEASURE	DESIRED TREND	2020/21 RESULT
Our decisions improve the way the sector meets consumers' needs	Market participant perceptions in the electricity system's ability to meet consumers' ongoing needs	Increasing	Overall, **44%** of participants agreed with the range of statements on the electricity system's ability to meet consumers' ongoing needs.
	The customer transfer process works effectively in the event of retailer default	Improving	The trader default system has been used with traders going into default and has worked effectively on all occasions.
Consumers are engaged with through our decision-making processes	Increased consumer awareness of the impact of the Authority's role and the benefit our work has on them	Increasing	Yet to be measured. Baseline results of this measure will be reported in the 2021/22 Annual Report.

Trust and Confidence

IMPACT	MEASURE	DESIRED TREND	2020/21 RESULT
We are active regulators who enhance operational efficiency and reliability	Market services are resilient to adverse events (as measured on a case-by-case basis)	Improving	**Achieved.** Market services are resilient to adverse events. In 2020/21 this was indicated by the absence of adverse events requiring review and the continued provision of services during the business continuity plan activations during the COVID-19 alert level restrictions.

Thriving competition

IMPACT	MEASURE	DESIRED TREND	2020/21 RESULT
Market settings enable competition between distributed energy resources (DERs) and established technology solutions	Improved participation in a range of electricity markets, for example, demand-side participation in a range of markets	Improving	**Partially achieved.** IPAG reviewed Transpower's demand response programme and made recommendations for open networks. IPAG's recommendations have been included in a discussion paper that we intend to consult on in August/September 2021. The Authority ran the second Open Networks workshop on 5 August 2020. The focus of the workshops is updates and discussions on standards development in the industry, including presentations on standards and presentations on DER pilots, trials and investigations.

Innovation flourishing

IMPACT	MEASURE	DESIRED TREND	2020/21 RESULT
The regulatory system accommodates new business models	Improved participant perceptions of the current market settings' ability to encourage innovation	Increasing	Overall, **23%** of participants agreed with the range of statements on the current market settings' ability to encourage innovation.
	Increased number of participants providing new services to consumers	Increasing	Yet to be measured. Baseline results of this measure will be reported in the 2021/22 Annual Report.

CORPORATE GOVERNANCE

The Electricity Authority Board

The Board is the governing body of the Authority and is responsible for promoting a competitive, reliable, and efficient electricity industry for the long term-benefit of consumers.

The Board ensures compliance with the law and is the ultimate point of accountability for all aspects of the Authority's performance. The Board also ensures compliance with the Authority's internal policies and governance documents.

In 2020/21, the Board held 10 regular meetings and two strategy days. Throughout the year there were also six additional meetings held in response to various matters, including transmission pricing methodology, trader defaults, and the 2019 undesirable trading situation.

Authority Members

The Authority is made up of between five and seven members appointed by the Governor-General. Members are recommended for appointment on the basis of ensuring a spread of experience and capability relating to the electricity industry, consumer issues, and business generally. Although appointed in response to nominations, in their official capacity, Board members do not represent the interests of any particular group and act independently. Members hold office for a term of up to five years and may be reappointed.

Authority members are Dr Nicola (Nicki) Crauford (Chair), appointed for a term of one year, expiring 1 November 2021; Allan Dawson and Sandra Gamble, appointed for terms of five years, expiring 18 April 2022; and Mark Sandelin and Lana Stockman, appointed for terms of five years, expiring 6 June 2022.

Dr Brent Layton retired after 10 years as Chair of the Authority, effective from 31 October 2020. Susan Paterson stepped down from her position on the Authority Board, effective from 11 June 2021.Both Brent and Susan had served on the Authority's Board since its inception in 2010. The Authority thanks them for their years of contribution and service and wishes them all the best for the future.

The Board has three committees: the Audit and Finance Committee, the Compliance Committee and the System Operations Committee.

Board Committees

The Audit and Finance Committee advises on the quality and integrity of the Authority's financial reporting, including managing the relationship with the external auditor. It also considers whether appropriate governance, policies and operating processes are in place to identify and manage risk and oversees and assesses the internal audit process. The Audit and Finance Committee met three times in 2020/21. Members are Mark Sandelin (Chair), Lana Stockman and Nicki Crauford.

The Compliance Committee makes decisions on alleged breaches of the Act, various regulations and the Code. It determines appropriate enforcement responses,whether settlements should be approved, or further investigation undertaken and makes recommendations to the Board regarding the laying of formal complaints with the Rulings Panel and instigating prosecutions. It also makes decisions on applications for exemptions from the Code. The Compliance Committee met six times in 2020/21. Members are Allan Dawson (Chair), Sandra Gamble and Mark Sandelin.

The System Operations Committee oversees the performance monitoring of the system operator under the Code and System Operator Service Provider Agreement (SOSPA). It maintains an open channel of communication with the system operator and acts as a sounding board for Authority staff who are renegotiating or considering significant variations to the SOSPA. The System Operations Committee met four time in 2020/21. Members are Sandra Gamble (Chair), Nicki Crauford and Allan Dawson.

Interests

The Board has an established conflicts of interest process to identify and manage any potential or actual conflicts. Members are required to disclose any interests under the Crown Entities Act 2004, as well as any conflicts caused by their background or other interests. Members recuse themselves from any discussions in which their duty as a member could be compromised.

All interests are recorded and reviewed regularly.

Permissions to act despite being interested in a matter

In 2020/21, two members continued to hold permission from the former Chair (Dr Brent Layton) to act despite being interested in a matter.[25] In both cases, the permission was granted as an additional backstop to section 62(3)(c) of the Crown Entities Act 2004, where a person is considered not interested in a matter because their interest is insignificant enough that it cannot reasonably be expected to influence them in carrying out their duties for the Authority.

INTEREST	ACTION RECORDED AS AT 1 JULY 2020	CHANGES MADE TO ACTIONS IN 2020/21
The member was until 31 December 2019 a partner and was previously a member of the Board, of Minter Ellison Rudd Watts (MERW), a law firm that regularly acts for various industry participants. A major client of MERW is Trustpower.	On 30 June 2020 the member will have ceased being a partner of Minter Ellison Rudd Watts (MERW) for six months. In the opinion of the Chair, given this period of separation, it cannot reasonably be regarded that the member's previous partnership of MERW is likely to influence him in carrying out his responsibilities under the Crown Entities Act 2004 (the Act) or another Act in relation to the Transmission Pricing Methodology (TPM) review, Avoided Cost of Transmission (ACOT) decisions, wind generation offers; and compliance activity involving a client of MERW. Therefore, the Chair (Dr Brent Layton) considers that, from 1 July 2020, the member will no longer be interested in any decision making involving these matters under s 62(3)(c) of the Act. The Chair also considers that, if he is incorrect that the member will be not interested in any decision making in these areas, he has decided to permit the member to act even if interested because he is satisfied it will be in the public interest to do so under s 68 of the Act.	The interest was removed from the Interest under the Crown Entities Act Register in April 2021, due to the period of separation. The former interest continues to be noted as part of the member's background and expertise.
The member is an independent director of Sky Network Television Ltd, which has arrangements with various electricity retailers whereby they may include a Sky subscription as part of a bundle of offerings to their customers.	The previous Chair (Dr Brent Layton) regarded the interest to be so insignificant that it could not reasonably be regarded as likely to influence the member in carrying out her responsibilities as a member in any decision-making involving electricity retailers. Therefore, the Chair considered the member was not interested in any decision making involving electricity retailers under s 62(3)(c) of the Act. The Chair added that, if he was incorrect that the member was not interested in any decision-making involving electricity retailers, he permitted the member to act despite being interested because he was satisfied it was in the public interest to do so under s 68 of the Act. The Chair did not believe there would be a net public benefit from excluding the member from the Board's decision-making involving electricity retailers.	The member noted the completion of their term with Sky Network Television Ltd at the November 2020 Board meeting. The member resigned from the Electricity Authority effective June 2021.

Technical and advisory groups

Rulings Panel

The Act continues the Rulings Panel (the industry dispute resolution and disciplinary body established under the Electricity Governance Regulations 2003) and sets out its membership, functions and funding arrangements.

Members are appointed by the Governor-General in accordance with a recommendation from the Minister of Energy and Resources after consultation with the Minister of Justice and the Electricity Authority.

Current members are Mel Orange (Chair), Geraldine Baumann (Deputy Chair), Denis O'Rourke and Lee Wilson.

Security and Reliability Council

The Act sets requirements to establish the Security and Reliability Council and other advisory groups. The Act also requires the Authority to publish a Charter for Advisory Groups. The charter was first published in February 2011 and most recently updated in January 2017.

The Security and Reliability Council provides independent advice to the Authority on the performance of the electricity system and the system operator and reliability of supply issues.

The independent chair is Hon. Heather Roy. The members are Barbara Elliston, Ben Gerritsen, Gretta Stephens, Guy Waipara, Mike Underhill, Nanette Moreau, Nathan Strong, Nigel Clark and Phil Gibson.

25 As per section 68(1) of the Crown Entities Act 2004.

Advisory groups

The IPAG and the MDAG are tasked with providing advice and recommendations to the Authority on the development of the Code and market facilitation measures.[26]

The IPAG focuses on issues specifically related to new technologies and business models and consumer participation. Members of the IPAG are John Hancock (Chair), Glenn Coates, Allan Miller, Terry Paddy, Tim Rudkin, Roxanne Salton, Corrie Stobie and Scott Willis.[27]

The MDAG focuses on further evolving the 'machinery' of the electricity market. MDAG successfully delivered advice on reforming the trading conduct rules to the Authority this year. The Authority accepted the advice and has now implemented the recommendations. Members of the MDAG as at 30 June 2021 are Tony Baldwin (Chair), Paul Baker, Stu Innes, Andrew Kerr, Rebecca Osborne, Ann Whitfield, Matthew Cleland, Tony Oosten, Fiona Wiseman and Al Yates.[28]

Additional advisory and technical groups

The Authority has established a number of other advisory and technical groups.

More information about the Security and Reliability Council, advisory groups and technical groups is available on the Authority website at www.ea.govt.nz/development/advisory-technical-groups/.

The Authority thanks past and current members of the Rulings Panel, SRC and advisory groups for their valuable input over the years.

26 Annual reports for the IPAG and MDAG are available on the Authority website:
IPAG: https://www.ea.govt.nz/development/advisory-technical-groups/ipag/annual-reports/
MDAG: https://www.ea.govt.nz/development/advisory-technical-groups/mdag/annual-reports/

27 The terms of Glenn Coates, Terry Paddy and Roxanne Salton were extended to 30 September 2021 to contribute to finalising their review of the Transpower Demand Response Programme. Luke Blincoe resigned from his position in May 2021.

28 The term for Rebecca Osborne was extended to 30 September 2023. The terms for James Flannery and James Flexman ended on 30 September 2020.

GLOSSARY AND ABBREVIATIONS

A detailed glossary is available at www.ea.govt.nz/glossary

ACT	Electricity Industry Act 2010.
ANCILLARY SERVICES	The system operator contracts individual participants to provide five services essential to maintaining the common quality of electricity supply. These ancillary services are black start, over-frequency reserve, frequency keeping reserve, instantaneous reserve and voltage support. Improving the ability and willingness of participants to compete in these markets will improve reliability and efficiency.
ASX	Australian Securities Exchange.
AUTHORITY	Electricity Authority.
CEA	Crown Entities Act 2004.
CODE	Electricity Industry Participation Code 2010.
CONSTRAINED-ON COMPENSATION	Constrained-on compensation is an amount paid to generators, if they are required by the system operator to generate during a trading period when the final price is less than the generator's offer price. The payment is calculated by the clearing manager and is payable by purchasers and the system operator.
CONSUMER	Any person who is supplied with electricity other than for resupply.
CRX/CR4	Concentration ratio (CR) of the top X number of generation/retailer companies (gentailers). The CR measures the sum of the market shares for the largest retailers – a higher number indicates a more concentrated market. For example, CR4 is the sum of the market shares for the top four parent retail companies.
DEMAND-SIDE FLEXIBILITY	The ability to modify electricity usage in a way that reduces consumption in a specific time period or shifts consumption from one time period to another.
DER	Distributed energy resources (DERs) are controllable energy resources located in the distribution network. Examples include small-scale generation, batteries and electric vehicles.
DR	Disaster recovery.
EMERGENCY EVENT	An emergency event is one where there is a persistent shortage situation (weeks or months) and would include rolling outages or supply shortage declarations (both in Part 9 of the Code).
EMI	Electricity Market Information website – See www.emi.ea.govt.nz
EMS	Energy Market Services is a commercial business group within Transpower NZ Ltd.
ENERGY TRILEMMA	The energy trilemma is the balance between energy reliability, affordability and sustainability.
EPR	Electricity Pricing Review. The EPR was an independent review into New Zealand's electricity system.
ETI	Exchange traded instrument.
EXTENDED RESERVE	Extended reserve is the last resort mechanism to restore frequency when the normal reserve product mechanisms for managing falls in frequency are insufficient. To prevent a drop in frequency that could cause the catastrophic failure of the power system, the extended reserve system automatically disconnects large blocks of load using automatic under frequency load shedding (AUFLS) relays that are progressively triggered to arrest the fall in frequency.
FREQUENCY KEEPING/ MANAGEMENT	The frequency of the New Zealand grid is normally maintained at 50 Hertz, which is the number of cycles per second. Frequency keeping refers to the process used to keep the frequency of the grid within its normal band. Frequency keeping power stations are used to increase or decrease generation within a set band to ensure that supply equals demand on a second-by-second basis. The system operator purchases frequency management services to maintain frequency within the prescribed tolerances.
FTR	Financial transmission right.

GENTAILER	An organisation that is both an electricity generator and an electricity retailer. A generator is an organisation that owns or operates generating units that inject electricity into a network. A retailer is a company that sells electricity to customers
HEDGE MARKET	A market through which hedge contracts are bought and sold. A hedge contract is a financial risk management product or contract for sale and purchase of electricity that shifts the price risks associated with the spot price of electricity. For example, a common hedge contract is a contract for differences (CFD). A CFD sets a price at which a buyer will purchase a specific quantity of electricity at a specified node for a set period. The buyer of the CFD pays this price regardless of whether the spot market price is higher or lower than the set price.
HHI	Herfindahl-Hirschman Index (HHI). HHI is a measure of market concentration, and the relationship with competition occurs because less concentrated markets are likely to be more competitive. It is calculated as the sum of the squares of the market share of all participants.
HVDC	High Voltage Direct Current. The HVDC link is the high voltage transmission cable that transports electricity in both directions between the North and South Islands.
INSTANTANEOUS RESERVES	Generation capacity and interruptible load that is made available to be used in the event of a sudden failure of a generation or transmission facility to maintain system frequency at 50 hertz. Fast instantaneous reserve is available within six seconds and must be able to operate for one minute. Sustained instantaneous reserve is available within 60 seconds and must be available for 15 minutes.
INTERNAL TRANSFER PRICING	The pricing of electricity for the retail arm of a gentailer from the generator arm of the same organisation.
IPAG	Innovation and Participation Advisory Group.
KAITIAKI	A te reo Māori word meaning trustee, guardian or steward. As the kaitiaki of electricity in New Zealand, we guide the nation's electricity system on behalf of all New Zealanders – promoting positive outcomes today and ensuring continued enhancement and reliability for future generations.
LA NIÑA	La Niña is an oceanic and atmospheric phenomenon. A La Niña year tends to bring reduced rainfall to the lower and western South Island, which can impact the infill levels of the South Island's hydro lakes.
MARKET MAKING/MARKET MAKERS	A service where market-makers are required to offer cash-settled contracts for differences on the New Zealand electricity derivatives futures market. Market-making services are currently provided by Contact, Genesis, Mercury and Meridian. To ensure performance, a mandatory backstop is enforced on market makers involving certain criteria such as volume, spread, refresh period and exemption days. If market-maker performance is not to expectations, market makers will face mandatory obligations. The performance of market makers is closely monitored to ensure they meet their agreed obligations with the Authority. Market-maker performance is available at www.emi.ea.govt.nz.
MDAG	Market Development Advisory Group.
MOSPS	Market Operation Service Providers.
MWH	Megawatt hour – equal to 1,000 kilowatt hours. Megawatt hours are the metering standard unit for the wholesale market
NET PIVOTAL	A net pivotal generator can profitably and unilaterally raise prices, i.e. a generator is net pivotal when their generation is greater than their own retail and hedge sales in the relevant area. When a supplier is net pivotal, they have incentives to raise prices because: ▪ their hedge position, including retail, provides no financial constraint ▪ they lack competitive pressure on prices (i.e. they have market power).
NON-NETWORK SERVICES	The use of controllable flexibility resources (e.g. batteries, hot water load, EV chargers, or other demand response) to manage congestion on a network, typically by third parties under contract with (or otherwise incentivised by) the network owner. The use of these resources is intended to de-risk, defer, or avoid completely the need for additional investment in traditional network infrastructure (e.g. poles, wires, and transformers).
NZX	The New Zealand stock exchange.
OTC	Over-the-counter hedges. These are hedges traded off an organised exchange.

OUTCOME, IMPACT AND OUTPUT	Accountability terms used in the State Sector that link the work we do with the results we are contributing to. • Outcome: A state or condition of society, the economy or the environment and includes a change in that state or condition. For us, this is expressed through the Competition, Reliability and Efficiency limbs of our statutory objective. Outcomes are assessed over the long-term. • Impact: The contribution made to an outcome by a specified set of outputs or actions or both. We use our strategic priorities and specific changes we seek through our projects and business-as-usual functions to assess the impact we are making. These changes are assessed over the medium to long term. • Output: The goods or services that we supply. We refer to these as our functions in this report. These are measured and reported on annually.
PARTICIPANT	A person, or a person belonging to a class of persons, identified in section 7 of the Act as being a participant in the electricity industry. These include generators, Transpower, distributors, retailers, other lines owners, consumers directly connected to the national grid, buyers of electricity from the clearing manager and service providers.
POWERSWITCH	Powerswitch is a free and independent service that helps residential consumers work out which power company and pricing plan is the cheapest for them. It is run by Consumer NZ and receives funding from the Electricity Authority. See www.powerswitch.org.nz/
RELIABILITY EVENT	A reliability event is one where something has gone bang. Some power system asset has broken (with some risk to system security), and there may be lessons to be learned from the experience.
SANDBOX	A sandbox is a testing environment, similar to User Acceptance Testing (UAT) environments.
SCARCITY EVENT	A scarcity event is one where the power system didn't (or nearly didn't) have enough generation and/or transmission assets available to meet demand for some short period (hours).
SERVICE PROVIDERS	We contract third parties to manage the electricity system (system operator) and market services, as described in Part 3 of the Code.
SOI	Statement of Intent. Prepared in accordance with the CEA.
SPE	Statement of Performance Expectations. Prepared in accordance with the CEA.
SPOT MARKET	The buying and selling of wholesale electricity is done via a pool for each half hour for each grid point of connection, where electricity generators offer electricity to the market and retailers bid to buy electricity. This market is called the spot or physical wholesale market.
SRC	Security and Reliability Council.
TPM	Transmission Pricing Methodology. The TPM ensures that Transpower can recover the full economic costs of its services. An updated TPM is being developed, and the Authority expects that this will be in place by April 2023. See www.ea.govt.nz/operations/transmission/transmission-pricing/
TRADING CONDUCT RULES	A set of rules under the Code. Trading conduct rules are designed to ensure appropriate behaviour in the wholesale electricity market. At times, New Zealand's system relies heavily on one or a small number of suppliers to meet demand. The trading conduct rules intend to prevent suppliers taking advantage of such situations. The rules set out the expected behaviour while still allowing prices to signal genuine scarcity of supply.
TRANSPOWER	The State-owned enterprise that owns the high voltage transmission network (the national grid) and acts as system operator.
UTILITIES DISPUTES	Utilities Disputes Ltd is a separate organisation from the Electricity Authority. It provides consumers with a free and independent dispute resolution service for complaints about their electricity lines or retail company, provided that company is a member. See www.utilitiesdisputes.co.nz
UTS	Undesirable trading situation. A UTS is a situation that threatens or may threaten confidence in or the integrity of the wholesale market or settlement that cannot otherwise be resolved satisfactorily under the Code.
vSPD	Vectorised Scheduling, Pricing and Dispatch. A mathematical replica of Scheduling, Pricing and Dispatch mode used by Transpower to run the wholesale market.

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