

# Electricity Authority Strategic Baseline Review 2022/23

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Final report

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29 August 2023





## Contents

Glossary	iv
Acknowledgements .....	v
Executive summary .....	vi
Recommendations .....	xiv
1. Introduction .....	1
1.1 Project context and purpose .....	1
1.2 New Zealand’s energy sector performs reasonably well on a global scale .....	1
1.3 Project approach .....	2
1.4 Report outline .....	3
2. The Authority’s role .....	4
2.1 Core objectives and functions of the Authority .....	4
2.2 Historical context .....	5
2.3 Organisational structure .....	6
2.4 Recent changes .....	8
3. Assessment of performance .....	11
3.1 Performance against statutory objectives .....	11
3.2 Organisational management .....	15
3.3 Section recommendations .....	46
4. Medium-term dynamics relevant to the Electricity Authority .....	49
4.1 Key medium-term sector dynamics .....	49
4.2 Implications of these dynamics .....	50
4.3 Implications for electricity regulation and the Authority .....	53
4.4 Implications for the Electricity Authority .....	61
4.5 Section recommendations .....	62
5. Funding the Authority’s activities .....	64
5.1 Funding .....	64
5.2 Current and historic funding .....	65
5.3 Future resourcing .....	77
6. Information to inform future funding .....	79
6.1 Indicators that improvements are being made .....	79
6.2 Future funding considerations .....	82
6.3 Section recommendations .....	84
References	87
<b>About Sapere</b> .....	<b>95</b>

## Appendices

Appendix A	Key inputs to our review .....	90
Appendix B	Future Security and Resilience Roadmap.....	92
Appendix C	Summary of the Authority's Levy Increase Proposal Components.....	93

## Tables

Table 1: Medium-term dynamics and potential implications for the Authority.....	vii
Table 2: The Authority's positioning, performance, and cost pressures.....	viii
Table 3: Areas for improvement by tier of importance.....	ix
Table 4: Summary of potential cost efficiencies and cost pressures .....	xi
Table 5: The Authority's component of funding (excl. Real Time Pricing and market making) assuming inflation in service provider contracts.....	xii
Table 6: The Authority's performance against its statutory objectives in 2021/22.....	11
Table 7: Summary of the Authority's appropriations for 2021/22.....	64
Table 8: The Authority's 2021/22 functions' expenses mapped to operating expense categories (\$m)	72
Table 9: Summary of domestic benchmarking for the 2021/22 financial year .....	75
Table 10: Summary of international benchmarking for the 2021/22 financial year .....	76
Table 11: Summary of the pre-Budget 2023 status quo baseline.....	77
Table 12: The Authority's baseline with the proposed appropriation increase .....	78
Table 13: Potential indicators of progress for identified areas to improve.....	80
Table 14: Mapping of statutory function to core area of work in the Authority.....	83
Table 15: Attribution of the proposed increased appropriation .....	94
Table 16: Attribution of the increased appropriation under the 60% scenario .....	94

## Figures

Figure 1: Energy Trilemma Index: New Zealand.....	2
Figure 2: High-level schematic of the Authority's organisational structure.....	7
Figure 3: Summary of the energy transition roadmap .....	9
Figure 4: Summary results from a 2021/22 survey of industry perceptions (commissioned by the Authority).....	13
Figure 5: How the Authority's strategic ambitions and main statutory objective work together. ....	17
Figure 6: Comparison of Authority annual staff turnover (%) with MBIE, Commerce Commission, EECA and Transpower .....	41
Figure 7: Opportunities and challenges identified in the FSR Phase 1 report .....	52
Figure 8: Opportunities and challenges and their interdependencies as identified in the FSR Roadmap .....	53
Figure 9: MDAG's five key areas for future action.....	54
Figure 10: MDAG's proposed measures and process for implementation .....	55
Figure 11: Summary of the Future Security and Resilience Roadmap .....	58
Figure 12: IPAG's proposed flexibility arrangements.....	59
Figure 13: IPAG's recommended staging for reducing barriers to consumer access to multiple electricity services.....	59

Figure 14: CAANZ's Essential characteristics of a future regulator.....	60
Figure 15: The Authority's historical operations expenditure relative to budgeted operations expenditure.....	66
Figure 16: Project and non-project (business-as-usual) expenditure from 2019/20 to 2021/22 .....	67
Figure 17: Operations expenditure from 2017/18 to 2021/22 by cost category .....	68
Figure 18: Policy expenditure from 2017/18 to 2021/22.....	70
Figure 19: Compliance, monitoring, and enforcement's expenditure from 2017/18 to 2021/22 .....	70
Figure 20: Support expenditure from 2017/18 to 2021/22 .....	71
Figure 21: The Authority's annual average FTE counts from 2017/18 to 2021/22 .....	74
Figure 22: Future Security and Resilience Roadmap .....	92

# Glossary

<b>Abbreviation</b>	<b>Stands for</b>
CAC	Consumer Advocacy Council
Code	Electricity Participation Code 2010
ENA	Electricity Network Association
ERP	Emissions Reduction Plan
FSR	Future security and resilience
IPAG	Innovation and Participation Advisory Group
MBIE	Ministry of Business, Innovation and Employment
MDAG	Market Development Advisory Group
MOSP	Market operations service providers
OIA	Official Information Act
SLT	Senior leadership team
SO	System operator
SOSPA	System Operator Service Provider Agreement
SRC	Security and Reliability Council
The Act	The Electricity Industry Act 2010
The Authority	The Electricity Authority
TPM	Transmission Pricing Methodology
UTS	Undesirable Trading Situations

## Acknowledgements

We would like to acknowledge the input from the Ministry of Business, Innovation and Employment and the Electricity Authority, as well as the industry stakeholders who provided the time and thoughts during interviews. A full list of those we have engaged with is provided in Appendix A. These discussions have helped inform our thinking which has fed into this report. However, the views expressed in this report are those of the authors only and should not be taken as representing the views of any of the individuals met with during the process, nor any of the organisations they are associated with.

## Executive summary

The Electricity Authority (the Authority) has sought an uplift to its funding in its recent levy consultation document and consulted on the first phase of increase for 2022/23 and 2023/24, with the second phase for 2024/25 and outyears to be informed by this review. Several submissions commented that while the overarching pressures could be understood, it was unclear what the additional funding would be spent on. The link between short-term “projects” or “reviews” and longer-term or ongoing work was also not clear.

We have been asked to undertake a strategic baseline review of the Authority in the context of the Authority’s most recent request for levy funding increases. We have been specifically asked to answer:

- How well positioned is the Authority to deliver on its role, strategy, and government priorities?
- How well is the Authority performing (efficiency of resource use, and value add/quality of outputs delivered)?
- What cost pressures does the Authority face over the next four years, and do they align with its strategy and priorities?
- What are the options to manage within different funding paths?

This report considers the first three questions looking at the Authority and its role, assessing its current performance as seen through the eyes of staff and stakeholders and considering medium-term dynamics in the electricity market. We also look at its current funding relative to the Authority’s proposed levy increase, funding received in Budget 2023, and identify key considerations for future funding paths, having not been able to answer the fourth question with the information available in the time frame.

## High-level findings

Our findings are that the Authority:

- **Context:** faces a quite different environment than when initially established, with significant medium-term dynamics that will have implications for the Authority (posing cost pressures as well as opportunities) and pose risks to reliability.
- **Performance:** is meeting its statutory objectives but there are areas for improvement (discussed below). Internationally, New Zealand’s energy sector performance compares well, rated eight of 91 countries overall by the World Energy Council. Most surveyed for the Authority annual reporting consider supply to be reliable and markets efficient, and most consumers score competition favourably. There have been some downward trends among these overall measures, with only a minority of market participants indicating they feel markets are competitive, and greater concerns around ongoing reliability.
- **Awareness:** shows early signs of being cognisant of key areas for improvement with some common themes raised from our work (both in terms of how it is positioned and how it is performing).
- **Operating model:** currently requires significant input from contractors, consultants and external advisory groups, which it is seeking to rebalance through developing its internal capability and capacity. Looking at the Authority’s core functions, the policy function appears



to be a significant driver within the organisation and one where there are more questions over its positioning and performance (potential variation in practices, uncertainty of roles and potential for overlap). The Authority’s monitoring function was more contained and particularly well regarded. The commercial function is newly created so it is too early to have insights on.

- **Cost drivers:** applies the majority of its funding to service providers and system operator expenses (i.e. outsourced services), which drove most of the cost increases between 2011/12 and 2016/17. Outsourcing expenses are linked to inflation, though the Authority’s operating costs have accounted for a greater portion of more recent cost increases, driven by increases in employee expenses and external advice.
- **Funding pressures:** would be squeezed in terms of its funding without some level of increase, given inflationary pressures in its contracted services. Medium-term dynamics may require more from the Authority with pressures as well as opportunities for potential savings over time (as shown in Table 1).
- **Funding options:** needs to tell a richer story around its funding needs, supported by robust analysis with further work suggested to estimate funding needs over time.

## Medium-term dynamics

The table below summarises the key underlying dynamics of importance for the Authority over the medium-term and the potential implications for the sector and the Authority itself.

Table 1: Medium-term dynamics and potential implications for the Authority

<b>Underlying dynamics</b>	<ul style="list-style-type: none"> <li>• The transition to a low-emissions economy and therefore decarbonisation of our energy systems – market design and security arrangements.</li> <li>• Improvements in, and the role of, new technologies.</li> <li>• Increasing focus on small domestic consumers.</li> </ul>
<b>Sector implications</b>	<ul style="list-style-type: none"> <li>• Increased proportion of renewable electricity, with increased intermittent generation and retirement of thermal generation with risks for reliability.</li> <li>• More diverse and distributed generation, increasing the number of participants and resulting in different types of arrangements.</li> <li>• New business models and contracting arrangements, particularly in relation to risk management.</li> <li>• Increased information and data flows and importance of cyber security.</li> <li>• Increased complexity of operational coordination and risk to security of supply.</li> </ul>
<b>Potential implications for the Authority</b>	<ul style="list-style-type: none"> <li>• Additional workload pressures to support these shifts and delivery of statutory objectives.</li> <li>• Requirements to modernise the Code.</li> <li>• Opportunities to support rapid, short cycle innovation.</li> <li>• Ensuring systems support further digitisation and information flows.</li> <li>• A need to review standards the Authority has control over (such as Part 8 of the Code, currently being reviewed) to ensure barriers to entry are minimised and standards are relevant.</li> </ul>

- A need to engage with a wider range of sector participants as well as new opportunities to do this efficiently.

## Summary of the Authority’s positioning, performance and cost pressures

We summarise our assessment of the Authority’s positioning, performance and cost pressures in the table below and then discuss the key areas for improvement we have identified. We understand there is awareness, focus and some early signs that progress is being made on some of these areas, and this report is intended to further support improvements.

Table 2: The Authority’s positioning, performance, and cost pressures

<p><b>Positioned to deliver on its role, strategy and Government priorities?</b></p>	<ul style="list-style-type: none"> <li>• The Authority has established teams that span its set of statutory functions, including its commercial team established in 2021. However, turnover in prior years means gaps on key positions that are currently being recruited, and gaps in technical expertise, are seen as critical by stakeholders. The Authority is currently recruiting to fill these vacancies and address these expertise gaps.</li> <li>• The Authority has an overarching strategy, though how this is applied in its prioritisation of work is unclear externally.</li> <li>• There are a number of proposed Code changes that have not yet been considered with some viewing the Code as out of date, overly complex and difficult to understand or change, or even archaic.</li> <li>• Consultation processes are generally understood though under review with potential improvements possible in engagement, timeliness and use of advisory groups. On the other hand, stakeholders have also said that things happen much too slowly. Some stated they look for solutions that would not involve the Code where possible given the uncertainty, even when Code changes would seem a more obvious or applicable route or the avenue to address the source of the problem.</li> <li>• There are areas for improvement in terms of relationships, with early signs of potential improvement. There are signs that the relationship with the system operator has improved from an earlier time, but the relationship and interagency relationships are well off the maturity needed for the substantial changes ahead.</li> </ul>
<p><b>Performance – efficiency and effectiveness?</b></p>	<ul style="list-style-type: none"> <li>• Recently delivered some key projects, including Transmission Pricing Methodology and Real Time Pricing.</li> <li>• Considered variability and room for improvement on engagement, though early signs of potential improvement.</li> <li>• Current backlog of proposed Code changes.</li> <li>• Catching up on backlog of compliance and enforcement cases (at the short-term expense of education efforts).</li> <li>• Financial and information management systems are in place, though information management practices could be improved.</li> </ul>
<p><b>Cost pressures?</b></p>	<ul style="list-style-type: none"> <li>• Changing nature of industry: more reactive pressures, more participants, and more diverse and distributed participants.</li> </ul>

	<ul style="list-style-type: none"> <li>• Role in transition to low-emissions economy (which includes considering a number of complex and novel issues).</li> <li>• Fitness of security and reliability arrangements through the transition.</li> <li>• Additional strategic obligation in relation to small domestic consumers.</li> <li>• Pressure and competition for resources in well-resourced industry.</li> <li>• Heightened risk of legal challenge, particularly given increased penalties.<sup>1</sup></li> <li>• Increased digitisation, demand for information and role of “prosumers”.</li> <li>• Increasing demand for similar skills through the transition to a low emissions economy.</li> <li>• Increasing expectations of Crown entities, for example expectations of the Public Service Commission and Office of the Auditor General around demonstrating what is being delivered/achieved and how and increasing maturity in relation to te ao Māori.</li> </ul>
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## Areas to improve

Our current state assessment has highlighted the following areas for potential improvement which we have separated into three tiers based on magnitude and ease of addressing:

- **Tier 1:** the most significant matters for the Authority, important for meeting statutory objectives
- **Tier 2:** significant matters for the Authority
- **Tier 3:** more discrete issues we suggest should be more easily addressed by the Authority.

The areas for improvement under each tier are set out below (associated indicators of progress to measure progress in addressing each in future are set out in the final section of this report).

Table 3: Areas for improvement by tier of importance

Tier	Areas to improve
1	<ul style="list-style-type: none"> <li>• There needs to be improved confidence in reliability by addressing winter peak concerns, progressing the Future Security and Resilience work programme, and optimising working arrangements with the Security and Reliability Council and system operator. The Authority notes this is all currently under action.</li> <li>• The relationships between the system operator, MBIE, the Commerce Commission and the Authority need to improve in maturity with collective responsibility for the electricity sector and agreed inter-agency roles, accountabilities and boundaries, including shared responsibility for efficiency and management of risks.</li> <li>• Raise the strategic outlook of the regulator to being long-term (10 years) with a three-year planning horizon.</li> <li>• Clarify the link between strategy and work programme, including prioritisation framework and when different levers or approaches will be used (e.g. market facilitation, education, review of Code, enforcement), clarify boundaries of the Authority’s role and on what and how it will work</li> </ul>

<sup>1</sup> Introduced alongside other changes in the Electricity Industry Amendment Act 2022.

	with others, and develop medium-term regulatory strategy. We note funding needs should be linked to the Authority's medium-term regulatory strategy, priorities and ways of working.
<b>2</b>	<ul style="list-style-type: none"> <li>• Address staff turnover and improve staff capability – appoint key positions, fill key skill gaps, and improve culture (allocation of roles and responsibilities, including reviewing delegations, risk tolerance, and operating models; and progress review of consultation and engagement processes with a view to improving perceptions of authenticity and timeliness) and ensure there is sufficient technical capability whether employed, contracted or shared with the industry.</li> <li>• Address backlog of Code changes (short-term) and, in slower time, review and modernise the Code to make it easier to engage with and enable greater flexibility to update standards. To achieve medium-term objectives, there might need to be a Code override.</li> <li>• Improve understanding of the links between projects, their resourcing demands and organisation planning and strategy, from team involvement in undertaking projects to the likely implications of addressing recommendations resulting from initial reviews.</li> <li>• Work on key relationships, assigning senior points of contact for key stakeholders, and considering resuming regulatory manager meetings.</li> <li>• Review where processes could be more agile and innovative and identify continuous improvement programmes. For instance, leveraging opportunities to improve data exchange processes and considering whether there are opportunities to integrate market and network reconciliation.</li> </ul>
<b>3</b>	<ul style="list-style-type: none"> <li>• Improve culture of review and engagement. This should also extend to the application of risk management practices.</li> <li>• Improve knowledge management practices.</li> <li>• Provide a helpful IT environment.</li> </ul>

Having looked at areas for potential improvement and future cost pressures, we summarise the key forces for potential savings and cost pressures in the table below with the positive sign being cost drivers. We note the last three potential cost efficiencies may require initial investment or reprioritisation before delivering savings, and any efficiencies in engagement would need to be considered relative to potential pressures on the breadth of engagement. We are unable to say whether the completion of major projects releases capacity, or whether there is an equally large implementation tail.

Table 4: Summary of potential cost efficiencies and cost pressures

<p><b>Potential cost efficiencies:</b></p> <ul style="list-style-type: none"> <li>Focusing more on its core function as a regulator and minimising/focusing any spending on boundary issues with other regulators/agencies</li> <li>Possible efficiencies in engagement, operating processes and decision-making</li> <li>Reducing turnover and improving technical capabilities</li> <li>Leveraging technology and data analytics</li> </ul>	<p><b>Potential cost pressures:</b></p> <ul style="list-style-type: none"> <li>Increased demand for core skills</li> <li>Inflation</li> <li>Improving confidence in reliability</li> <li>Addressing the back-log of Code changes</li> <li>Modernising the Code</li> <li>Engaging with a broader and more diverse sector and reaching consumer perspectives</li> <li>Addressing emerging options from advisory groups and review works</li> <li>Engaging with regulatory agencies on the Energy Strategy and long-term issues</li> <li>Data needs and cyber security</li> <li>Heightened risk of legal challenge</li> <li>Increasing expectations of Crown entities</li> </ul>
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## Future funding considerations

The pressures on the Authority’s funding under the pre-Budget 2023 status quo relative to last year’s levy proposal are briefly set out below before identifying further considerations and information we suggest are needed to confidently estimate funding levels for any future funding scenarios.

### Funding may be squeezed without some increase in funding

Historically the Authority’s funding has been fairly flat with increases relating to service provider costs. We observe that the Authority’s internal operating costs have increased more recently and are almost on budget.

Assuming inflation is applied to service provider contracts, under the status quo the Authority’s component of funding would decrease. Under the full proposed levy increase, the Authority’s component would peak in 2024/25, and for the partial (60 per cent of the full proposed) levy increase, it would peak in 2023/24. The partial levy increase was the funding level agreed to date in Budget 2023. The Authority’s component of funding under the full and partial options (as well as the status

quo) if we apply the same level of inflation to service provider costs and treat the Authority component as the residual are shown below.<sup>2</sup>

Table 5: The Authority’s component of funding (excl. Real Time Pricing and market making) assuming inflation in service provider contracts

<b>Expenses (millions)</b>	<b>2022/23</b>	<b>2023/24</b>	<b>2024/25</b>	<b>2025/26</b>	<b>2026/27</b>
Status quo	\$24.96	\$23.49	\$21.43	\$20.32	\$19.19
Full proposed levy increase	\$25.46	\$31.30	\$32.78	\$31.67	\$30.53
Partial levy increase (as in B23)	\$25.46	\$29.85	\$27.79	\$26.68	\$25.55

Source: The Electricity Authority levy funded appropriations

### **Further information needed to inform future funding scenarios**

Drawing on the cost pressures and potential efficiencies above, we have shared with MBIE and the Authority some of the key choices and funding elements to consider. However, estimating the funding levels associated with different options would have required significant assumptions in the time available, and it was agreed with MBIE and the Authority that further work was needed by the Authority to inform future funding options.

We suggest the Authority undertake further work to support estimates of future funding levels and how these may evolve. This would enable detailed underlying assumptions associated with different funding scenarios to be incorporated into funding estimates based on understanding for each scenario:

- Which areas of activity or functions are being prioritised. That is where investments are being made, new work is being taken on, or work is being delayed, dropped, or delivered differently. This would ideally be informed by the Authority’s medium-term regulatory strategy.
- The resourcing for each business unit and broadly how those resources will be applied. This could be informed by outlining the production costing for key elements (that is how resourcing from across teams contributes to key outputs and activities).
- What each business unit will deliver relative to pre-levy consultation levels.
- How activities will be delivered differently and the short and longer-term cost and expected outcome implications of this. This includes what will be delivered jointly with other parties and what the funding implications are. An input-output or Investment Logic Mapping exercise could help link this with the medium-term regulatory strategy.
- What the key risks associated with this level of funding are, and associated priorities and ways of working.

We recognise that projecting work programmes and funding requirements, like any forecasting exercise, gets more difficult the further out one gets, but this needs to be considered to justify ongoing funding increases. Some of the work referenced in early years includes programmes where

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<sup>2</sup> These assumptions follow those outlined in the Authority’s levy funded appropriations consultation document from 2022 (Electricity Authority, 2022a).

there are known early stages of review, such as the wholesale market review, MDAG 100 per cent renewable market design options, Future Security and Resilience, and network pricing. While immediate costs associated with such reviews may be more easily understood, we suggest more could be done to explain where reviews themselves are likely to lead to subsequent initiatives that result in larger work programmes. For instance, MDAG's "Price discovery in a renewables-based electricity system: options paper" suggests over 40 proposed changes which, if implemented, would result in significant ongoing work.

# Recommendations

We recommend that the **Authority agrees** to:

1. The following areas for improvement, to
  - a) **develop plans** to address these, and
  - b) **report** on the Authority’s relevant work and progress (with potential indicators of progress to consider and prioritise presented by tier, with further detail in relevant sections of the report):

Areas to improve	Potential indicators of progress
<b>Tier 1: the most significant matters for the Authority, important for meeting statutory objectives</b>	
1(a)(T1i) There needs to be improved confidence in future reliability by addressing winter peak concerns, progressing the Future Security and Resilience work programme, and optimising working arrangements with the Security and Reliability Council and system operator. The Authority notes this is all currently under action.	<ul style="list-style-type: none"> <li>• 1(b)(T1i) Improve stakeholder perception of reliability in survey of electricity industry participants’ perceptions (and consumer perceptions in survey of residential electricity consumer perceptions) undertaken for the Authority’s annual report.</li> <li>• 1(b)(T1ii) Clear communications about the focus and workplan for the Future Security and Resilience work programme, with prioritised resourcing for this work (as is observed at present and was indicated in the levy consultation).</li> </ul>
1(a)(T1ii) The relationships between the system operator, MBIE, the Commerce Commission and the Authority need to improve in maturity, with collective responsibility for the electricity sector and agreed inter-agency roles, accountabilities and boundaries, including shared responsibility for efficiency and management of risks.	<ul style="list-style-type: none"> <li>• 1(b)(T1iii) Agree mapping of relative roles across agencies, where agencies will work together, and role of the Council of Energy Regulators (e.g. MOUs and TORs).</li> <li>• 1(b)(T1iv) Feedback on nature of relationship improving from key parties involved.</li> </ul>
1(a)(T1iii) Raise the strategic outlook of the regulator to being long-term (10 years) with a three-year planning horizon.	<ul style="list-style-type: none"> <li>• 1(b)(T1v) Medium-term regulatory strategy developed.</li> <li>• 1(b)(T1vi) Improved stakeholder perceptions of future focus in stakeholder perception surveys.</li> </ul>
1(a)(T1iv) Clarify the link between strategy and work programme, including prioritisation framework and when different levers or approaches will be used (e.g. market facilitation, education, review of Code, enforcement), clarify boundaries of the Authority’s role and on what and how it will work with others, and develop medium-term regulatory strategy.	<ul style="list-style-type: none"> <li>• 1(b)(T1vii) Medium-term regulatory strategy developed, with prioritisation framework and how this will be applied, levers available, intended ways of working with others.</li> <li>• 1(b)(T1viii) Clear forward work programme or plan for future consultations.</li> <li>• 1(b)(ix) Funding needs are clearly linked to the Authority’s medium term regulatory strategy, priorities and ways of working.</li> </ul>



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**Tier 2: significant matters for the Authority**


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<p>1(a)(T2i) Address staff turnover and improve staff capability – appoint key positions, fill key skill gaps, and improve culture (allocation of roles and responsibilities, including reviewing delegations, risk tolerance, and operating models; and progress review of consultation and engagement processes with a view to improving perceptions of authenticity and timeliness) and ensure there is sufficient technical capability whether employed, contracted or shared with the industry.</p>	<ul style="list-style-type: none"> <li>• 1(b)(T2i) Core positions are filled (i.e. reduce vacancies particularly at SLT).</li> <li>• 1(b)(T2ii) Reduced staff turnover.</li> <li>• 1(b)(T2iii) Clear decisions on consultation and engagement approach and improved stakeholder perception of sincerity and meaningfulness of engagement in stakeholder perception surveys.</li> <li>• 1(b)(T2iv) Risk framework developed linked to delegations.</li> <li>• 1(b)(T2v) Workforce strategy developed.</li> <li>• 1(b)(T2vi) Improved stakeholder perceptions about pace of change and appropriate level of caution in stakeholder surveys.</li> </ul>
<p>1(a)(T2ii) Address backlog of Code changes (short term) and, in slower time, review and modernise the Code to make it easier to engage with and enable greater flexibility to update standards. To achieve medium-term objectives, there might need to be a Code override.</p>	<ul style="list-style-type: none"> <li>• 1(b)(T2vii) Improve transparency of proposed Code changes and indication of decisions made or timeframe for others to be considered.</li> <li>• 1(b)(T2viii) Consider the merit of a holistic (possibly phased) review of the Code and standards within it (noting this and any resulting actions could take some time).</li> </ul>
<p>1(a)(T2iii) Improve understanding of the links between projects, their resourcing demands and organisation planning and strategy, from team involvement in undertaking projects to the likely implications of addressing recommendations resulting from initial reviews.</p>	<ul style="list-style-type: none"> <li>• 1(b)(T2ix) Map intended resourcing requirements on projects from inception to implementing any changes (noting uncertainties) and ensure: a) systems allow high-level visibility of internal staffing and relative draw of their time on projects, and b) there are decision points to test scope and timing as projects unfold.</li> </ul>
<p>1(a)(T2iv) Work on key relationships, assigning senior points of contact for key stakeholders, and considering resuming regulatory manager meetings.</p>	<ul style="list-style-type: none"> <li>• 1(b)(T2x) Identify relationship managers for key relationships. Ensure practices exist for these parties to engage with their counterparts.</li> </ul>
<p>1(a)(T2v) Review where processes could be more agile and innovative and identify continuous improvement programmes. For instance, leveraging opportunities to improve data exchange processes and considering whether there are opportunities to integrate market and network reconciliation.</p>	<ul style="list-style-type: none"> <li>• 1(b)(T2xi) Consideration given to a (possibly phased) review of existing processes, key systems and effectiveness of their use. This should include information requests and exchange practices.</li> </ul>

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**Tier 3: more discrete issues we suggest should be more easily addressed by the Authority**

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1(a)(T3i) Improve culture of review and engagement. This should also extend to the application of risk management practices.	<ul style="list-style-type: none"><li>• 1(b)(T3i) Improved or consistently high scoring of questions in the review category in the internal employee surveys “Have Your Voice” (and observed practices externally – e.g. post project reviews and incorporation of lessons learned in future projects).<sup>3</sup></li><li>• 1(b)(T3ii) Improved scores in stakeholder perception surveys.</li></ul>
1(a)(T3ii) Improve knowledge management practices.	<ul style="list-style-type: none"><li>• 1(b)(T3iii) Identify barriers to intended practices being modelled and agree targeted solutions (e.g. review, training, incentives and support).</li></ul>
1(a)(T3iii) Provide a helpful IT environment.	<ul style="list-style-type: none"><li>• 1(b)(T3iv) Review IT systems, including those used by service providers to identify opportunities for improvements.</li></ul>

2. As part of work on a medium-term regulatory strategy, **address the following medium-term pressures** and their potential implications for the sector and the Authority:

a) Underlying dynamics:

- i. The transition to a low-emissions economy and therefore decarbonisation of our energy systems – market design and security arrangements.
- ii. Improvements in, and the role of, new technologies.
- iii. Increasing focus on protecting the interests of domestic and small business consumers in relation to the supply of electricity.

b) Potential implications for the Authority:

- i. Additional workload pressures to support associated sectoral shifts and delivery of its statutory objectives.
- ii. Requirements to modernise the Code.
- iii. Opportunities to support rapid, short cycle innovation.
- iv. Ensuring systems support further digitisation and information flows.
- v. A need to review standards the Authority has control over (such as Part 8 of the Code, currently being reviewed) to ensure barriers to entry are minimised and standards are relevant.
- vi. A need to engage with a wider range of sector participants as well as new opportunities to do this efficiently.

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<sup>3</sup> The Authority advises that as of August 2023, it has engaged a project management specialist to improve project management practice.

3. **Undertake further work in order to develop funding scenarios** based on an understanding of:
  - a) Which areas of activity or functions are being prioritised. That is where investments are being made, new work is being taken on, or work is being delayed, dropped, or delivered differently. This would ideally be informed by the Authority's medium-term regulatory strategy.
  - b) The resourcing for each business unit and broadly how those resources will be applied. This could be informed by outlining the production costing for key elements (that is how resourcing from across teams contributes to key outputs and activities).
  - c) What each business unit will deliver relative to pre-levy consultation levels.
  - d) How activities will be delivered differently and the short and longer-term cost and expected outcome implications of this. This includes what will be delivered jointly with other parties and what the funding implications are. An input-output or Investment Logic Mapping exercise could help link this with the medium-term regulatory strategy.
  - e) What the key risks associated with this level of funding are, and associated priorities and ways of working.
  
4. **After a short period (such as 3-5 years),<sup>4</sup> review whether the governance of, and the Authority's commercial approach to managing, the system operator contract are delivering anticipated benefits.** This would be considered relative to whether, given the legislated nature of this arrangement, alternative models that encourage greater partnership or alliance and/or different forms of oversight should be considered if benefits have not been observed and are not expected.

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<sup>4</sup> Depending on the timing of the system operator contract negotiation and other relevant work.



# 1. Introduction

This section sets out the:

1. context and purpose of this project
2. approach we have taken to completing this project
3. outline for the remainder of the report.

## 1.1 Project context and purpose

In October 2022, the Electricity Authority (the Authority) issued a consultation document for its 2022/23 and 2023/24 levy-funded appropriations (Electricity Authority, 2022a). This set out two phases of proposed increases to baseline funding:

- Phase 1: for proposed increases of \$0.5 million for 2022/23 and up to \$7.8 million for 2023/24 and outyears, which was the subject of the consultation document.
- Phase 2: further increases in funding for 2024/25 and outyears, which at the time was proposed at an additional \$3.537 million for 2024/25 and outyears but for which an independent baseline review of the Authority's operations was to be undertaken prior to any consultation.

In December 2022, the Ministry of Business, Innovation and Employment (MBIE) engaged us to provide an independent strategic baseline review of the Authority. The Review is intended to provide assurance around the extent to which the Authority is adequately and appropriately resourced to respond to current and future challenges, and to support MBIE in its advice to Ministers on funding needs. The four main questions we have been asked to consider are:

1. How well positioned is the Authority to deliver on its role, strategy, and government priorities?
2. How well is the Authority performing (efficiency of resource use, and value add/quality of outputs delivered)?
3. What cost pressures does the Authority face over the next four years, and do they align with its strategy and priorities?
4. What are options to manage within different funding paths?

On 18 May 2023, the Government released Budget 2023. The Authority received approval for an uplift in its appropriation of \$0.5 million in 2022/23 and \$4.6 million (approximately 60 per cent of the amount requested) for 2023/24 and outyears.

## 1.2 New Zealand's energy sector performs reasonably well on a global scale

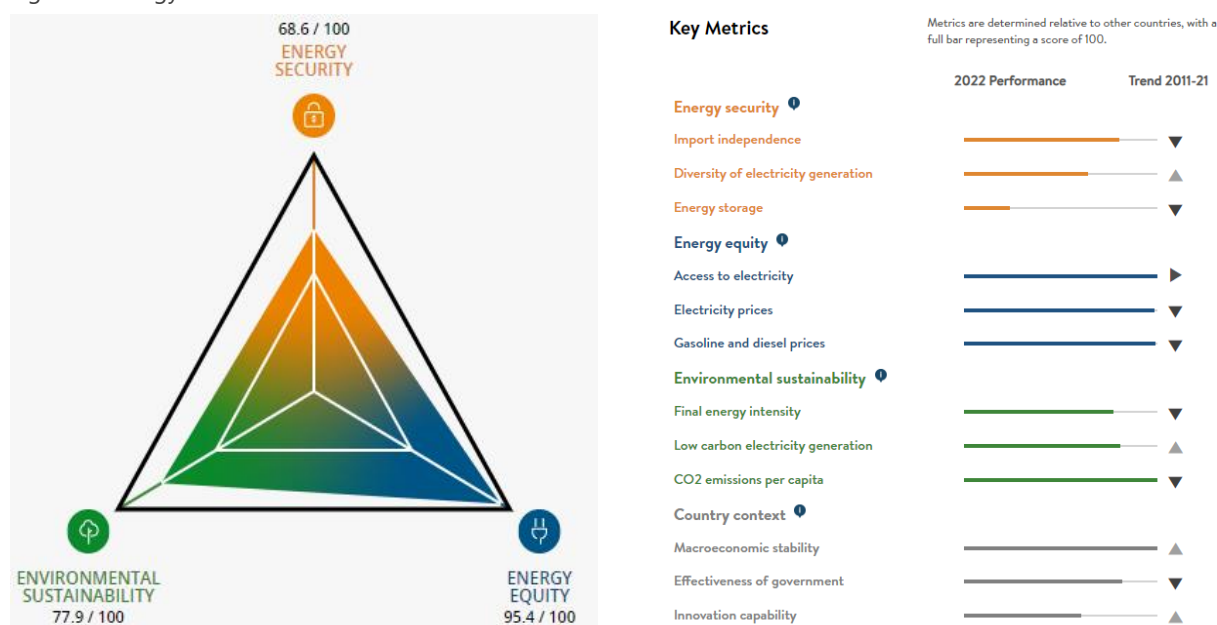
We are undertaking this review against a backdrop of what is considered, from an international perspective, to be a reasonably well-performing energy sector. To examine the performance of the New Zealand energy sector in a global context, we observe the World Energy Council's Energy Trilemma Index. The Energy Trilemma Index Tool ranks countries on their ability to provide sustainable

energy through three dimensions—energy security, energy equity (accessibility and affordability), and environmental sustainability (World Energy Council, 2022).

Figure 1 shows the Index and key metrics from the World Energy Council. The metrics stated are relative to the other countries assessed. In 2022, New Zealand scores eighth out of the 91 countries in the index, and it is the only Asian-Pacific country in the top 10. Examining the metrics individually, New Zealand scores highly across the energy equity metric and reasonably well over energy security and environmental sustainability. We note New Zealand has a low score for energy storage and innovation capability.

Trends since 2011 are also observed. Notable improvements include more diverse energy generation, low carbon generation, and in innovation capability. Similarly, there are notable regressing trends in energy storage, import dependence, energy prices, final energy intensity and per capita emissions, and government effectiveness.

Figure 1: Energy Trilemma Index: New Zealand



Source: The World Energy Council’s Trilemma Index 2022

### 1.3 Project approach

To help answer the questions above, the project involved integrated analysis supported by three workstreams: financial and activity analysis, organisational analysis, and future scenario analysis. The project involved a combination of document review, interviews with internal and external stakeholders, work on potential future scenarios, and two targeted workshops testing our thinking with an advisory panel (these components are detailed further in Appendix A). This report draws on each component to assess the Authority’s performance against good practice, given its role and statutory objectives, and identify future funding considerations for the Authority. Our core analysis within this report was undertaken prior to the end of June 2023, so data for 2022/23 was not available at the time and we only highlight material changes since then.

## 1.4 Report outline

The remainder of the report discusses:

- the Authority's role, including its core objectives and functions, organisational structure, historical context and recent changes (section 2)
- an assessment of the Authority's current performance (section 3)
- the medium-term dynamics relevant to the sector and their implications for the Authority (section 4)
- the Authority's current and future funding relative to the proposed levy increase (section 5)
- future funding considerations for the Authority (section 6).

## 2. The Authority's role

This section provides key context to the review and report. It discusses the Authority's role by looking at its core objectives and functions, organisational structure, funding, and recent changes.

### 2.1 Core objectives and functions of the Authority

The Authority is an independent Crown entity responsible for overseeing and regulating New Zealand's electricity market. It was established under the Electricity Industry Act 2010 (the Act). The Act provides a framework for the regulation of the electricity industry. It authorises the Authority to create regulations and to make and amend the Electricity Industry Participation Code 2010 (the Code). The regulations must be consistent with the Authority's statutory objectives, and can only be imposed on industry participants or the Authority.

#### 2.1.1 The Authority's statutory objectives

The Authority has one main objective and one additional objective. The Authority's main objective is to:

"promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers." (Parliamentary Counsel Office, 2023)

The additional statutory objective stated in the Act is to protect the interests of domestic consumers and small business consumers in relation to the supply of electricity to these consumers. This additional objective was introduced under the Electricity Industry Amendment Act 2022 (Parliamentary Counsel Office, 2023).

#### 2.1.2 The Authority's interpretation

The Authority interprets its main objective as requiring it to exercise its statutory objectives for the long-term benefit of electricity consumers (Electricity Authority, 2011b):

- facilitate increased competition in markets for electricity and electricity-related services, taking into account long-term opportunities and incentives for efficient entry, exit, investment, and innovation in those markets
- encourage industry participants to efficiently develop and operate the electricity system to manage security and reliability in ways that minimise total costs while being robust to adverse events
- increase the efficiency of the electricity industry, taking into account the transaction costs of market arrangements and the administration and compliance costs of regulation, and taking into account Commerce Act implications for the non-competitive parts of the electricity industry, particularly in regard to preserving efficient incentives for investment and innovation.



The Authority views this interpretation as one of its three foundational documents. The other two include the Electricity Industry Participation Code (Code) amendment principles and the charter for advisory groups (Electricity Authority, 2011b).

We note that the Authority's statutory objective interpretation has not been updated to reflect the amended objectives from the amendments to the Electricity Industry Act 2010 that came into force in December 2022 or to account for the High Court's decision in *Manawa Energy Ltd v Electricity Authority* [2022] NZHC 1444.

### **2.1.3 The Authority's statutory functions**

Under the Act, and in line with these objectives, the Authority has the following functions:

- to maintain a register of industry participants and to exempt individual industry participants from the obligation to be registered
- to make and administer the Code
- to monitor compliance with the Act, the regulations, and the Code, and to exempt individual industry participants from the obligation to comply with the Code or specific provisions of the Code
- to investigate and enforce compliance with the Act, the regulations, and the Code
- to undertake market-facilitation measures (for example, providing education, guidelines, information, and model arrangements), and to monitor the operation and effectiveness of market facilitation measures
- to undertake industry and market monitoring, and carry out and make publicly available reviews, studies, and inquiries into any matter relating to the electricity industry
- to contract for market operation services and system operator services
- to promote to consumers the benefits of comparing and switching retailers
- to undertake measures aimed at protecting the interests of domestic consumers and small business consumers in relation to the supply of electricity to those consumers
- to perform any other specific functions imposed on it under this or any other Act.<sup>5</sup>

## **2.2 Historical context**

The Authority was established as an independent Crown Entity in 2010 under the Electricity Industry Act 2010 (the Act) in response to the 2009 Ministerial Review, replacing the Electricity Commission. It aimed to provide independence from the Government, and clearer and more simple objectives. At inception, the Authority's focus was on increasing competition and managing dry year risk.

The electricity industry has changed markedly since the Authority's inception. Climate change, government priorities, social and economic pressures, and emerging technologies are now influencing the market. This change has been evidenced recently with the increased market volatility since 2018. This volatility resulted from decreasing gas supply, the Government's greater commitment to reduce greenhouse gas emissions, and the rapid evolution of energy systems and consumer participation.

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<sup>5</sup> Section 16(1) of the Act.

The Authority is in the midst of a transitional period from mass electrification and a shift to a low-emissions energy system. The transition will need to be efficient while maintaining a secure energy supply to New Zealand. The Authority is required to work quickly to do so, for work that is beyond its initial focus. The work has so far been absorbed by the current appropriation—through a tightening of margins (explained in section 5.2.1)—though this is reaching capacity. In essence, the Authority’s funding has been suitable for historically flat demand and incremental changes, but recent events require an expansion of the Authority’s scope of work.

## 2.3 Organisational structure

The Authority is a team of 126 individuals, governed by its Board, and led by its Chief Executive and senior leadership team (SLT).<sup>6</sup> The Board is appointed by the Governor-General on the recommendations of the Minister of Energy and Resources. The Chief Executive and the rest of the senior leadership team direct the Authority’s teams. The senior leadership team is made up of the Chief Executive and six teams that directly report to the Chief Executive. At the time of this report:

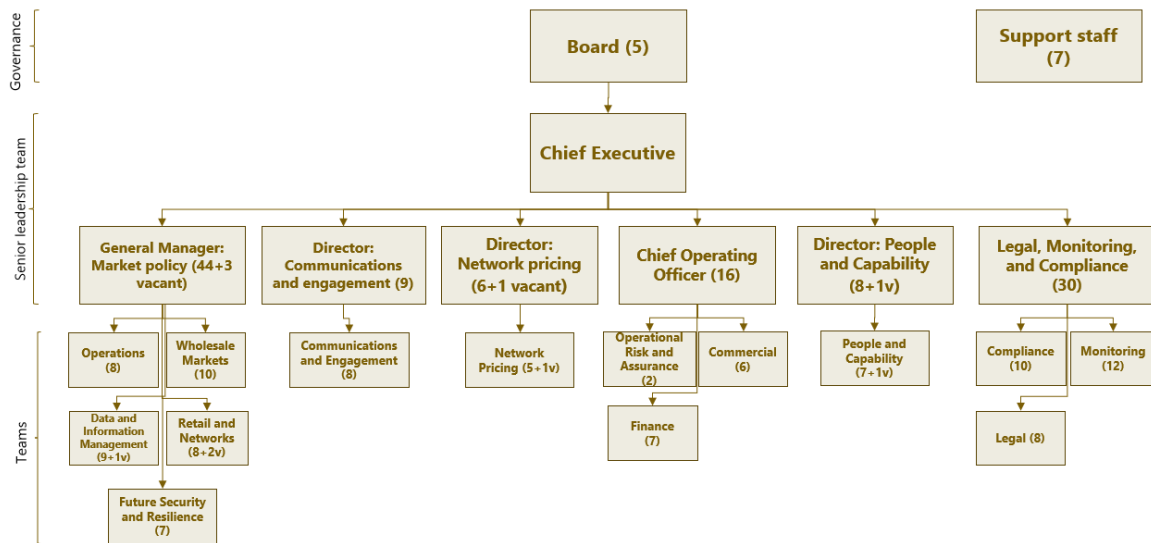
- the Chief Strategy Officer role is vacant and the team that reported to that role is temporarily reporting to the General Manager Market Policy
- a temporary role of Director of People and Capability has been created for a fixed term, reporting to the Chief Executive, to enable a greater focus on the capability and capacity for the work facing the Authority as shown in Figure 2. Normally the Manager People and Capability reports to the Chief Operating Officer.

Figure 2 presents a high-level summary of the Authority’s organisational structure as at August 2023. The organisational structure and proposed vacancies therefore reflect the updated budget 2023, that is, not the historic organisational structure before the 2022 levy consultation was started (we note that historic FTE counts are shown in Figure 21). In Figure 2, the number of employees within each team (including contracted and fixed term roles) are stated in brackets, with vacancies separated out. The arrows drawn indicate reporting lines and responsibilities. The seven support staff are shown separately. They include the Board’s secretary and the executive assistants.

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<sup>6</sup> We also note that, technically, under the Act the Authority is comprised of 5-7 members of the board, though the Act also refers to certain powers of “officers” and “employees” as well. The total number of staff (126) is estimated from the Authority’s organisation chart provided to us in August 2023.

Figure 2: High-level schematic of the Authority's organisational structure



Source: The Electricity Authority

## 2.3.1 Advisory and technical groups

In addition to the Authority staff, there are three advisory and three technical groups. The charter for advisory groups states how these groups were established, how they are to be operated, and how they are meant to interact with the Authority (Electricity Authority, 2011a). These groups provide the Board with independent technical advice and recommendations on different aspects of the electricity industry.

The three advisory groups are:

- The Security and Reliability Council provides advice on the performance of the electricity system and system operator, and on the reliability of supply issues.
- The Innovation and Participation Advisory Group (IPAG) provides advice and recommendations on Code development and market facilitation measures with a focus on evolving technology and business models, and competition and consumer choice.
- The Market Development Advisory Group (MDAG) provides advice on Code development and market facilitation measures with a focus on the evolution of the machinery of the electricity market.

The technical groups are:

- The Standing Data Formats Group provides advice on new file formats required to exchange information. It also promotes awareness and use of file format change review protocols in the industry. This group is not currently active but likely to be called on in the next couple of years in relation to a new registry fields project.
- The Switch Technical Group provides advice on switching process amendments to ensure they are fit for purpose. It also promotes awareness of the current switching protocols and the proposed amendments in the industry. This group is involved with work that has been significantly

advanced but then put on hold. It is expected to be involved in work next year and a call may then be made on its future.

- The Future Security and Resilience Common Quality Technical Group has been recently established to advise the Authority as it carries out its review of common quality requirements in Part 8 of the Code. The Authority appointed 11 representatives to this group on 6 July (Electricity Authority, n.d.).

There has been recent consultation on its consultation charter and the advisory group structure (Electricity Authority, 2023).

## 2.4 Recent changes

The Authority has recently committed to:

- support New Zealand's transition to low-emissions energy, and
- implement the change to the Electricity Industry Amendment Act 2022 (Amendment Act).

### 2.4.1 Support for the transition to low-emissions energy

The New Zealand Government has committed to the goals of net zero emissions of greenhouse gases (excluding biogenic methane) by 2050 and 50 per cent of energy consumption to come from renewable sources by 2035, as well as an aspirational target for 100 per cent of renewable electricity by 2030. The electricity industry is in the early stages of significant change. The Authority has a role to play to help manage risks and opportunities throughout this period in support of the long-term interests of consumers.

The Authority sets out five strategic ambitions in its Statement of Intent. Supporting low-emissions energy to electrify the economy is one of these ambitions. This ambition requires the Authority to ensure the transition is efficient, while it maintains energy security, system adaptability, and affordable electricity for consumers.

The Statement of Intent outlines two key areas of impact within the low-emissions energy ambition – that are measured:

- the Authority's electricity market settings enable an efficient transition to reliable low-emissions energy in New Zealand
- network and market price signals to support the lowest overall cost to consumers.

The Authority has linked the transition to its statutory objectives of competition, reliability, and efficiency.<sup>7</sup>

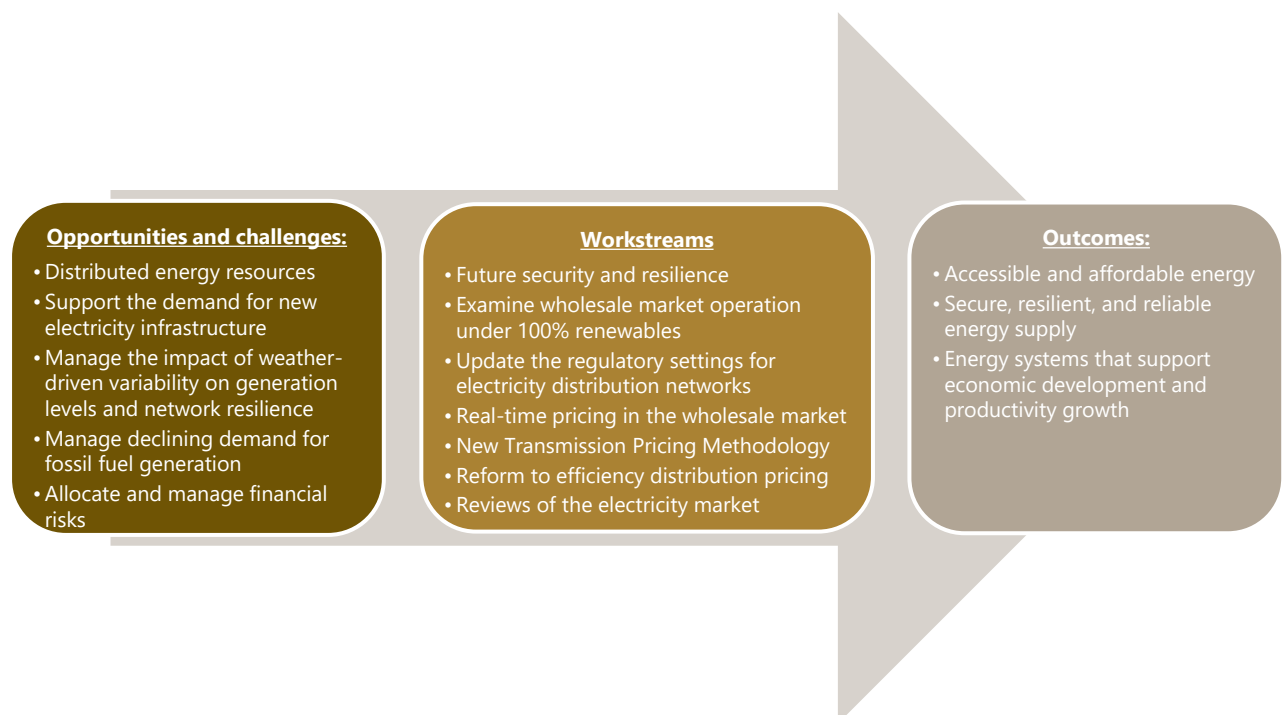
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<sup>7</sup> As the Authority does not have explicit statutory obligations in relation to sustainability and the transition, the link is in respect of achieving its statutory objectives. As with other areas, it will face trade-offs in supporting government objectives but will need to act consistently with its statutory objectives. We note that in performing its functions, the Authority must have regard to any statements of government policy concerning the electricity industry that are issued by the Minister (see section 17 of the Electricity Industry Act). In addition, the Authority has accountability obligations under the Crown Entities Act.

The energy transition roadmap outlines the Authority’s path to support an efficient transition to a low-emissions energy system. The roadmap categorises the path into two key areas—opportunities and challenges for the sector in its transition and workstreams to achieve these. The opportunities and challenges recognise the options for the sector to evolve and transition to meet New Zealand’s climate goals. The Authority’s response presents the workstreams and associated activities the Authority will undertake to facilitate an efficient transition.

These two components (opportunities and challenges, and workstreams) and the associated outcomes the Authority is focused on are summarised in Figure 3 below.

Figure 3: Summary of the energy transition roadmap



Source: Electricity Authority energy transition roadmap

## 2.4.2 Implementing changes to the Electricity Industry Act

On 31 December 2022, the additional statutory objective and function for the Authority under the Electricity Industry Amendment Act 2022 (Amendment Act) came into force. The Amendment Act amends the core Act that governs the Authority. It provides the Authority with the additional statutory objective to “protect the interests of domestic consumers and small business consumers in relation to the supply of electricity to those consumers” which “applies only to the Authority’s activities in relation to the dealings of industry participants with domestic consumers and small business consumers” (Parliamentary Counsel Office, 2022).

The Amendment Act allows the Authority to amend the Electricity Industry Participation Code to protect households’ and small business consumers’ electricity supply. It also includes other changes, for instance, provisions for the Authority to:

- gather information from industry participants for reviews

- exempt industry participants from the Code on terms considered necessary
- share information with other public service agencies or statutory entities (Parliamentary Counsel Office, 2021).

The amendment also transfers the Part 3 Arm's-Length rules from the Act into the Code (a new Part 6A) to give the Authority the ability to respond quickly to technological changes and promote competition and innovation in emerging distributed energy markets. It also strengthens the Authority's enforcement regime through increased penalties and gives the Authority the ability to set information and quality requirements for distributors (Parliamentary Counsel Office, 2021).

### 3. Assessment of performance

As part of our review, we held over 40 interviews with staff and external stakeholders (as detailed in Appendix A), including those who are regulated by the Authority, to inform our understanding of how well the Authority is positioned to deliver now and in the future. In this section, we bring together the key themes of those interviews and outline our findings on the current state of the Authority. This covers the Authority’s:

- performance against statutory objectives, and
- organisational management.

This section is also intended to assist the Board and current Chief Executive within the context of change (including change already underway and sought) – with many parties commenting on recent improvements seen at the Authority.

We acknowledge that regulators do not frequently receive universal praise from those they regulate, and some level of tension is expected. In forming the current state analysis, we have sought to identify where comments received would assist with continual improvement for the Authority, improved efficiency and supporting the long-term interests of consumers.

#### 3.1 Performance against statutory objectives

The following subsection assesses how the Authority performs against its statutory objectives—to promote competition, reliable supply, and efficient operation of the electricity industry. To do so, we draw on the Authority’s annual reports, the World Energy Council’s Energy Trilemma Index, and our stakeholder engagement.

The Authority assesses its performance against the statutory objectives using outcome measures. Performance is assessed both quantitatively, using statistics, and qualitatively, using surveys of consumer and industry participants. The Authority acknowledges external events’ influence on performance, and consequently, the difficulty in establishing cause and effect relationships. Nevertheless, it is useful to assess Authority’s overall performance using quantitative and qualitative indicators.

The Authority’s performance against its outcome measures is summarised in Table 6 below. Overall, relative to 2020/21, perceptions of competition, reliability, and efficiency either stayed the same or reduced. Perceptions were generally influenced by the unplanned outages on 9 August 2021, the high-profile reviews of competition, and the rising cost of living.

Table 6: The Authority’s performance against its statutory objectives in 2021/22

Outcome	Performance summary
1. Competition	Industry participants scored statements about competition poorly (agreeing in only 29-36% of cases), while consumers scored the same statements reasonably well at around 75%. Survey comments suggested this was due to increasing costs of electricity and the view that there was little difference between power companies and their offers. However, the Authority has indicated it has recently

Outcome	Performance summary
	<p>completed work regarding retail prices and found that in real terms prices have stayed flat or fallen with electricity costs increasing by less than the rate of inflation. For instance, they observed an increase of around 3% in nominal terms in the year ended June 2023 relative to 6.7% inflation in the year ended March 2023.<sup>8</sup></p> <p>In addition, retail market share and concentration declined until later in the year when Mercury acquired Trustpower’s retail business, and the two statistics spiked—the Commerce Commission commented that the acquisition would not detrimentally impact competition.<sup>9</sup></p>
<p><b>2. Reliability</b></p>	<p>Perceptions of electricity reliability changed minimally from 2020/21. The survey suggested strong confidence in the reliability of energy supply. 72% of industry participants and 64% of consumers agreed energy supply was reliable.</p> <p>However, concerns were raised over:</p> <ul style="list-style-type: none"> <li>• the challenges faced by New Zealand in reducing greenhouse gas emissions</li> <li>• how electrification will increase pressure on demand from the electricity system</li> <li>• New Zealand’s reliance on thermal generation from coal</li> <li>• a lack of investment in renewable energy.</li> </ul>
<p><b>3. Efficiency</b></p>	<p>59% of consumers (down six percentage points from 2020/21), and 37% of industry participants (up two percentage points) agreed with statements about the efficiency of electricity markets. Consumers’ perception decrease could be attributed to confusing retail pricing structures, the cost of electricity, and the rising cost of living.</p> <p>Performance against the four efficiency statistics tracked as expected. The investigation following the 9 August blackout found that the market acted in line with underlying fundamentals in terms of pricing.</p>

Source: The Authority’s 2021/22 annual report

## A number raised concerns in relation to competition and/or reliability

### Competition

Thirteen of the 26 external stakeholders that we interviewed (i.e. half) commented on at least one of the following – a sense that the Authority:

- had been defensive of the status quo (and not critical enough)
- was fascinated by market principles
- was not focused on addressing meaningful structural issues.

<sup>8</sup> See: Stats NZ (2023) and Parliamentary Service (2023).

<sup>9</sup> For instance, see Electricity Authority (n.d.b).

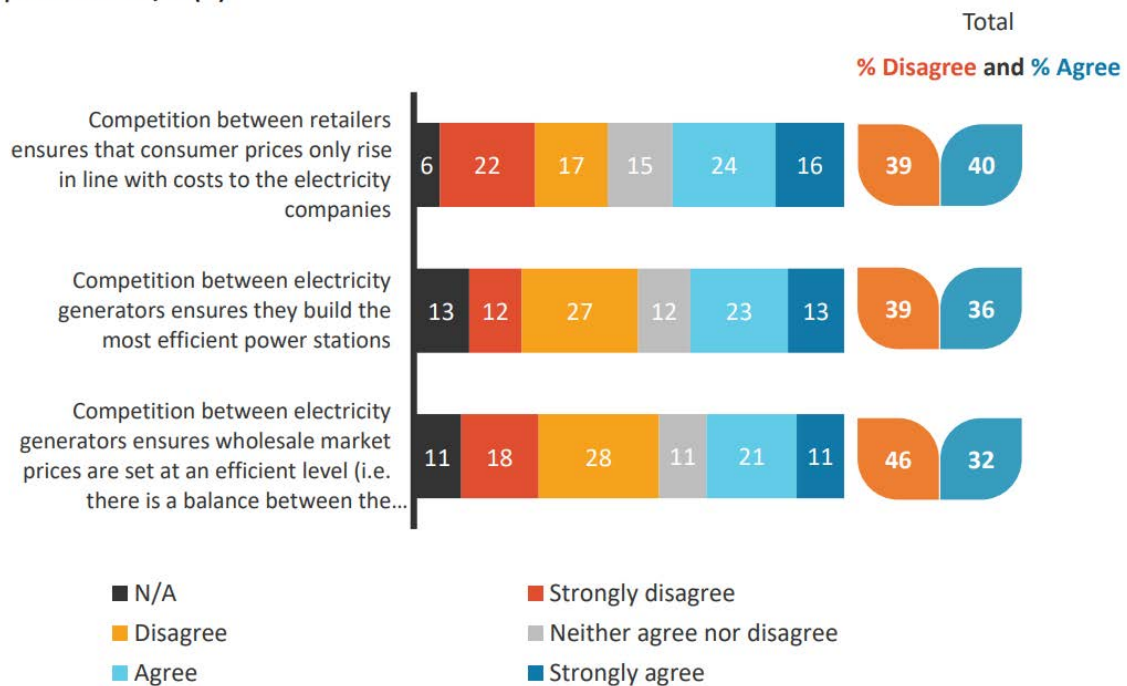


A result of this was a reduced confidence in the Authority from these stakeholders, and for at least two a perceived reduction in value in engaging with it. The concerns around competition were similar to those quotes provided in relation to competition in the Authority's 2021/22 annual survey of industry perceptions (summary results in Figure 4) which raises concerns around:

- the impact of high hedge prices
- price discrimination
- lack of competition among generators
- wholesale market settings and structure.

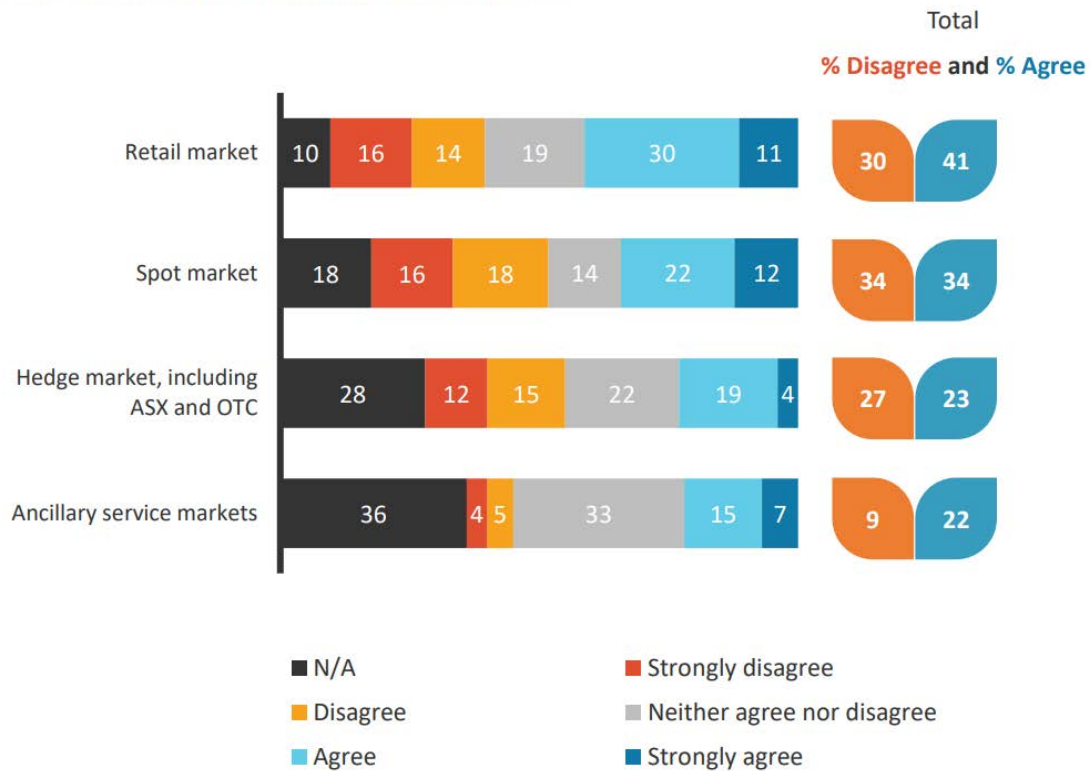
Figure 4: Summary results from a 2021/22 survey of industry perceptions (commissioned by the Authority)

**Q: Please rate the following statements. If you are unsure, or would prefer to not answer a question, please select N/A. (%)**



Base: All Respondents (n=114).

**Q: Please rate your level of agreement that prices in the following electricity markets reflect the outcomes expected in a workably competitive market: (%)**



Base: All Respondents (n=114).

Source: AK Consulting for the Electricity Authority

One stakeholder stated that with the Authority’s consumer care guidelines project, it was venturing beyond its main role. The stakeholder felt that the Authority was not concentrating on structural competition concerns, which would help address material issues of affordability. We raise this simply as one stakeholder’s example of what others raised in relation to a sense that the Authority was not focusing on structural issues/those core to its role. Separate to the question of priority/focus, as we note below, other stakeholders mentioned the guidelines as a positive example of a collaborative consultation process.

**Reliability**

In the industry perceptions survey, 85 per cent of interviewees agreed that there is a reliable supply of electricity. However, only 57 per cent agreed that there will be enough electricity to meet ongoing needs, suggesting greater concern about the future reliability and security of electricity (this also bore out in our interviews as well). There is a risk the Authority disproportionately focuses on the need to evolve market mechanisms in the transition to greater renewables over possible requirements in system security arrangements.

Two components can be thought of as influencing the delivery of reliability—the electricity market and its associated mechanisms, and the security system. A number of stakeholders expressed a view that the Authority focuses on the market mechanisms and it is held accountable to them. In contrast, the Authority outsources the security system through the Code and contracts. As such, direct accountability for this outsourced work falls largely on the system operator, which raises a risk of

receiving less focus as a result by the Authority despite that contract being a significant portion of overall expenses and reliability being a core component of the energy trilemma.

A potential solution to this is an ancillary service to shift the electricity load from peak times, such as the proposed six-hour standby reserve highlighted by the Hodgson review in 2021 (Ministry of Business, Innovation and Employment, 2021). Stakeholders expressed great concern that the Authority has not progressed this or other potential solutions with urgency. A new ancillary service would allow the electricity system to manage multi-hour shortfalls through demand side arrangements and backup generation. Although we note ancillary services will be reviewed in the Future Security and Resilience study, this study has not yet been completed and the roadmap envisaged delivery from FY 2022/23.

The Authority noted:

- its winter 2023 peak demand management work provided an interim measure, the implementation of which also provided insights into the scale of the operational impacts of developing a new ancillary service<sup>10</sup>
- an ancillary services review is planned to begin soon, in July 2023.

## 3.2 Organisational management

In this sub-section, we describe our findings of the Authority's current performance across five key areas:

1. Leadership and direction.
2. Delivery of regulatory functions.
3. Key relationships.
4. People development.
5. Financial and resource management.

Overall, we find that a key area of progress is a move towards strategic planning – with a strategy reset in 2020 and Energy Transition Roadmap – but a clear regulatory strategy for the medium-to-long term is needed. A practical link from its strategic thinking to its delivery appears unclear to outsiders, although we suspect this it is still being worked through. Many interviewees commented on the amount of change for the Authority – both internally (in staff turnover) and externally (in the industry) – which the current Chief Executive is aware of and we understand is addressing. Choosing the right team for senior leadership would greatly assist, noting that a number of appointments have recently been made.

We found that effectiveness in terms of outward engagement at the Authority appears mixed, perhaps having been dependent on staff personalities, although there are early signs of a likely intention to change to a more open and supportive culture with new leadership. Internal review was also identified

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<sup>10</sup> The Authority notes the interim measure was in the form of Option E: clarify availability and use of discretionary demand control, which it states provided information to the system operator on the availability of discretionary demand response (a recommendation of the Hodgson report) and visibility to the market of the level of discretionary demand available to manage peak demand situations as well as a price signal to the market of the impact of calling on that resource.

in the staff engagement surveys and in our interviews as another key area for improvement. While high staff turnover seems likely to have caused a significant loss in institutional knowledge, particularly given what we heard to be a low level of discipline in document management in the organisation, it may represent a greater opportunity for new leadership to reshape and rebuild on these key areas.

## 3.2.1 Leadership and direction

### Purpose, strategic ambitions, and regulatory strategy

The Authority describes its purpose as follows.

“We are the kaitiaki of electricity. Our purpose is to enhance New Zealanders’ lives, prosperity & environment through electricity.” (Electricity Authority, 2021d)

It is clear the Authority is operating in a significantly different context to that for which it was created when it replaced the Electricity Commission. It is also operating in a significantly different environment in the last four or so years, for instance with the establishment of the Climate Change Commission and release of first Emissions Reduction Plan, the unexpected outage at the Pohokura gas field in 2018, and more recently increases in UTS claims. Of particular focus are the challenges presented to the electricity sector in the transition to a low emissions economy.

To support the long-term interests of consumers as the sector supports the transition to a low-emissions economy, the Authority will need to play an enabling role as the regulator. It will need to be nimble in its changing operating context, rather than the more reactive and responsive role more recently. A medium-term regulatory strategy needs to be developed and clearly communicated to increase transparency and reduce capriciousness – as perceived by some stakeholders we talked to – to ultimately improve outcomes for New Zealanders. This is supported by stakeholder comments in a stakeholder perceptions survey carried out by Kantar Public for the Authority in September 2022. Enduring themes included the need for the Authority to have a strong future focus – to be agile and able to adapt to evolving environment, and to provide greater regulatory certainty: “technology moving faster than the rules.”

In February 2020, the Authority undertook a “strategy reset”, which included consultation and external engagement through workshops around the country – a key shift it has made towards strategic planning. It first published this strategy in its Statement of Intent 2021-2025 (SOI). The SOI sets out five strategic ambitions to reflect its aspirations for the future, with an underlying energy transition theme:

1. Low emissions energy.
2. Consumer centricity.
3. Trust and confidence.
4. Thriving competition.
5. Innovation flourishing.

The Authority illustrates how these ambitions are linked to its main statutory objective through the below diagram (copied from its SOI), with the size of the circle indicating the strength of relationship.

Figure 5: How the Authority’s strategic ambitions and main statutory objective work together.

STATUTORY OBJECTIVE (outcome measures)		Competition	Reliability	Efficiency
STRATEGIC AMBITIONS (impact measures)	Low-emissions energy	●	●	●
	Consumer centricity	●	●	●
	Trust and confidence	●	●	●
	Thriving competition	●	●	●
	Innovation flourishing	●	●	●

Source: Electricity Authority (2021d)

In our conversations with Authority staff, they all seemed aware of future challenges, particularly the transition, and the pace and scale of the change required. The last few years have been challenging for the Authority as it has had to rapidly reprioritise to respond to unexpected events (i.e., the undesirable trading situation claims (UTSs) and the 9 August 2021 event and subsequent reviews).

The Authority seems to have begun to pivot towards an enabling role in the sector. In December 2021, the Authority published a one-page energy transition roadmap (Electricity Authority, 2021c) alongside a supporting document (Electricity Authority, 2021b). The roadmap provides an overview of the Authority’s work in six core areas:

1. Generation investment and reliability.
2. System security and resilience.
3. Distributed energy resources integration and investment.
4. Efficient network infrastructure investment and operation.
5. Monitoring, compliance, and enforcement.
6. Risk management through the transition.

The roadmap is framed in the context of the New Zealand’s commitment to net zero emissions of greenhouse gases (excluding biogenic methane) by 2050 and the Government’s: i) target that 50 per cent of energy consumption to come from renewable sources by 2035 and ii) aspirational target for 100 per cent of renewable electricity by 2030. Yet the Authority appears to be lacking a clear regulatory strategy for the medium to long term. The current roadmap lists 23 projects with timeframes mapped between 2021/22 and 2022/23 (noting that the Authority intends the roadmap to be a living document). Other corporate material (such as its Annual Corporate Plan, SOI, Annual Reports, and recently revamped website) provide context to its role, goals, and strategic ambitions. However, it is not immediately clear how the Authority’s projects fit with its determined priority work areas, its role in the transition, and how this links back to its main statutory objectives and regulatory functions.

This was a common thread of feedback in our interviews with stakeholders: that it is unclear how different parts of the Authority’s work are connected. One stakeholder suggested that the Authority has not evolved to be clear about its objectives and the reasons for the projects that it carries out.

Independent retailers have also raised this lack of clarity between the Authority's strategic priorities and work plan in a recent submission to the Authority.<sup>11</sup>

In line with this, a couple of staff commented that they thought the Authority had not done itself any favours with how it interacted and communicated with industry and the public in the past. The Authority is making strides to change this. Internal Board documents for its strategy sessions in late 2022 also suggest that Authority staff are conscious of the need to be more accessible in communicating its role, vision, and what it is trying to achieve for consumers.

We note that a key challenge and opportunity for the Authority in building a clear medium-term regulatory strategy is the development of the Energy Strategy, led by MBIE and due in December 2024. The Energy Strategy is intended to support the transition to a low emissions economy, address strategic challenges in the energy sector, and signal pathways away from fossil fuels. The energy sector represents 40.6% of New Zealand's greenhouse gas emissions and support for electrification of transport and process heat will be an important part of the Energy Strategy. In the interim, it will be important for the Authority to be transparent about key uncertainties. Once the strategy has been developed, it will need to be clear in its role in the wider regulatory system. We discuss relationships further below in section 3.2.3.

## Leadership, governance, and culture

### Recent restructures and changes

There has been significant recent change to internal structures and leadership at the Authority, and around the same time, a high turnover of senior members. Following the Authority's strategy reset in 2020, senior leadership then led a reshaping of its operating model to reflect the new "strategy-led" focus. This was carried out in three change processes:

1. **Senior leadership team:** reset of accountabilities and portfolios (March 2021).
2. **Team structure:** team-level changes across the organisation, changes to positions, naming conventions, and resourcing levels (August 2021).
3. **Strategy and Market Policy:** increase and change to resourcing in the Market Policy and Strategy groups (September 2022).

The first round of changes involved the Market Design Group being replaced with the Market Policy Group and the Network Pricing Directorate. Roles for the Network-Pricing Director and General Manager for Market Policy were added to the revised leadership team (and the General Manager Market Design role was removed). In addition, the Communications and Engagement Directorate was created to formalise the Authority's Stakeholder Engagement function.

In 2019 the Authority had a Market Performance team, which comprised three teams: Market Monitoring, Market Analytics and Market Operations. In July 2020 the Market Monitoring function was transferred from Market Performance to Legal, Ministerial and Compliance. In the Team Structure

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<sup>11</sup> Submission to the Authority from 2degrees, Electric Kiwi, Flick Electric and Pulse, dated 21 March 2023, in response to its Review of the consultation and feedback processes consultation paper. This was provided to us by an interviewee.

change (August 2021) noted above, the remaining Market Performance functions were changed so that the Market Analytics function moved into the Market Policy Group (with some changes to its role) and the Market Operations team was disestablished. Instead, aspects of the work Market Operations had done were transferred to other areas and the Commercial Team was established in the Organisational Performance and Delivery Group (under the Chief Operating Officer).

Since then, there have been several departures across the senior leadership team and the organisation (following a similar trend of high turnover experienced in prior years – see section 3.2.4). The current Chief Executive and General Manager (GM) Strategic Communications and engagement are the only remaining members of the seven senior leadership team members from the 2021 restructure: three of the seven-person team left in 2021/22, followed by Chief Executive James Stevenson-Wallace in October 2022. After holding the Acting role, Sarah Gillies was appointed permanently as Chief Executive in December 2022. The then Chief Operating Officer (Richard Eglinton) departed in early 2023, followed by GM Market Policy (Andrew Doube) on 31 March 2023. The Chief Strategy Officer (Joey Au) left most recently in April 2023.<sup>12</sup> Since this time, three new SLT members have been appointed: GM Market Policy Andrew Millar; GM Legal, Monitoring and Compliance Airihi Mahuika; and GM Strategic Communications and Engagement Sally Aitken (who had been acting in a role reporting to the Chief Executive).

There has also been recent movement in the members of the Board. There are currently six members.<sup>13</sup> Former member Sandra Gamble resigned at the end of 2022, and Mark Sandelin resigned effective 31 March 2023, although both had continued past the expiry of their terms, before resigning. In January 2023, Erik Westergaard and Paula Rose were appointed for five-year terms (Voxy, 2023). Dr Cristiano Marantes was also appointed for a five-year term effective 1 July 2023. Board members Allan Dawson and Lana Stockman continue to serve, although the initial expiry date of their present terms has lapsed. Anna Kominik succeeded Dr Crauford as Chair on 13 July 2023 (Electricity Authority, 2023).

## **Culture**

Change processes in any organisation are likely to cause some unease for staff, notwithstanding high rates of staff turnover last year. While this may have been a factor in staff departures, we also heard from interviews that the culture that perpetuated at the Authority may not have been as open and constructive as what it appears to be moving towards now (although we did not seek to talk to former staff to analyse this further, nor did our document review include information around staff departures, for example, exit interviews).

Internal and external stakeholders seemed to agree that there has been a “change from the old guard” and that with recent successive changes in leadership the culture seems to be moving in the right direction. The “old Authority” was described by various external stakeholders as adversarial, dogmatic and stubbornly focussed on economic first principles.

Most stakeholders felt that there have been promising signs of a shift in approaches to engagement, with examples of more genuine investment in understanding sector participants’ positions and listening to concerns. This seems to have been a variable experience, and likely to have been project

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<sup>12</sup> Joey Au was not in the 2021/22 leadership team. He was appointed CSO in January 2022.

<sup>13</sup> Under section 13 of the Act, the Authority comprises between 5 and 7 members.

and/or personality dependent. Many still felt that they had to push to be heard, and that processes did not support quality or timely engagement. Internally, a recent move to a new office with all teams together on one floor has increased informal interaction, helping with planning and coordination.

There appears to have been very little room for flex from being resource-constrained, which may in part stem from the culture that existed in the organisation before the recent leadership changes. As the Authority argues in its levy consultation document, its baseline funding has largely remained the same for many years. Comments from a couple of internal and external interviewees suggested that historically the organisation has been, perhaps deliberately and proudly, run on a lean budget. A result of this may be that the Authority has been somewhat reactive in its role, which must change if it is to deliver on the significant changes ahead to guide the sector through the transition to greater electrification. In general, most interviewees agreed that the policy area of the Authority has a significant task ahead which requires greater resource – but there was caution about how well-placed the Authority will be to deliver and the distinctions between areas of focus for particular policy teams. We acknowledge that the policy area of the Authority does not operate in isolation, and the supporting functions of the organisation will be similarly impacted.

### **Role of the Board**

Another theme we heard in interviews was of the role of the Board, which some described as previously being heavily involved in the running, focus, decision-making and at times potentially advice of the Authority. This supported an environment of low risk-tolerance with decision-making held at the top and a culture where staff possibly may not have felt trusted or empowered. In addition, this was considered to impact the timeliness of decision-making and possibly staff turnover.

There were questions raised about whether the Board should be so involved in the business or whether it should have a more high-level governance role. General sentiment was that recent change was positive, though one stakeholder suggested the Board could operate more like Commissioners with more targeted efforts to assist in working through particular matters. A couple of stakeholders argued that expertise is strong through the sector and, as such, the Authority should make use of sector expertise through advisory boards and technical expert groups – rather than necessarily having the Board needing to be so involved.

Under the Act, unlike other typical organisations, the Board's responsibilities likely extend beyond a typical governance role to ultimately the statutory decision-maker and party responsible for writing secondary legislation. This may complicate opportunities for delegation and governance focus.

### **Delegations**

Many commented that work had been undertaken and may well continue to support greater delegation. A number of stakeholders noted that a large portion of decision-making goes to the Board or senior management (noting legislative responsibilities of the Board stated above), and one party suggested that processes appear to often break down when issues get to the Board as matters are either not progressed or sometimes reverts to prior steps. As noted above, we acknowledge these were perceptions held by stakeholders and note they need to be considered relative to opportunities while meeting the legislative obligations of the Authority's Board. These views also likely relate to how the Authority communicates its priorities and project processes externally, which could provide greater transparency.



That said, in recent years, standing delegations have been established for some compliance decisions, minor procedural decisions, and low-level activities related to administering the Code. We heard that there are certainly other areas for improvement, for example, in litigation delegation where ad hoc delegations are individually sought. While greater delegation involves risk assessment, it presents an opportunity to improve decision-making efficiency and remove delays and uncertainty that come with seeking approval – from a Board that meets monthly – particularly for a growing organisation.

### **Stakeholder perceptions**

Our findings appear to align with stakeholder feedback through the 2022 Kantar stakeholder perceptions survey, which included the following themes.

- Effectiveness of leadership – driven by the resignation of the Chief Executive, board members not being reappointed, and a perceived lack of clear succession planning.
- Organisational culture – concerns about the lack of strong culture, people strategy, or empowerment of staff, related to the staff churn.
- Capacity of staff – perceptions that the Authority lacks the capacity and ability to respond or get work done within an appropriate time, with technology seeming to move faster than the rules. Stakeholders expressed concerns that this may have direct and significant impacts on their business operation.
- Capability of staff – concerns about considerable loss of institutional and industry-specific knowledge required to carry out its role, and a perception that staff are skewed towards junior policy makers. Stakeholders also considered that the Authority takes an overly theoretical approach, compounded by a policy-driven bureaucratic approach, leading to a perceived lack of strategic thinking.

### **Review processes and behaviour**

The Authority conducts annual staff surveys to assess its strengths, weaknesses, and areas for improvement. Within the surveys, staff are asked to assess how the Authority performs across 15 aspects of the organisation.<sup>14</sup> The internal 'review' category consistently scores the lowest out of the categories assessed.

The review category is made up of three components that all score poorly. These include:

- analysing and acting on projects' information and results
- whether measurements are effective for assessing strategy and project targets
- review of whether project outcomes reflect the forecasted outcomes.

This observation of poor internal review process was also raised in our stakeholder consultation, although the Authority notes that there is currently considerable focus on addressing this. Stakeholders provided the example of the 10-year long transmission pricing methodology project. It was suggested that stronger internal review processes would have helped to assess whether the

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<sup>14</sup> These aspects include stakeholder relationships, culture, leadership, operational processes, client focus, external providers, internal communication, custom, performance development, organisation performance, strategy, project processes, review, technology, and implementation.

project's proportional benefits and early feedback meant additional resources were required. This assessment would in turn have allowed the Authority to act on the learnings and prioritise resources appropriately.

Strong internal review processes have an important impact on the effectiveness of the Authority. Without sufficient review and internal processes, projects may not result in the desired cost-effective outputs in the designated timeframe. Internal review processes can therefore ensure projects are managed effectively and the Authority's resources are prioritised to deliver optimal outcomes.

### **3.2.2 Delivery of regulatory functions**

This section looks at the Authority's operating model, collaboration, and partnership (noting relationships are discussed following this in section 3.2.3), prioritisation, and execution and adaptation of activities. Potential areas for improvement include:

- explicitly including medium-term issues in work planning
- greater clarity of workplan and prioritisation approach externally
- building on the Authority examples of best practice for collaboration
- pushing the innovation envelope
- considering where decision rights and delegations sit within the Authority
- more explicit discussions at a systems level about where the respective roles and risks are held in the energy sector
- improving the links between projects and teams workplans and resourcing
- addressing the backlog of proposed Code changes and generally improving the pace of change.

#### **Operating model**

Below we discuss the key teams within the Authority as well as other components of its operating model such as advisory groups. We discuss possible shifts as part of the discussion.

#### **Development of regulation and the Authority's "policy" function**

Of the Authority's core components, the policy component was identified as a driver of activity within the organisation (e.g. internal organisational demands such as communications and legal advice were considered to flow from policy activities). Many stakeholders were critical of this area of the organisation, with a general perception that the "policy" role of the Authority as regulator is to develop regulation and have an overarching regulatory strategy, rather than the typical use of the term policy within central government, which is a role that MBIE plays in the system.

The Authority explained its policy function in the context of its role as regulator as follows, centred around its unique role in developing, administering and enforcing the Code (highlighting the complexity of the 1,300-page rulebook). In fulfilling this role, staff explain that it draws on public policy skill sets and practices to develop the Code and in monitoring Code changes:

"Market Policy is responsible for both regulatory stewardship and regulatory advice. The focus of Market Policy has shifted from 'research and development', to an emphasis on the market-regulator model – embracing effective public policy practices specific to stakeholder engagement, environment scanning, strategy setting, and policy formation. In

the Authority generalist regulatory capability sits alongside deep technical skills: roles that require deep policy, regulatory and machinery of government expertise. Core specialisation across Market Policy (and Network Pricing) include regulatory economists, market expertise (financial or electricity) and engineering.

To act as an effective regulator, the Authority needs to take an evidence-based approach to policy development in the context of the Code. This includes identifying issues and assembling information, developing options, testing these options with stakeholders, assessing these options based on evidence, choosing a preferred option, implementing change (including via Code drafting) and monitoring their success. In this way it follows a traditional policy process that other regulators may not need. As part of this process the Authority also needs to seek approval at various stages from the Board.

The Authority is also working to become a more strategy led organisation, so that it is focusing on those areas of most significant and greatest value, especially during the transition.

In part as a product of the transition, the Authority is also engaging increasingly and directly with other energy regulators, including MBIE, the Commerce Commission, the GIC and EECA as these organisations all seek to navigate the challenges the transition presents. This requires the Authority to have a strong policy skill set that enables it to contribute effectively to policy processes that could impact the electricity market.”

In our interviews, there was less certainty both from other teams within the Authority and stakeholders of the distinct roles of different policy teams. Some of those interviewed raised questions over the size, possible overlaps, or focus of the policy teams. A risk of lack of industry insight was raised by some external parties, with a number commenting on a recent focus for policy expertise seen by some at the expense of industry insights that had been exacerbated by the turnover of key staff. Inconsistency in the quality and sincerity of engagement as well as report quality (particularly the links with prior work) were also considered most notable in relation to policy functions, with staff turnover considered likely to be having some impact.

### **Use of advisory groups**

We are aware the Authority has just reviewed its consultation and feedback processes (with consultation closed and decisions published), including consulting on its use of advisory groups (Electricity Authority, n.d.-a). There appeared to be a mixed review on the Authority’s support of advisory groups where some were seen as well supported (e.g. SRC, noting its different role which is explicitly set in statute) with others appearing to be less well supported (in part due to staff turnover) and whose recommendations had not obviously been considered or responded to (e.g. IPAG). A question was also raised of whether each should have an ongoing function or whether advisory groups could be used to solve specific issues with a clearer focus and a time horizon on those specific issues. These indications could be usefully considered in the context of the Authority’s current review (noting that the Act prescribes some aspects of advisory groups under sections 19 to 22 of the Act).

### **Role of the legal team**

The legal team seems to have been working under a lot of pressure in recent years, particularly in relation to the 9 August event and subsequent reviews, and increased judicial reviews and litigation. While external specialist legal support for litigation is provided through a separate contingent

appropriation (outside the scope of this report), litigation takes time away from staff on other projects and business-as-usual activity. There is a sense from staff across the organisation of the impact these events have had on staff working outside of normal hours, although it is difficult to make an assessment on this as the Authority does not use time sheets.

The legal team provides a range of services, with a central role being in drafting the Code and Code amendments, given the Authority's role in developing secondary legislation. As such, they are often part of a "policy" project from the outset. Support to the rest of the organisation includes strategic advice, jurisdictional questions, compliance with legislative requirements, and questions of due process. They also help with requests under the Official Information Act (OIA), levy consultation, and annual review. An increase in policy work will clearly have implications for legal resource, and this has been requested in the levy bid. However, it seems they have been constrained in progressing internal training and education in processes core to good regulatory practice and required fundamentally as part of the state sector (such as health and safety and other obligations related to the Privacy Act and OIA for example). This will be important for the Authority to have the capacity to prioritise with increased staff turnover, and the proposed increase in staff numbers.

### **Compliance and enforcement**

A reset of the Authority's compliance function has been an area of focus in recent years reflected in the Authority's restructure in 2021. We also note that the latest Kantar survey of stakeholder perceptions indicated that some parties considered there was a reluctance to enforce from the Authority. We heard some mixed comments on compliance and enforcement, with some saying that the Authority has not done enough to enforce compliance, and others commenting positively that they have a good pragmatic approach.

Smaller market participants felt that the Authority had not made use of its levers available to it to create regulatory settings that would promote competition. They argued that the Authority's main investigations to date have generally been instigated by external sources rather than initiated by the Authority itself (e.g. recent UTS claims and the investigation into the events of 9 August 2021). One stakeholder believed that the Authority could have conducted a better investigation by using its information gathering powers in a recent UTS case. By doing so, it could have conducted a more efficient investigation and potentially uncovered information that would provide a clearer understanding of the motivations driving the actions of the party being investigated. We expect that an assessment of the use of any mandatory information powers for compliance purposes may be context-specific and should involve consideration of whether it is necessary and reasonable over voluntary requests.

Internally, timeliness and upskilling compliance capabilities (both within the team and across the organisation, to ensure feedback into the rule-making process) appear justifiably to be central concerns for the compliance team. Improving education, communication, and engagement on process with the sector could also be important to help contribute to sector trust and confidence.

We heard that the Authority has faced a large backlog of compliance cases that new staff, after a period of onboarding, have been addressing, having reduced the number of open cases from 119 in August 2022 to 39 in early June 2023. There are positive signs with ongoing work to build the capabilities, processes, and structures it requires to achieve a higher level of maturity in its

enforcement role, and ensure that such a backlog does not build again. One area it may need to continue to build is in how it communicates to regulated parties about what it will investigate and prioritise (and what the regulated party might expect if it were non-compliant in relation to process and engagement). This links to a broader point we discuss throughout this paper about communicating how the Authority chooses to prioritise. Authority staff also noted that in order to address the backlog discussed, it has had to pause efforts on education which we expect it will resume once this backlog has been addressed.

For instance, in June 2022 the Authority published a new Compliance Strategy (Electricity Authority, 2022d), which outlines its compliance approach and contains guiding principles for how it will respond to non-compliance. This will be important to help industry and stakeholders have a clear understanding of how they might expect to interact with the Authority in situations of non-compliance. At the same time, the Authority published a Compliance Monitoring Framework (Electricity Authority, 2022c), although this appears to relate predominantly to its proactive monitoring efforts. This document outlines a risk-based framework and assesses provisions of the Code against the level of harm (with reference to its main statutory objective), and the likelihood of detection. It may be unclear yet to externals what criteria the Authority applies to assess relative priority throughout its enforcement process – from making decisions on initial triage of compliance matters through to the appropriate enforcement action.

Two examples of positive changes we heard about in relation to compliance include progress in shifting delegations from Board level to management, and agreement from the Compliance Committee (on recommendation from the compliance team) to use the Rulings Panel more for a broader range of sanctions. These together suggest the Authority is consciously considering how to reduce barriers to more timely compliance responses, and if it has the right tools to be effective. In this context, alongside recent changes to the maximum penalty available through the Rulings Panel from \$200,000 to \$2 million, it will be crucial that the Authority has robust operational and investigative processes. We also discuss the need to improve information management below.

## **Monitoring**

Monitoring was an area that we generally received positive comments on from stakeholders. We understand the monitoring team works closely with others to support their workstreams, particularly with policy to provide empirical evidence of problems and help to define policy problems. It also supports assessments with compliance, in terms of understanding the engineering, and energy data.

Internally, staff felt that the ability for the organisation to bring together the monitoring and policy functions was a strength and allowed them to move quickly compared to other organisations (although we heard from some stakeholders who felt the links with other policy teams, rather than with monitoring, were not clear). The example given by staff was their work in responding to inefficient price discrimination which originated through monitoring.

## **Commercial and support**

The commercial management function sits with a new commercial team, created out of the recent restructures from the former Market Operations team. We understand the intent behind its creation was to recruit specialist contract management expertise and align the contract governance function with related disciplines (e.g. finance, procurement, planning and operational risk). This team is

responsible for service provider commercial management, namely the contract with Transpower as the system operator, and the other market operations service providers (MOSPs) as well as other major contracts such as the contract with Consumer NZ for Powerswitch, the contract with the commercial market maker, the Authority's IT provider, and the office lease.

On other functions, as mentioned above, staff felt that policy and monitoring were well integrated – but it is unclear and perhaps too early to tell if the commercial team is linked in well with the policy arm. While the shift in responsibility across functional areas of the Authority means that there is now dedicated resource to manage the system operator from a contractual perspective, this is likely to create division between subject matter expertise and those with the technical ability to engage with and understand issues that may arise with the system operator. Such division is an example of a common pitfall in policy implementation for many public sector organisations. As a newly created team, there is a good opportunity for commercial operations to establish strong ties in with the policy component and ensure it is well linked. We note that one of the two new teams from September 2022 was the operational policy team. In the time we have been undertaking this review, the Authority has noted that this team has been recruited, and it has a critical link with the commercial team.

The Authority also shared its April 2023 IQANZ internal audit report of its major suppliers of contracted services, which noted the commercial team had only been formed in mid-2021 and had been growing its capacity. However, it noted that as with any new function, it takes time to build a highly optimised and consistent operation and found further improvement was needed.<sup>15</sup> It made the following findings and recommendations (which management indicated they agreed with and were considering/actioning):

- Technical experts within the Authority should play a stronger role to oversee the performance of suppliers (with two recommendations around better mapping the role of subject matter experts and business groups that consume services to a standard RASCI (responsible, accountable, supporting, consulted informed) matrix created and define the core activities needed for effective procurement/contract management).
- Vendor reporting should have a greater focus on performance (with a standard template to be developed or predefined criteria for monthly reporting that includes use of Red, Amber, Green ratings to indicate performance, risks, plans, etc).
- Management reporting should have a greater focus on performance (enhancing monthly reporting to include a dashboard report covering supplier performance, financials, risks, issues, recommendations, relationship health).
- More consistent contract management process and record keeping needed (with recommendations to define, document, and standardise the contract management process; implement a CRM or similar tool to track interactions and record information; consider using an audit tracking tool).
- Strengthening risk and issue management (with recommendations to complete a risk workshop for each major supplier to capture risks; and create a central register to record and track the risks, issues and audit recommendations).

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<sup>15</sup> Internal audit report of the Authority's management of major suppliers was completed by Independent Quality Assurance NZ Limited at the Authority's request.

## **Case study #1: Oversight of the system operator**

More than 34,000 households had their power turned off on the evening of 9 August 2021, at the instruction of the New Zealand electricity system operator, Transpower. A Ministerial review subsequently concluded this forced disconnection was “entirely avoidable”.

### **The Authority’s relationship with Transpower was identified as needing improvement**

The Electricity Industry Act 2010 specifies Transpower as the system operator service provider for New Zealand’s electricity system and authorises the Electricity Authority to contract Transpower to provide those services.

The Ministerial review concluded the arrangements between the Authority and Transpower in its role as system operator were likely to be “inadequate”. It acknowledged the challenges facing the Authority. Notably, by law the Authority cannot look elsewhere for services and there is a significant information imbalance between the system operator and the Authority. However, the review concluded that the Authority’s oversight of Transpower (which involved relying on the system operator to self-assess and self-monitor its performance) was not a satisfactory state of affairs:

“We believe the EA needs to lift its performance and become a more informed, methodical and proactive monitor of this proficient, but myopic, statutory monopoly. Transpower lost a lot of stakeholder confidence on 9 August. In our view a good regulator might well have prevented or ameliorated some of the missteps of the evening.”

The review recommended that the Authority scrutinise its relationship with Transpower, perhaps with international input, with a view to holding Transpower more firmly to the rules and contracts that bind it – and report to the Minister on the implementation of this recommendation.

### **The Authority has put a renewed focus on stewardship and contract management**

As part of its own review of the 9 August events, the Authority accepted that it needs to be a more proactive and informed monitor of the system operator’s legal obligations. The actions it has taken to improve its capabilities include a renewed focus on “contract management”, including separating out this function into a dedicated team, having a strong “commercial focus” on monitoring contract performance, and reviewing approaches taken overseas and domestically to help identify how to both regulate and support industries.

Authority staff observed to us that historically the Authority has “allowed the system operator to get on with it”. This was in part due to a lack of visibility of Transpower’s data and activities, but also because the contractual arrangements were deemed sufficient to provide clear incentives – and penalties – should the system operator fall short of expectations.

As well as putting in place improved contractual oversight, the Authority has expanded the Policy group to include a new team: Market Policy – Operations. This team’s focus is on the technical management of system operator advice, the near-term enhancements to system operator tools and functions, as well as oversight of the suite of reliability and security of supply policies. Recruitment for senior members of the team has focussed on system operator technical experience to ensure that informed advice and challenge can be provided to the contract management team when working with the system operator.

It is apparent that historically the Authority did not have sufficient focus on system operations or the technical knowledge to be able to provide a critical perspective on Transpower’s activities as systems operator. Our conversations with the Authority made clear that there is a renewed effort to address this shortfall and an expectation from the Board that the Authority needs to have much better oversight of its long-run contract with Transpower.

### **Longer-term structural questions remain on security and reliability accountability**

While a focus by the Authority on improving its contract management with Transpower is likely to help hold the system operator to account, it may not prove to be sufficient – by itself – to provide the assurance needed for security and reliability of New Zealand’s electricity.

New Zealand lacks the formal and structured process that is often in place overseas for accountability for electricity security and reliability. For example, both the United States and Australia have independent expert bodies that can set reliability standards and hold the system operator to account through mechanisms such as audits and spot checks, while the United Kingdom has a formal evaluation process for its system operator that involves an independent panel and stakeholder consultation (and is linked to performance payments). New Zealand is also relatively distinct in having a system operator that is not separate from asset ownership and the system operator not explicitly having a role in network planning and development (potentially creating a gap between oversight of short-term and long-term security of supply issues).

It is an open question at this point whether there are structural changes that might provide strengthened assurance as to security and reliability, including ensuring the monitoring agency (be it the Authority or a new body) has the technical knowledge and capacity to challenge the system operator’s own assessment of its performance. But it is worth signalling that, given the increasing prominence that will be placed on security of supply, the relationship between the Authority and Transpower in its role as system operator may need to be revisited in the future.

Some stakeholders raised the prospect of separating out the system operator role from Transpower. Concerns raised included the potential for conflicts of interest to arise, the potential that grid exit points (and therefore Transpower’s role) will become less important over time, and the complicated dynamic that arises from managing nationally critical service issues under a commercial contract.

In terms of improvements that could be made to the scrutinising the performance of Transpower there are two mechanisms that could be strengthened. The Board



has a Market Operations Committee and the Authority has appointed an independent Security and Reliability Council (SRC). With respect to security and reliability either or both could have a more active role. The SRC was established under the Electricity Industry Act 2010 and has statutory responsibilities to provide independent advice to the Electricity Authority on, amongst other matters, the performance of the system operator. Potential longer-term reform options could include a fully-resourced SRC becoming the primary vehicle for system operator accountability (monitoring, auditing and spot checks), providing an independent view on long-term security and reliability, or taking a whole-of-system perspective to help understand threats, risks and opportunities to the delivery of secure, reliable and affordable electricity.

The other supporting functions of the Authority include People and Capability, Communications, and Finance. In general, we find that these functions appear to be working well and the individuals within these functions are conscious of the challenges that the organisation has faced, and the opportunities ahead.

For instance, Finance has introduced a new financial management system to streamline finance and budgeting processes. People and Capability told us about strategies underway to ensure the wellbeing of Authority staff and create a good working environment, retain staff, and bring recruitment processes in-house to give greater control for hiring managers. We also discuss finance and people development further below in our analysis of organisational management.

For the Communications team, it seemed aware that some of its communications and documents have been long, technical, and not as accessible as they could be. This is an understandable challenge given the complexity of some issues in the Authority's wheelhouse. With the new additional objective in relation to consumers and small businesses, it will need to continue to push improvements in how it communicates, and in plain English as much as possible. We note that in the time since we began our review, the Authority has launched the new version of its website, which aims to have a simpler and more accessible look.

The engagement through the consumer care guidelines project was an example cited by stakeholders as something the Authority has done well, and will need to harness as good practice moving forward. MartinJenkins' independent assessment of four impact measures for the Authority's 2021/22 annual report identified several opportunities relevant to communications, including:

- a more explicit recognition of consumer groups and intended benefits for consumers in more technical documents
- enhanced integration of the voice of domestic consumers in consultation and decision-making, such as through active engagement with a consumer advocate
- exploration of multi-audience, multi-channel content, such as social media or online videos
- setting a clear strategy and purpose for market commentaries, which show significant promise but suffer from an unclear purpose and audience
- more active and early consideration of the low-emissions transition in project scoping and in the problem definition upfront
- clearer recognition of where trade-offs exist between strategic ambitions.

Despite a number of negative comments, stakeholders said that things are moving in the right direction. There was some positive feedback on examples in the policy area where the Authority had done well, and which illustrate progress in this shift. Consumer care guidelines and Real Time Pricing were mentioned by a few as examples where the Authority has engaged successfully in a more collaborative and genuine manner. Stakeholders also thought that the data side was strong, being described by one stakeholder as “a good data shop”, though an opportunity for improvement could be to use the wealth of data it collects in a smarter way, to conduct predictive analysis that feeds into policy work. There were also positive comments about the Electricity Market Information website (EMI), although stakeholders were disappointed that this was not being updated. As we understand, this was due to the Authority losing the staff capability behind the tool.

### **Case study #2: development of consumer care guidelines**

The independent Electricity Price Review (EPR) recommended in 2019 that “the government set mandatory minimum standards that distributors, retailers and others must meet when providing electricity-related services to vulnerable and medically dependent consumers” (Ministry of Business, Innovation and Employment, 2019).

The Authority’s submission to the EPR’s consultation indicated it saw the case for a graduated response, rather than imposing new regulation in this area:

“...enhanced and more visible monitoring of retailer and distributor behaviours may prove sufficient to alter any concerning behaviours which may exist. A decision to impose mandatory standards could ultimately be taken if other less-interventionist measures did not achieve satisfactory outcomes.”

At the time there was also some uncertainty whether the Authority had the power to regulate arrangements between retailers and their customers. Legislation has more recently been passed (August 2022) to provide the Authority with a clearer mandate to protect the interests of domestic and small business consumers in relation to the supply of electricity. The Authority now has a much clearer mandate to intervene beyond its traditional objective of ‘promoting competition’ to protect the interests of domestic and small business consumers. These Authority’s additional statutory objectives came into effect in December 2022.

#### **A light-touch approach to improving industry standards**

The Authority’s Consumer Care Guidelines took effect from 1 July 2021, replacing existing arrangements. Compliance with the guidelines was voluntary and the Authority outlined its expectation that retailers would undertake an annual self-assessment against the guidelines.

Retailers were expected to be fully aligned with the guidelines by 31 December 2021. The Authority stated that, should the guidelines not prove effective, it could “immediately progress a workstream to explore whether making one or more components of the guidelines mandatory would be consistent with its statutory objective” (Electricity Authority, 2021a).

During our interviews, stakeholders identified the development of the guidelines as a positive example of the Authority working in a collaborative manner with the industry. Interviews highlighted the collaborative approach allowed the guidelines to be developed more quickly than other regulatory interventions and draw on insights from those with different technical expertise.

On 9 May 2023 the Authority reported on its first review of compliance with the guidelines. It labelled the results as “disappointing”, particularly given the constructive involvement of most retailers in developing the guidelines. Of the 37 retailers, 18 reported they were aligned with the guidelines, 10 reported they were not aligned and nine retailers did not report, despite being repeatedly asked to do so by Authority.

On 1 June 2023 the Authority reported on its first review of compliance with the guidelines. It labelled the results as “disappointing”, particularly given the constructive involvement of most retailers in developing the guidelines. Of the 38 retailers, 20 reported they were aligned with the guidelines, nine reported they were not aligned and nine retailers did not report, despite being repeatedly asked to do so by the Authority.

**The Authority’s initial approach was reasonable – but there is a case for a stronger response**

A modern regulator has a suite of tools, ranging on a spectrum from the informal (education, facilitation) through to the coercive (standard setting and enforcement). The graduated progression through consumer protection tools requires not only evidence of consumer harm, but also a compelling reason for the regulator to prioritise its resources to act in this instance – and in this instance the Authority acted reasonably in initially endeavouring to facilitate, rather than mandate, an improvement in industry standards.

At the time there was a strong indication from the industry that it would take ownership in addressing issues with vulnerable consumers, which may have alleviated the need for a formal regulatory response. In light of the uncertainty as to the Authority’s powers to enforce any new mandatory rules it also appears to have been a proportionate response to give the industry an opportunity to act with its monitoring efforts able to identify the effectiveness of the approach.

However, circumstances have now changed. The Authority’s response to the industry’s clear failure to adhere to voluntary standards will be insightful. The Authority will, for first time, need to clearly address its newly expanded remit (of consumer protection) and it will face a question as to whether to introduce mandatory minimum standards or consider other levers within a voluntary environment.

**Opportunities to work effectively and at pace with stakeholders should continue to be explored**

Among the changes to the Electricity Industry Act last year, the Authority is now able to impose terms or conditions on any exemption from the obligations under the Code. Together with voluntary initiatives such as guidelines, this highlights opportunities to work with the industry to trial low-intervention approaches in the face of changes and disruption. Such initiatives can use interactive ways of

Note: paragraph outdated, please see below paragraph

collaborating where parties can input and see results relatively quickly. In time, these approaches could more and more become the new way of working if found to be effective.

We note examples of “regulatory sandboxes” and are aware the Authority is reviewing its consultation and engagement processes and suggest the Authority continue to consider how it can most effectively draw from stakeholder expertise to tackle issues in a timely fashion, trialling different approaches, being willing to change in the face of new evidence, and using graduated responses proportionate to the nature of the issues identified.

## Collaboration and partnership

As noted above, a number of stakeholders felt there were areas for improvement in relation to engagement and collaboration. Indeed, this is an area highlighted in stakeholder perception surveys commissioned for the Authority’s annual report. We have discussed advisory groups above and cover relationships below (section 3.2.3) so focus here on consultation.

The Authority is required under the Act to consult on proposed amendments to the Code (unless exemptions apply). The Authority has a consultation charter and is currently reviewing its consultation and feedback processes as noted above. A number of stakeholders commented that the Authority had a clear consultation process. Others had questions in relation to the pace of the Authority’s processes and the effectiveness of options being raised beyond those put forward internally by the Authority. One stakeholder also noted that while there was broadly a common process, how this was applied by the Authority appeared to differ by issue without clarity why – sometimes there would be consultation on the issues, options, recommendations and resulting Code changes while others would consult on a proposal or at differing points in the process.

Stakeholders commented on inconsistency in how some projects are delivered and how engagement is carried out. In addition, there was a perception that there is a significant bias towards ideas generated within the Authority, with those raised externally unlikely to be progressed (although the Authority notes there are examples of the opposite case, particularly in relation to the Transmission Pricing Methodology work). This was often in the discussion of the Authority’s role, its levers, and how it works with others.

We and stakeholders noted the tension between seeking speed in decisions and actions, and stakeholders also wanting to be involved and having an opportunity to be engaged. A number raised whether the consultation process was the best avenue or whether other forums for engaging early and keeping updated and engaged through the process could support more effective and timely collaboration and engagement. A few stakeholders suggested workshops could be efficiently used to discuss issues and possible options in early stages of a project, to then inform a more targeted consultation.

Several parties suggested that the Authority could benefit from shifting from less policy-led (with ideas generated internally), to playing more of a market facilitation role, including trialling new regulatory arrangements, and working with stakeholders to enable innovation that serves the long-

term interests of consumers. This might see more of a focus on ensuring the Code supports emerging opportunities as well as monitoring, education and enforcing compliance.

A frequent area of comment in terms of improvement that was also noted in some of the submissions on the recent levy consultation was addressing the backlog of proposed changes to the Code and resuming the annual omnibus Code change process. Stakeholders commented that this had financial implications for businesses and that without this process, the industry is having to spend time on workarounds and cases of technical non-compliance as Code changes have not kept pace with technological advancements leading to some regulatory uncertainty. We also note that the Authority's review of its consultation and feedback processes also consider proposed changes in relation to amendments to the Code.

## Prioritisation

We understand that under the previous Chief Executive, a strategic decision was made to reduce the Authority's workplan and to focus on the delivery of key priorities and projects. The Authority later completed its Transmission Pricing Methodology and Real Time Pricing projects and implemented changes resulting from the Electricity Pricing Review. At a similar time, the Authority updated its strategy and strategic ambitions and focused on aligning its workplan with that strategy.

Discussions with teams within the Authority identified that in planning and budgeting processes, it applies a scoring/matrix to assess potential calls on funding with a two-step process, focusing first on the business-as-usual needs across the Authority's teams and then potential additional projects raised by teams. This process was also followed in developing the Authority's proposed changes to its levy funding that were consulted on late last year. The matrix has evolved slightly over time in terms of scoring (now with each criteria score on a scale ranging from 1 to 5) and includes:

Criteria	Weight
Strategic alignment	6
Maintaining day to day confidence in the system and rules	5
Benefits, including efficiency, effectiveness, cost savings	4
Legislative or sector obligations	3
Opportunity cost or risk of inaction	2

Source: summarised version of the prioritisation matrix provided by the Electricity Authority

Initiative templates are also used in the planning and budget process to capture key information about each. Interviews with teams within the Authority indicated that the planning and budgeting process was improving (although we note that planning was one of the lower performing areas in internal engagement surveys) and that there were opportunities outside the process for adjustments as information on areas of spending or pressures were updated. Further, improvements in the Authority's financial systems were expected to enable further improvements (we also discuss adaptation below). With no timesheet recording within the Authority (which is common across government agencies) and team members supporting a mixture of business-as-usual and project work, the ability to track efforts expended by internal staff on project work is somewhat blunt.

Outside the Authority, there is much less visibility over the Authority's prioritisation. A number of stakeholders indicated that they did not know how the Authority prioritised its work programme, and many commented that there is less visibility over its work programme than there used to be (before the shift to the strategy-led approach that followed its 2020 strategy reset). While stakeholders are always likely to have their own priorities given their respective roles, this appeared to be a genuine mix of some disagreement with areas of focus but also a lack of understanding of the reasoning behind why certain projects were prioritised, and the framework used to determine priorities. Some noted that if this information was available, more could be done to continue to reinforce and be clear in conversations with the industry. Another stakeholder indicated they felt it was quite clear that everything came back to an assessment against delivering on the Authority's main statutory objective.

Some stakeholders also had some negative comments about what the Authority has chosen to focus on and a lack of clarity on the link to long-term benefit for consumers. This may speak to how the Authority chooses to prioritise work, which needs to be clearer, as discussed earlier with respect to the need for a regulatory strategy. One stakeholder commented:

"When the EA comes out and makes decisions, we scratch our head, how did the EA get to thinking this is the most important issue? Why are they creating more uncertainty rather than resolving existing uncertainty?"

The same stakeholder said that they did not feel they could say with any certainty where the Authority would ultimately land on an issue, and there were similar comments from others. However, they felt that they could with the Commerce Commission and that in their view the Commerce Commission followed good regulatory practice, with consistent, predictable, and transparent processes. While a key part of the Commission's electricity sector work is in setting price-quality paths, which generally follow regular reset periods, these comments align with other themes we heard in our interviews.

We suggest it would be useful to be clear externally how the Authority prioritises its resources to support regulatory certainty and transparency (as noted in section 3.2.1 on leadership and direction, and the need for a clear medium-term regulatory strategy). This would also provide clarity of when the Authority may adjust from its original plan in response to unexpected pressures.

## **Execution and adaptation**

Many interviewed felt that execution has been an historic area of underperformance for the Authority, highlighting the time taken to see projects through (as noted above). For instance, Transmission Pricing Methodology (TPM) is an obvious example of something that some stakeholders commented "consumed the organisation". As noted above, the stop in the omnibus Code changes is another, while project execution was an increasing focus for the prior Chief Executive with subsequent delivery of the changes to the Transmission Pricing Methodology, Real Time Pricing and responding to the Electricity Pricing Review. Some stakeholders commented that since this time, it appears to them that the Authority had pulled back its investment in project management expertise internally. If true, the risk is that this could undermine gains in executing projects considering concerns raised around timelines.

We understand the Authority has:

- appointed one project coordinator as at early June 2023, with four further coordinator roles already in place
- identified it rarely runs projects of sufficient complexity to require project managers, with the most recent project manager leaving following the end of a key piece of network pricing work (from a peak of around four in early 2019). The Authority expects to use project coordinators to help manage workflow.
- engaged a project specialist to run a programme of targeted training, toolkits and project-specific interventions across the EA.

As noted, the Authority's (under review) consultation process is considered by most to be clear. Possible improvements could focus on timeliness, engaging early and keeping updated (for instance, a number of parties commented on the value of the regulatory managers' meetings, which have been paused since COVID), clarifying why variation on consultation processes are used, and exploring the use of different approaches to speed up and target.

In respect of adaptability, there are clear signs that the Authority can adapt when clear pressures or time-limited demands come up. Examples include Undesirable Trading Situations, the 9 August event, Tiwai and potential contracting inefficiencies, and the Electricity Pricing Review. Some of the need to adapt is driven by legislative requirements, some political/market confidence-driven, and some to realise an identified opportunity. As noted above, it would assist in regulatory certainty if the Authority had a clear framework for how it prioritises efforts, including broad criteria for adjusting as pressures arise.

### **Case study #3: ensuring regulations are responsive to technology changes**

A common theme through our stakeholder engagement was that the rules governing the operation of the electricity sector sometimes struggled to keep up with developments in technology and failed to promote innovation. Stakeholders highlighted that the prescriptive nature of the Code meant it became out of date as technology changed and that the Authority had shown little urgency in updating regulations.

The Code is highly prescriptive, which is often necessary given the severe consequences that could follow if unreasonable deviations in standards occur. However, with such a level of prescription comes a responsibility on the regulator to ensure that they are actively testing with stakeholders whether the Code remains fit-for-purpose, as well as investing in staffing capability to adapt the Code as required. Senior Authority staff acknowledged through this review that some areas of the Code are “way out of date” and that work is underway to make sure it is updated.

Ensuring the Code is future-focused should be a priority for the Authority. There are indications that the work to update the Code has not historically been prioritised due to competing demands and resourcing constraints. The lack of flexible and responsive regulation can create uncertainty for industry, potentially limit industry innovation and hinder the adoption of new technologies. Issues with the suitability of the Code may increase with the large-scale deployment of distributed generation and the increasing blurring of the boundary between distributors and retailers.

#### **Extending energy storage systems’ scope to offer instantaneous reserve**

Energy storage systems, specifically large electrochemical batteries, have historically been able to participate fully in the energy market and to offer instantaneous reserve in the form of interruptible load, but have not been able to offer instantaneous reserve by discharging, which is a form of generation reserve. This is because, until 2022, the Code defined the specific technologies that were permitted to offer generation reserve and those definitions were historically written for extant hydro and thermal machines, before energy storage systems were contemplated. The Authority acknowledged that emerging new technologies were not intentionally barred from providing instantaneous reserve and that their prohibition was an inadvertent consequence of the strict requirements in the Code.

The lack of flexibility within the Code on the treatment of batteries gained visibility when the Authority made an interim Code clarification in 2018 that permitted battery owners to make energy offers in the wholesale market. Batteries were also able to provide instantaneous reserve while charging, referred to in the Code as interruptible load. The Authority then consulted in April 2021 on permitting battery owners to make instantaneous reserve offers by a discharging battery and issued its final decision in March 2022 that a more permissive approach under the Code should be adopted.

#### **Definitional issues around solar generation**

One example raised during submissions was that the Code’s rules did not reflect industry practice in relation to photovoltaics (PV) used in solar generation. We are



advised there are widespread technical breaches of the Code for new PV installations and that, Confidentiality

Issues raised for solar distributed generation included unclear Code definitions, including with respect to common quality standards being applied to all technologies, the definition of an embedded generator (and identifying the grid injection and exit points), the definition of the point of connection to a local network, and concerns about larger generators/users being compelled to offer supply if they make large-scale investments.

In April 2023 the Authority published an issues paper, where it acknowledged that “currently, the common quality requirements of Part 8 may disadvantage some evolving technologies, particularly inverter-based resources”. One stakeholder highlighted this as an example of trying to make new technology fit into the current Code paradigm – the Authority was laudably addressing one problem (common quality requirements), but was not taking a first-principles examination of how to ensure regulation supported uptake of new technologies. In other words, this was an example of ‘whack a mole’, whereby the Authority addresses specific issues with the Code but misses a broader opportunity to move to outcomes-regulation and an environment that is fully supportive of the utilisation of new technologies. The Authority acknowledges the importance of adopting a first-principles approach to reviewing the extent to which the Code’s common quality requirements appropriately enable technologies. This was outlined in the most recent consultation.<sup>16</sup>

#### **Exempting small-scale distributed generators from registering as participants**

The Act requires all electricity industry participants to register with the Authority. Under the definitions in the Act, this requirement includes owners of small-scale distributed generation, such as homes with rooftop solar, and those who own their own metering equipment.

The Authority was pragmatic in not strictly enforcing this requirement, which would have imposed significant costs for little benefit. It recognised that enforcing the letter of the law would impose unnecessary costs on small participants and might discourage consumers from installing their own small-scale distributed generation. Of note is the length of time it took to address this issue. Exempting a certain class of participants from having to register can only be done through regulations under section 110 of the Act, which requires they be made by the Governor General on the recommendation of the Minister of Energy and Resources (Minister) after receiving a recommendation from the Authority. In this instance the Authority consulted the industry in July 2019, made a recommendation to the Minister in July 2020, Cabinet approved the exemption in October 2021, regulations were drafted by December 2022, and the exemptions came into force in January 2023.

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<sup>16</sup> See from para 2.22: [Long-form report \(ea.govt.nz\)](#)

### 3.2.3 Relationships

Here we briefly consider relationships with the Minister and MBIE, the sector, consumers, Transpower and the Commerce Commission. Many of the stakeholders noted that relationships require efforts from both sides and that in many cases there was more that each party could do to improve relationships. It was also acknowledged that the Authority is in a difficult position as an independent regulator. Its role will at times require actions that might not be in the best interests of the other party, given the need to serve the long-term interests of consumers. Nonetheless, if decisions and perspectives are understood and well managed, this can assist with building relationships.

#### Minister and MBIE

As an independent Crown entity, the Authority's relationship with the Minister and MBIE is different to those of other Crown entities, such as Crown Agents. Nonetheless, our work suggests the Authority should work to develop these relationships, focusing on building trust while maintaining its independence.

A real challenge for the Authority is both performing its statutorily independent role while being cognisant of government priorities. The Authority notes that its current leadership have been working hard to ensure it is engaging well and in a timely manner with all government stakeholders. The current Chief Executive has indicated that she is working closely with MBIE to foster a strong working relationship, both in terms of MBIE as its monitoring agency and MBIE in its role relating to energy policy. MBIE and the Authority are also part of the Council of Energy Regulators (along with the Commerce Commission, Gas Industry Company, and the Energy Efficiency and Conservation Authority), which was established to help provide a stewardship function in the electricity and gas markets. The Chief Executive states they are currently considering how to make best use of this forum.

A number of stakeholders commented on the importance of the Authority's independence, noting the likely pressures from Government, and some suggested the Authority needed to be more confident in itself and the independence of its role and do more to get ahead of challenges to the industry to ensure the industry's performance (and expectations around its performance) was well understood. Others commented that they felt the Authority's independence and management of this was a strength, indicating that either way people noted the Authority's independence was important.

#### Sector

We have discussed some of the potential areas for improvement above in relation to collaboration and engagement, including the use of advisory groups. A number of individuals interviewed felt there were good signs that relationships with the sector should improve. However, many felt more can be done to ensure genuine, timely and effective engagement with the sector. Reinstating the regulatory managers' meeting appears to be a potential easy win. One stakeholder suggested that having an assigned relationship manager at the Authority for key stakeholders/participant types would also help, something which is done at other agencies such as the Commerce Commission.

The latest Kantar stakeholder perception survey highlighted the following potential areas for improvement (with indication relative to past survey noted):

- Provide greater regulatory certainty – “technology moving faster than the rules” (enduring theme).
- Build capacity and capability of staff – given churn and loss of institutional knowledge (new theme).
- Strong future focus – the need to be agile and able to adapt to an evolving environment (enduring theme with greater prominence).
- Greater collaboration with industry – meaningful and sincerely (enduring theme with greater prominence).
- Increased pragmatism – greater consideration of real-world impact beyond theory (enduring theme).

## Consumers

With the recent changes to the Act in relation to the additional statutory objective, the ability and need to engage with consumers or consumer advocacy groups like the Consumer Advocacy Council (CAC) will be particularly important. We understand that the Authority has or is establishing relationships with Consumer NZ, the CAC and MBIE’s energy hardship panel. We note that some of the submissions on the recent levy changes commented in support of investing in this area.

## Transpower

A number of stakeholders noted that the relationship with Transpower, mainly in its role as the system operator, has been challenging for some time. However, there were comments of signs of improvement following reviews around the 9 August event and collaboration in implementing changes to the Transmission Pricing Methodology and shift to Real Time Pricing.

Some felt the relationship was not helped by the contractual arrangements with what was a monopoly provider of system operations under statute and suggested clearer allocation and joint responsibilities were needed. Instead, they suggested the Authority’s role should be more of a governance role rather than service contractor for system operation. Management of the Transmission Pricing Methodology changes was also pointed to as an instance where Transpower, in this case as grid owner, would implement the changes but there was little collaboration until later stages of this work (i.e. in the last two to three years of the project).

It was suggested the two entities seem to be at cross-purposes, which could stem from fundamentally different world views. Many noted the Authority’s fundamental belief in market mechanisms, while the system operator is more driven by reducing uncertainty (confidence in assured supply) especially on peaks, and the grid owner is focussed on how it can deliver transmission and allocate the costs of this. The system operation relationship is a particularly important one where we understand effort is being invested to improve. The relationship is currently anchored around the System Operator Service Provider Agreement (SOSPA) and system operator documents that are incorporated under the Code.<sup>17</sup> There has been some recent improvement, though a continued focus is needed to ensure they are not continuing to talk past each other.

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<sup>17</sup> For more information see: <https://www.ea.govt.nz/projects/all/system-operation-documents/>

We expect the Future Security and Resilience workstream, treatment of proposed Code changes, and the role and operation of the Security and Reliability Council will be important areas of work for the Authority as it continues to develop its relationship with the system operator. We also note the Market Operations Committee (previously the System Operations Committee, a Board sub-committee) also has an important role in overseeing the MOSP and system operator contracts.

## **Commerce Commission**

Historically, there have been some grey areas in terms of responsibilities between the Authority and the Commission. This relationship also appears to have been tested at times, with some stakeholders suggesting the focus on the TPM had the potential to be interpreted as intervening, almost in suggestion that the Commission was not doing enough.

We expect there will be an increasing need for the Authority, the Commission and MBIE to work together to support future shared objectives. This collaboration will be important in light of the medium-term dynamics (discussed in the following section) regarding increased complexity and the recent legislative amendment to manage concerns about the potential for overlap with respect to distribution networks. Work towards the Energy Strategy will be an important avenue to work together, as well as in relation to the Authority's work around distribution pricing in particular. We heard of efforts in the last six months to improve inter-agency communication from staff at the Authority and the Commission. The Authority notes that regular meetings have been reset at various levels of the organisations, and they intend to continue evolving this.

### **3.2.4 Personnel development**

#### **The Authority's staff turnover rate has been materially higher than comparable organisations**

The Authority has experienced high staff turnover, with staff turnover rates of 39 per cent in 2021/22 (up 10 percentage points from 2020/21) and 30 per cent in 2022/23. We note the figure will be higher in some areas within the organisation than others. While this occurred in a tight labour market and in the aftermath of COVID-19, the 2021/22 rate is considerably higher than most other public sector agencies.

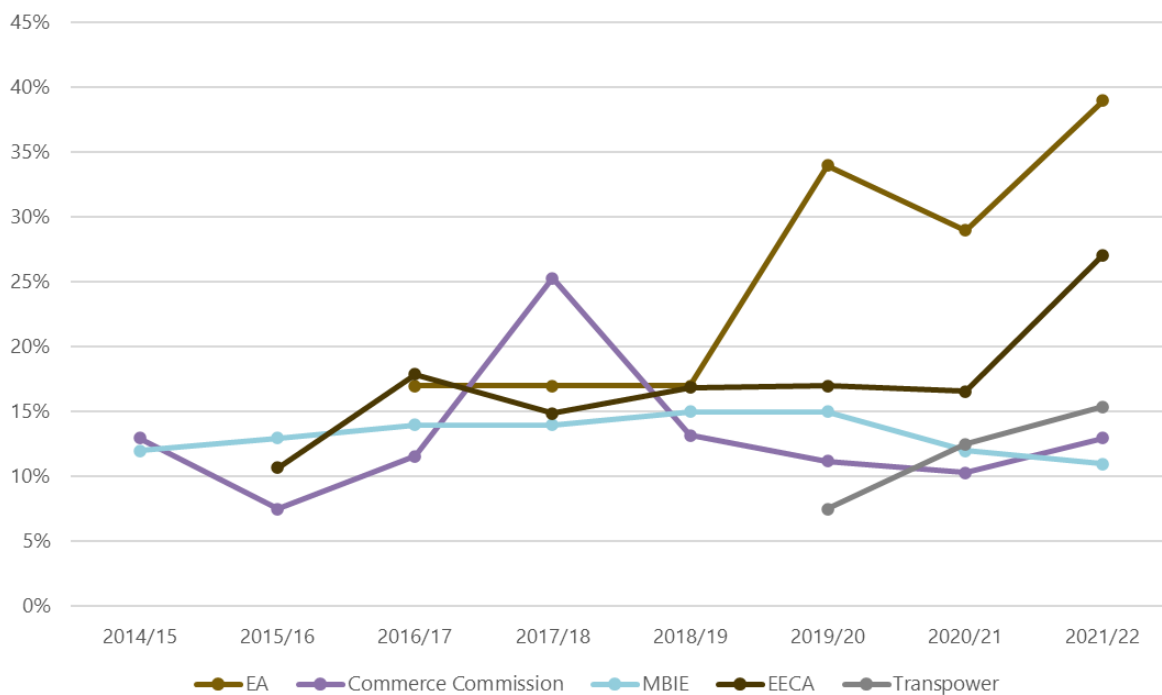
This staff turnover discrepancy was noted in some of the submissions to the Authority on its recent levy increase. One submission noted that the Authority's turnover of 39 per cent was higher than the public sector average of around 17 per cent. That submission provided a time series of staff turnover for the Authority relative to the Commerce Commission and MBIE (agencies it considered most comparable) to highlight this discrepancy. We have set out our own time series of Authority staff turnover rates compared with rates in MBIE, the Commerce Commission, EECA and Transpower in Figure 6 below.

From 2018/19, the Authority had a steadily increasing turnover rate. This turnover rate was materially greater than the other four agencies' rates over the last three years. Prior to 2018/19, the staff turnover rates were roughly equal. This may suggest that changes at the Authority over the last three years have been associated with greater staff turnover than comparable organisations, though we

note EECA experienced a similar turnover increase from 2020/21 to 2021/22 (with prior information not available).

Some level of turnover may be expected through a change process. In this review, we did not seek to interview former staff to understand their reasons, and our document review did not include any material such as exit interviews. However, our interviews with internal and external stakeholders provided some perspectives, including a few who were concerned that the high turnover has led to negative impacts on the level of sector knowledge, evident in their interactions with staff. Internally, staff suggested that the public sector wage freeze was a key driver, with people leaving to other roles to seek higher pay. A couple of external stakeholders wondered if it could be related to the higher proportion of policy people who perhaps have a greater tendency to move between government agencies than people with sector or technical backgrounds.

Figure 6: Comparison of Authority annual staff turnover (%) with MBIE, Commerce Commission, EECA and Transpower



Source: Annual reports, publicservice.govt.nz, parliament.nz

### There are signs of greater focus on staff engagement and internal people development to manage turnover risk

There is evidence of recent activity to reduce high staff turnover. During the time of our review, the Head of People and Capability had been acting on the SLT (now permanently there as GM Strategic Communications and Engagement) with their substantive role backfilled by a contractor, suggesting a conscious focus to improve by improving visibility at SLT. The Authority has developed workforce and wellbeing strategies, provided one-off payments to staff as remuneration for their work, improved its office working environment (with a relocation and consolidation of the organisation to one floor), and is ensuring development opportunities are available to staff.

The Authority conducts annual staff surveys to provide insight into the organisation and to understand possible improvements. The surveys enable staff to anonymously score the Authority on certain aspects to provide feedback. So far, there have been two of these surveys.

Between the survey in 2021 and the survey in 2022, there was significant improvement across all 15 aspects of the organisation. The aspects increased by an average of 6 percentage points. Assuming the surveys and their participants had no biases, this reflects improvements to the Authority's staffing and organisational operations. The Authority states it is making improvements to the work environment based on the annual survey and other feedback from staff.

The Authority's Workforce Strategy has increased opportunities for staff development. The Strategy has focused on equal employment opportunities, flexible working options, and individual development plans. This focus is aimed at improving staff opportunities, and as a result, outcomes for the Authority.

In addition, the Authority has invested in a new recruitment platform to better equip hiring managers to improve internal hiring, rather than going directly to hiring agencies. Hiring managers have been trained to recruit new, and develop internal, candidates in a way that supports the Authority's investment in culture, diversity, and capability.

This focus on internal hiring was evident in a quote from one stakeholder:

"[the Authority] has done a lot of progression planning in teams...giving people growth, development, strength, showing they value input and retaining institutional knowledge."

The benefits of this investment include improved collaboration, progression, and retention of staff. Going forward, the Authority must continue this focus on workforce retention. It must be clear on skill requirements for roles so that staff expectations are met, and workers are correctly matched to their skills.

## **Recruitment challenges and the need to balance sector knowledge, generalists and consultants**

We heard from internal and external stakeholders that recruiting across the sector is difficult – and this may be a challenge for the Authority to be conscious of given the request for significant funding to scale up. One market participant explained that they were grappling with this from a combination of effects related to COVID-19 (including border restrictions) coinciding with a period of end-of-life assets, with significant renewal work ahead, plus work related to recent storms and resilience.

There may be similar but different challenges with hiring policy people given the tight labour market and competition with other government agencies, particularly in Wellington. There were a couple of comments from external stakeholders about the small size of the pool of capabilities in New Zealand and the need to seek capability from overseas. The Commerce Commission was cited as an example of a similar organisation that appears to successfully use this as a strategy. Internally, staff told us that the Authority used to have a "healthy exchange" with Ofgem (UK), though this was impacted by COVID-19. In early 2023, the Authority became an "Accredited Employer" under Immigration New Zealand, meaning it can now support overseas applicants on or with their visas.

Interviewees commented that the Authority needs to have the right balance of sector knowledge, policy generalists, and use of consultants, although it was unclear what the right balance may be. Comments included that the Authority had poor technical and sector capability, and little understanding of economic regulation (in relation to the Commerce Commission's remit).

For context, expenditure on external advice was \$6.5 million in the 2021/22 year, with an additional \$1.2 million spent on external programmes. This figure compares with the Financial Markets Authority's \$3.3 million of expenditure on contracted staff, and the Commerce Commission's \$9.3 million on consultants (noting \$4.2 million of this was allocated to legal consultants) for the same year. Both of these entities have significantly more staff than the Authority, and given differences in categorisations we note these are broad comparisons. Section 5.2.7 covers benchmarking in more detail, though we note it shows aggregate outsourcing costs, with external advice/staff contracts representing only a portion of the figures presented. For the Serious Fraud Office, which has slightly fewer staff than the Authority, the aggregate outsourcing cost is smaller at around \$700,000,

Many external stakeholders perceived that there has been a shift in recent years from technical experience towards a greater proportion of policy generalists. Some acknowledged that general skills are important (such as strong communication skills, the ability to problem-solve – given complex challenges ahead, and writing skills – with the need for shorter papers). However, many thought that the Authority lacked sector knowledge, impacted by recent turnover. One stakeholder added that there was "high value" in getting people that know how the sector works, though noted it was more important to get breadth (not necessarily all staff need electricity sector experience) and that a portfolio management approach could be what they need. High turnover, combined with what we heard to be poor knowledge management discipline within the organisation, suggests that this is an area that the Authority may need to focus on.

Alongside skills and knowledge, one stakeholder interviewed emphasised that the mindset of staff would also be particularly important in being able to consider in light of medium-term dynamics to consider sector-wide issues in a changing environment with significant advancements in technology and innovation.

Stakeholders also thought that consultants are needed, given the nature of some expertise, but the Authority needs to ensure it has reasonable capability and capacity within permanent staff. At the same time, the Authority needs to have the right processes and systems to ensure that this knowledge is transferred and maintained. One person commented that it seemed to be the same consultants being used, and while those consultants were good, it was the same views being perpetuated and there is a need for diverse perspectives. Another made the point that while they themselves use consultants, it is crucial to ensure that they are used well:

"Consultants are good for a specific set of expertise, for a defined scope, time. Not for business-as-usual – need internal capability for that."

People and Capability advised us that they intended to carry out a talent matrix exercise in the coming months, which will be an important step to determining the right balance and key gaps.

### 3.2.5 Financial, resource and information management

Below we discuss the Authority's current systems, recent investments and risk management practices and areas for potential improvement across these.

#### **There has been recent investment in finance, IT and data management, but there are gaps in information management**

In general, the Authority appears to have actively invested to improve its systems and processes in finance, IT, and data management, although there are some gaps in knowledge and information management. Many of these changes that staff told us about are relatively new, occurring in the last year or so, although the sentiment was that the changes underway were largely positive.

For instance, the Authority has replaced some manual finance processes through investment in a new financial management system, and introduced processes around levy calculation and budgeting which look to be improving to harness this technology. The IT support services were also formerly shared with the Commerce Commission through a historical arrangement, which was not working for either party, and has since been contracted to Datacom.

Staff and leadership are well aware of gaps in knowledge and information management practices and processes. This was evident through our interviews and our review of documents from the Authority. A Public Records Act audit report by KPMG for Archives New Zealand (Archives) in June 2022 found that the Authority was at the lower end of the information management maturity scale. It made 20 recommendations, with Archives suggesting the Authority prioritise eight across the categories of information management governance, self-monitoring activity, capability and capacity, information creation and disposal.

In its own assessment, the Authority advised us that its information management systems in relation to documents are relatively immature, though work is underway to address this. In contrast, its data management systems are in good shape with "world-class, fit-for-purpose technology stack" it has built over the last few years. This makes use of cloud-based software and platform as a service tools, with Azure Databricks and Delta Lakehouse data science platform, with key users being the Data and Information Management, Monitoring and Compliance teams.

#### **Data exchange and reconciliation may be areas for efficiency gains**

External stakeholders thought that data exchange processes presented an opportunity for improvement. A couple of market participants told us that there was a need to upgrade registry functionality/central data exchange processes, so they are a more complete repository for information needed across the sector. Further, the Authority notes it uses a number of different portals that participants must navigate. We note that these may present opportunities for efficiencies for all users (including market participants and the Authority) but would likely require upfront investment in order to realise the efficiencies.

It was also suggested that there may be an opportunity to simplify and integrate market and network reconciliation. Stakeholders explained there was some duplication and complexity of processes, citing how the market reconciliation is run separately to network reconciliation in New Zealand, while in



Australia, network changes are based on the same data and processed via the Australian Energy Market Operator.

We suggest opportunities for removing duplication and exploring consolidation be considered further.

## **Staff feel resource-constrained in addressing data and information governance shortcomings**

Staff felt that they have not been able to progress planned changes to improve data and information governance gaps in recent years due to resource constraints across the organisation.

The Authority, like some other state agencies, uses iManage for its information system. Confidentiality

Confidentiality

The Authority engaged consultants to provide advice on setting up a data governance regime in 2020. However, staff similarly describe a sense of under-resourcing which has limited progress on this, with a need to catch-up on gaps in systems and processes which is being traded off against business-as-usual and project commitments.

There appear to be mixed views of the main problems underlying its poor information management. Some staff interviewed expressed frustration with iManage, while a few others suggested the issues around its information management relate more to a lack of discipline around information and document management, and handover practices.

Together these challenges around information management will be particularly important for the Authority to address. We heard comments that where documents have been requested from the Authority, documents were slow to be identified and passed on through. The Authority also faces well-resourced participants. With high turnover of staff and the proposal to increase the size of the Authority, it will need to ensure it prioritises training, processes, and structures to promote and enforce good information hygiene, to mitigate loss of institutional knowledge and to be prepared for possible litigation.

## **Risk management processes are in place, though practices could be improved**

The Authority has a risk management framework that includes strategic, organisational, health and safety, financial, and business continuity risk. The framework states how the Authority is organised to manage risk and includes practical processes and tools to do so. The Board, SLT, and all individuals at the Authority are responsible for ensuring risk is managed effectively.

The Authority's risk management approach is guided by five principles. Risk management activities must be:

- dynamic and responsive to emerging and changing risks
- proportionate to the level of risk
- aligned with the statutory objectives
- transparent and inclusive
- facilitate continual improvement of the Authority.

The Authority produces four-monthly reports to MBIE and the Minister as part of its output agreement. The four-monthly reports include a summary of output performance (against the performance measures stated in the Statement of Performance Expectations) and progress against the Annual Corporate Plan. They also report on strategic risks on a “by exception” basis. The section on progress against the Annual Corporate Plan is documented on the Authority’s website. Together, these sections provide insight into the risks that the Authority faces in its operating environment.

While the Authority’s risk and mitigation reporting appears to have improved and evolved over the last five years of four-monthly reports, there is room for further improvement in its reporting and internal culture towards risk management. In its 2020 four-monthly reports, following a review of its risk approach, the Authority changed its reporting which included introducing links to its strategic goals, removing its reporting of risk targets to provide the current and preceding rating only, and using a more granular risk scoring matrix. However, we found that it was often unclear and difficult to understand how effectively risks were being addressed in the four-monthly reports. For instance, the trail of mitigations, the status of mitigation actions, which controls are or are not working, what additional steps might be needed, and the incremental change in risk was unclear. In interviews, staff also suggested to us that while the risk management framework had been implemented, in practice the culture and the “doing” could be improved.

Risk management in relation to commercial contracts was also identified as an area for improvement in the April 2023 IQANZ audit of the Authority’s Commercial team. The review highlighted that for MOSP contracts, there was “no systematic method for recording and tracking risks” that have been identified. It noted that the Authority is over-reliant on individual commercial contract managers and suppliers to ensure the risks are managed and issues resolved. Solutions to improve risk management regarding major suppliers include a risk workshop for these suppliers and creating a central risk register. We note that the Authority has agreed with and is considering the recommendations.

### 3.3 Section recommendations

**Recommendation 1(a)** for the following areas for improvement, **develop plans** to address these:

*Tier 1: the most significant matters for the Authority, important for meeting statutory objectives*

1(a)(T1i) There needs to be improved confidence in future reliability by addressing winter peak concerns, progressing the Future Security and Resilience work programme, and optimising working arrangements with the Security and Reliability Council and system operator. The Authority notes this is all currently under action.

1(a)(T1ii) The relationships between the system operator, MBIE, the Commerce Commission and the Authority need to improve in maturity with collective responsibility for the electricity sector and agreed inter-agency roles, accountabilities and boundaries, including shared responsibility for efficiency and management of risks.

1(a)(T1iii) Raise the strategic outlook of the regulator to being long-term (10 years) with a three-year planning horizon.

1(a)(T1iv) Clarify the link between strategy and work programme, including prioritisation framework and when different levers or approaches will be used (e.g. market facilitation, education, review of Code, enforcement), clarify boundaries of the Authority's role and on what and how it will work with others, and develop medium-term regulatory strategy.

*Tier 2: significant matters for the Authority*

1(a)(T2i) Address staff turnover and improve staff capability – appoint key positions, fill key skill gaps, and improve culture (allocation of roles and responsibilities, including reviewing delegations, risk tolerance, and operating models; and progress review of consultation and engagement processes with a view to improving perceptions of authenticity and timeliness) and ensure there is sufficient technical capability whether employed, contracted or shared with the industry.

1(a)(T2ii) Address backlog of Code changes (short term) and, in slower time, review and modernise the Code to make easier to engage with and enable greater flexibility to update standards. To achieve medium term objectives, there might need to be a Code override.

1(a)(T2iii) Improve understanding of the links between projects, their resourcing demands and organisation planning and strategy, from team involvement in undertaking projects to the likely implications of addressing recommendations resulting from initial reviews.

1(a)(T2iv) Work on key relationships, assigning senior points of contact for key stakeholders, and considering resuming regulatory manager meetings.

1(a)(T2v) Review where processes could be more agile and innovative and identify continuous improvement programmes. For instance, leveraging opportunities to improve data exchange processes and considering whether there are opportunities to integrate market and network reconciliation.

*Tier 3: more discrete issues we suggest should be more easily addressed by the Authority*

1(a)(T3i) Improve culture of review and engagement. This should also extend to the application of risk management practices.

1(a)(T3ii) Improve knowledge management practices.

1(a)(T3iii) Provide a helpful IT environment.

**Recommendation 4: After a short period (such as 3-5 years),<sup>18</sup> review whether the governance of, and the Authority's commercial approach to managing, the system operator contract are delivering anticipated benefits.** This would be considered relative to whether, given the legislated nature of this arrangement,

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<sup>18</sup> Depending on the timing of the system operator contract negotiation and other relevant work.

alternative models that encourage greater partnership or alliance and/or different forms of oversight should be considered if benefits have not been observed and are not expected.

## 4. Medium-term dynamics relevant to the Electricity Authority

In this section, we set out the:

- key medium-term dynamics relevant for the electricity sector and the high-level implications of these dynamics, including the steps needed to decarbonise our energy system
- resulting changes that will need to happen in the regulatory system to assist with that change and leverage improvements in technology, focusing on the implications for the Authority in order to support the long-term interests of consumers.

### 4.1 Key medium-term sector dynamics

Many discussions about medium-term electricity industry trends highlight the **transition to a low-emissions economy** and the **role of new technology**.<sup>19</sup>

The Energy and Industry chapter of Aotearoa New Zealand's **Emissions Reduction Plan** (ERP) includes the following focus areas and underlying actions (with emphasis added):

1. Use energy efficiently and manage demand for energy – with implication for demand for electricity
  - a. Action 11.1.1: improve business and household energy efficiency
  - b. Action 11.1.2: improve the state sector's energy efficiency and fuel switching
2. Ensure the electricity system is ready to meet future needs – with implications across the electricity sector
  - a. Action 11.2.1: **accelerate development of new renewable electricity generation** across the economy, including developing regulatory settings for offshore renewable energy
  - b. Action 11.2.2: **ensure the electricity system and market can support high levels of renewables**, noting the EA and Transpower's programme of studies and solution to address challenges and opportunities
  - c. Action 11.2.3: **support development and efficient use of transmission and distribution infrastructure** to further electrify the economy, including implementing the new TPM, updating electricity distribution network regulation, investments in network capacity and measure to a flexible energy system.
3. Reduce reliance on fossil fuels and support the switch to low-emissions fuels – with implications for the electricity supply mix and security of supply.
  - a. Action 11.3.1: manage the phase-out of fossil fuels

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<sup>19</sup> For instance, see New Zealand Infrastructure Commission (2021), Electricity Networks Association (2022), Kristov (2019), and McKinsey Sustainability (2020).

- b. Action 11.3.2: develop low-emissions fuels
4. Reduce emissions and energy use in industry – with implication for demand for electricity
    - a. Action 11.4.1: decarbonise Aotearoa industries, as part of the energy strategy including ensuring competitive energy prices and security of supply
    - b. Action 11.4.2: develop an approach for single-firm industries with emissions that are hard to reduce or remove
  5. Strategic approaches and targets to guide us to 2050 – with implication for electricity demand and supply
    - a. Action 11.5.1: set targets for the energy system, relating to renewables
    - b. Action 11.5.2: develop energy strategies for Aotearoa, which includes how to manage pathways to ensure that
      - i. in addition to becoming more sustainable, our energy system is accessible and affordable, and secure and reliable, including in the face of global shocks
      - ii. energy systems support economic development aspirations and an equitable transition to a low-emissions future

The ERP also references the role of the Authority in relation to helping the energy and industry sectors adapt to the effects of climate change, specifically looking at how to ensure the electricity system remains secure and resilient as it evolves in the coming decades.

As MDAG notes, there is always uncertainty in forecasting but (emphasis added) “all forecasters agree that **demand will rise** as electricity increasingly powers New Zealand’s transport sector and industry” (Market Development Advisory Group, 2022, p. 39). MDAG’s Issues Paper projected energy demand to grow by around 33 per cent between 2020 and 2035, and a further 33 per cent in the following 15 years. This is broadly in line with Transpower’s estimate in 2020 that by 2050 there will be a 68 per cent growth in electricity demand under its base case of accelerated electrification given pressures to decarbonise (see Transpower (2020)).

The Electricity Network Association’s (ENA’s) “Powering Up for change” April 2022 overview notes changes in newly affordable technologies and consumer behaviour/preferences, identifying the following “megashifts” (with emphasis added):

1. the requirement to meet climate change objectives, which can be achieved largely by **switching energy use to renewable electricity**;
2. **new consumer technology**, which is increasing the options for consumers to produce and store electricity, as well as use electricity in new ways; and
3. the **rise of prosumers** who actively engage with their electricity supply.

## 4.2 Implications of these dynamics

ENA also anticipate that **networks will be more complex** bringing the following challenges (noting expected benefits for the climate and consumers nonetheless):

- Two-way flows of power rather than just one-way, creating new safety and technical demands.

- Greater complexities in balancing supply with demand every second to ensure quality of supply and reliability.
- Greater peaks and troughs in demand – for example, from the mass uptake of electric vehicles or small-scale solar generation.
- New technologies which will give consumer more choices in how they generate and consume power (see Electricity Networks Association (2022)).

These dynamics are likely to support new and more diverse energy technologies and business models for sources and uses of electricity. For instance, MDAG highlights the system is becoming far more decentralised and diverse, with Transpower estimating there will be 3.9 million distributed energy resources across the system by 2035 (Market Development Advisory Group, 2022, p. 17). This could see the rise of the behind-the-meter market as discussed for instance in Kristov (2019). This diversity could well lead to increased information and data flows, particularly with greater two-way flows of electricity.

MDAG emphasises these shifts need to be considered in the context of the energy trilemma – with overarching goals of energy sustainability as well as reliability and affordability, noting that “moving to highly renewable supply will have major implications for future security and resilience of the power system in (or close to) real time.” MDAG’s Issue’s Paper identified the following implications for *market design*, having concluded the continued need for a wholesale market, of a 100 per cent renewable supply on the electricity system (emphasis added):

- (a) **Real-time coordination will become more challenging** and make an effective spot market even more important;
- (b) The **types and quantities of ancillary services will need to change** to maintain secure supply;
- (c) **Accurate spot price signals will be crucial** for demand-side, contracting and investment incentives;
- (d) **Demand side flexibility will become more important;**
- (e) **Contracts market will have to do more ‘heavy lifting’;** and
- (f) **Sufficiency of competition will be vital**, particularly in flexible supply.

Source: Market Development Advisory Group (2022, p. 34)

MDAG sets out five pre-conditions that it suggests need to be satisfied:

- (a) Wholesale prices reflecting real supply and demand conditions, including very high prices in times of scarcity;
- (b) Confidence among wholesale buyers and sellers that the high prices make sense (which means confidence in the structure and rules of the market, including the sufficiency of competition);
- (c) Availability of ‘tools’ for wholesale buyers and sellers to manage their exposure to those spot price risks;

- (d) General public and political acceptance that volatility and high prices (in times of scarcity) in the wholesale market are, in fact, in the best long-term interest of consumers, and that measures to 'soften the landing for unhedged participants' can trigger a vicious circle of undermined investment incentives and higher future prices; and
- (e) Confidence among consumers/politicians that investment will be timely and competitive.

Source: Market Development Advisory Group (2022, p. 34)

The Future Sustainability and Resilience Roadmap (Electricity Authority, 2022e) also identifies expected opportunities and challenges and their expected timeframes and priority as shown in Figure 7, and identifies the key interdependencies and dependencies as shown in Figure 8.

Figure 7: Opportunities and challenges identified in the FSR Phase 1 report

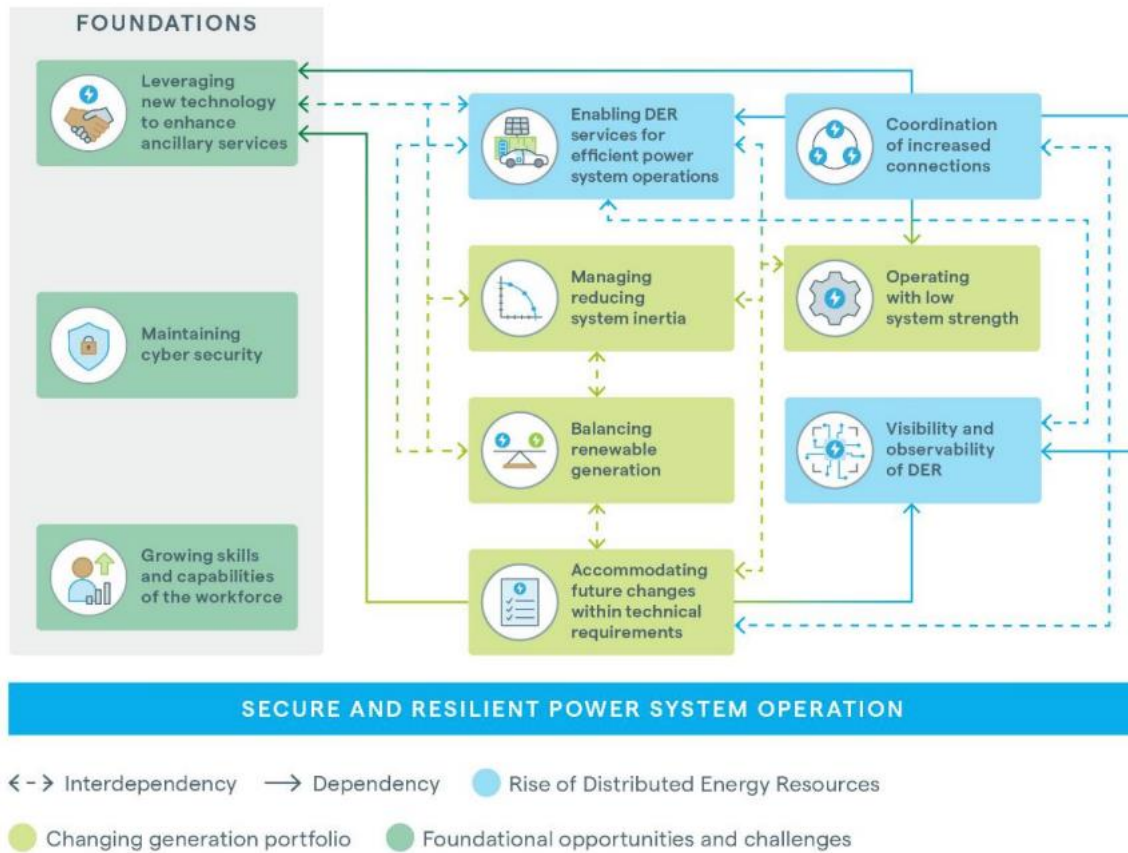
Opportunities and challenges	Timeframe	Priority
 Enabling DER services for efficient power system operations	3-7 years	● Medium
 Visibility and observability of DER	3-7 years	● Medium
 Coordination of increased connections	0-3 years	● High
 Balancing renewable generation	3-7 years	● Low
 Managing reducing system inertia	7-10 years +	● Low
 Operating with low system strength	3-7 years	● Medium
 Accommodating future changes within technical requirements	0-3 years	● High
 Leveraging new technology to enhance ancillary services	Enduring	● Medium
 Maintaining cyber security	Enduring	● High
 Growing skills and capabilities of the workforce	Enduring	● High

● Rise of Distributed Energy Resources   
 ● Changing generation portfolio   
 ● Foundational opportunities and challenges

Source: Electricity Authority (2022e, p. 4)



Figure 8: Opportunities and challenges and their interdependencies as identified in the FSR Roadmap



Source: Electricity Authority (2022e, p. 9)

### 4.3 Implications for electricity regulation and the Authority

We highlight below the possible implications of these medium-term dynamics for electricity sector regulation based on key work undertaken to date and then turn to what this may specifically mean for the Authority.

In *Ināia Tonu Nei*, the Climate Change Commission’s recommendation 20 includes:

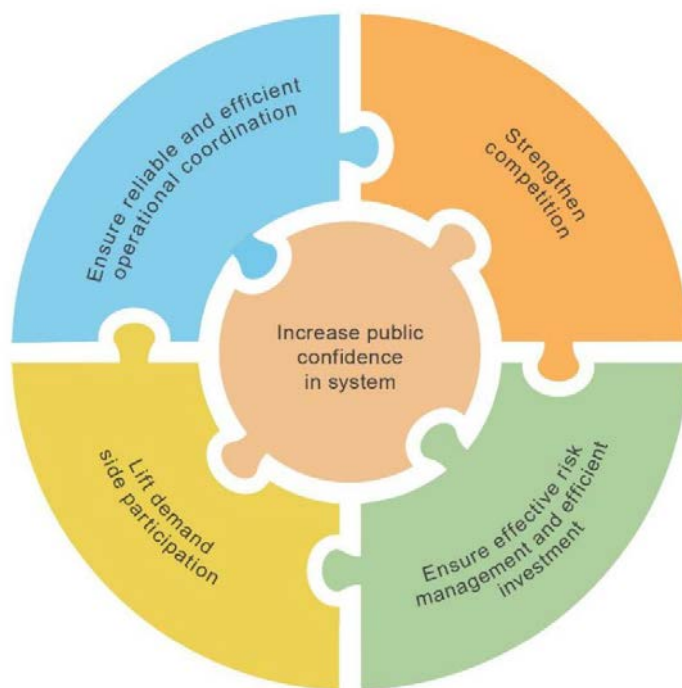
“3. Supporting the evolution to a low-emissions electricity system fit for technology evolution. This should include work to increase the participation of distributed energy resources including demand response, and determining whether lines companies can integrate new technologies, platforms and business models by:

- a. Assessing whether they have the necessary capacity and capabilities to support climate resilience and the transition.
- b. Evaluating whether the current regulatory environment and ownership structures of lines companies are fit for future needs.

4. Designing regulatory settings that meet the needs of diverse communities, ensuring that they enable independent and distributed generation, especially for remote, rural and Māori communities.” (Climate Change Commission, 2021)

In December 2022, MDAG included in its options paper for price discovery in a renewables-based electricity system over 40 proposed changes across a number of dimensions for feedback. It set out the options it had identified, those it supported or partially supported, and how they compared with recommendations from the Authority’s wholesale market review and Boston Consulting Group’s report “Climate Change in New Zealand: The Future is Electric” (2022). It also included an indication of the role it saw the Authority playing in progressing the option – either in changing the Code, co-design or market facilitation, or a hybrid that could involve co-design but also preserve a direct regulatory backstop. These options fall under the five areas of action set out in Figure 9, and are summarised in Figure 10.

Figure 9: MDAG’s five key areas for future action



Source: Market Development Advisory Group (2022, p. 16)

Separate to the summary figure, MDAG also:

- provided proposed timing and sequencing of measures, and
- noted that while some measures may be able to be supported through the reprioritisation of efforts within the Authority, further resourcing would likely be required to support the full span of measures under the proposed timing.







































Figure 10: MDAG's proposed measures and process for implementation





TOPIC	CODE	MEASURE	MDAG	WMR	BCG	CODE	CO-DESIGN	HYBRID
Reliable and efficient operational coordination	A1	Improve short-term forecasts of wind, solar and demand				✓		
	A2	Strengthen governance for next phase of FSR project				✓		
	A3	Update shortage price values				✓		
	A4	New reserve product to cover sudden reduction from intermittent sources						✓
	A5	Offer price reductions after gate closure				✓		
	A6	Investigate + develop ahead market				✓		
	A7	Remove UTS over-ride of trading conduct provisions				✓		
	A8	Negative offers/prices						
	A9	Centralised commitment based on complex offers						
	A10	Warming contracts						
Effective risk management and efficient investment	B1	Greater transparency of hedge info (esp non-base load) covering offers, bids + agreed prices						✓
	B2	Market-making for longer dated futures (for price discovery)				✓		
	B3	Publish aggregated information on pipeline of new developments, energy and capacity adequacy				✓		
	B4	Enhance stress testing regime				✓		
	B5	Develop standardised 'shape' product(s)					✓	
	B6	Develop flexibility access code (non-price elements)						✓
	B7	Extend trading conduct rules to hedge market				✓		
	B8	Market making in caps or other shaped products						✓
	B9	Capacity mechanisms						
	B10	Strategic reserve						

SUPPORTS OPTION     
 DOES NOT SUPPORT OPTION     
 PARTIALLY SUPPORTS OPTION     
 OPTION NOT DISCUSSED

TOPIC	CODE	MEASURE	MDAG	WMR	BCG	CODE	CO-DESIGN	HYBRID
Lift demand side participation	C1	Monitor provision + uptake of DSF-rewarding tariffs (incl automation)					✓	
	C2	Sunset profiling if smart meters in place				✓		
	C3	Require retailers to offer DSF tariffs						
	C4	Develop standardised shape-related hedge products to reward DSF					✓	
	C5	Provide significant funding for pilots/trials to kick-start dynamic tariff use					✓	
	C6	Use Customer Compensation Scheme to reward DSF						
	C7	Negawatt scheme for wholesale market						
	C8	FSR – improve DSF visibility and remove Code barriers				✓		
	C9	FSR – accelerate new ancillary services for DSF uptake						
	C10	Procurement process for high-scarcity DSF (RERT)						
	C11	Ensure distribution pricing reflects network needs					✓	
	C12	Investigate extending LMP into distribution networks						
	C13	Provide info to help large users with upcoming DSF investment decisions					✓	
	C14	Provide info to help domestic customers with DSF decisions					✓	

SUPPORTS OPTION    
 DOES NOT SUPPORT OPTION    
 PARTIALLY SUPPORTS OPTION    
 OPTION NOT DISCUSSED

TOPIC	CODE	MEASURE	MDAG	WMR	BCG	CODE	CO-DESIGN	HYBRID
Strengthen competition	D1	Develop dashboard of competition indicators for flexibility segment of wholesale market						✓
	D2 (=B1)	Greater transparency of hedge info (esp non-base load) covering offers, bids + agreed prices						✓
	D3 (=B6)	Develop flexibility access code (non-price elements)						✓
	D4 (=B7)	Extend trading conduct rules for hedge market				✓		
	D5 (=B8)	Market making in caps or other shaped products						✓
	D6	Physical disaggregation of flexible generation base						
	D7	Virtual disaggregation of flexible generation base						
	D8	Price caps applied in the electricity spot market						
Increase public confidence	E1	Structured information programme for wider stakeholders				✓		
	E2	Regular briefings for Ministers and officials on current and expected conditions						✓
	E3	Increase inter-change with international experts					✓	
	E4	Enhance monitoring with more autonomy				✓		
	E5	Periodic warrant of fitness review for independent regulatory agencies				✓		

 SUPPORTS OPTION    
  DOES NOT SUPPORT OPTION    
  PARTIALLY SUPPORTS OPTION    
  OPTION NOT DISCUSSED

Source: Market Development Advisory Group (2022, p. 16)The Future Security and Resilience Roadmap also outlines proposed areas of work to ensure security of supply as shown in Figure 11 with implications for the Authority, the system operator, and the sector. A more detailed breakdown of this in provided in Appendix B.

Figure 11: Summary of the Future Security and Resilience Roadmap

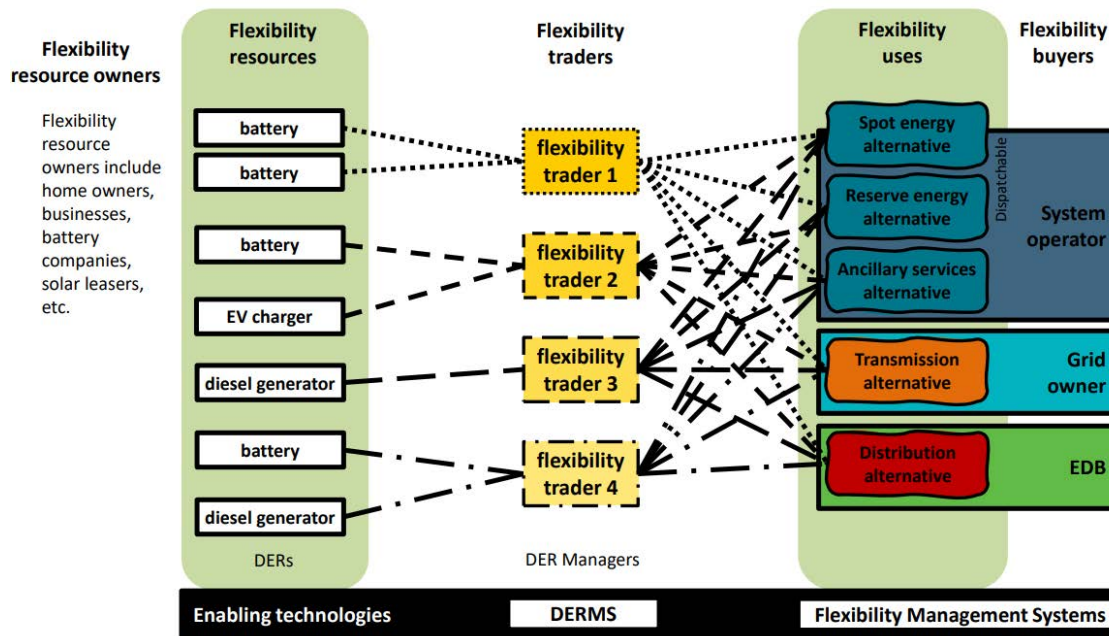
# Outcomes



Source: Electricity Authority (2022e, p. 12)

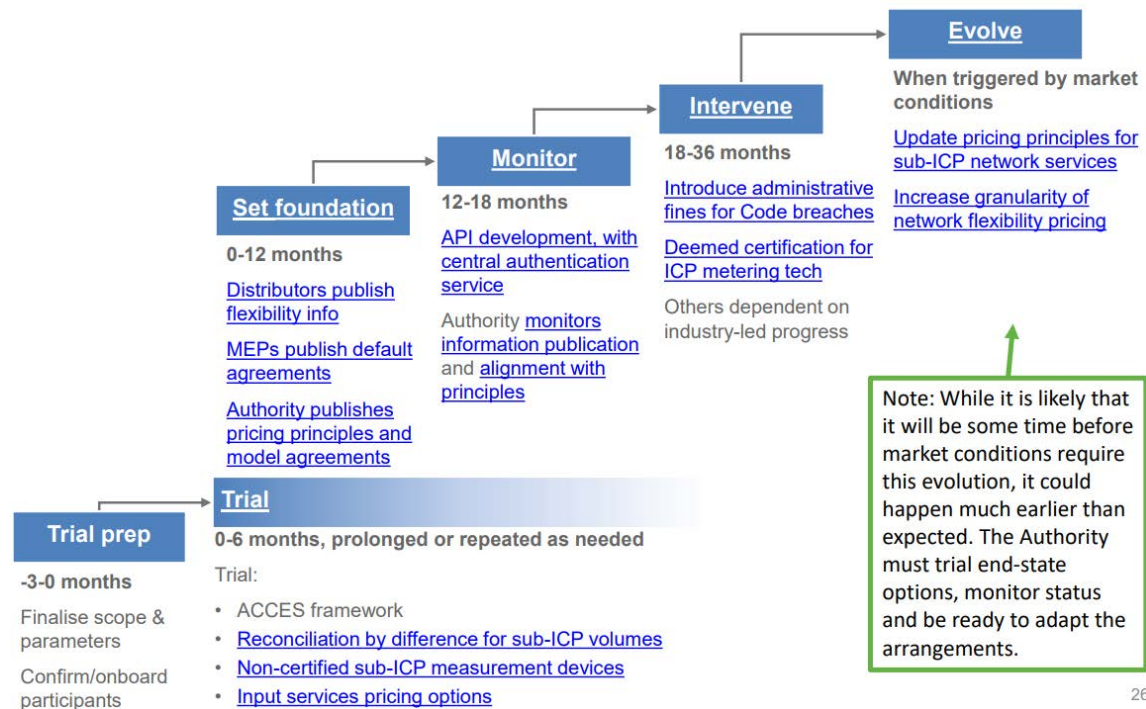
In addition, IPAG's "Advice on reducing barriers to customer access to multiple electricity services" (2019) outlined the potential role of flexibility resources and traders in supporting demands for flexibility. The figures below highlight the potential trading arrangements and summarise IPAG's staged recommendations.

Figure 12: IPAG's proposed flexibility arrangements



Source: Innovation and Participation Advisory Group (2019, p. 4)

Figure 13: IPAG's recommended staging for reducing barriers to consumer access to multiple electricity services



Source: Innovation and Participation Advisory Group (2019, p. 26)

In its submission to the Authority's most recent levy consultation, Vector also highlighted the following implications from ongoing improvements in technology (emphasis added):

"13. The transition to **new technologies** is not costless, but efficiencies and greater market monitoring sophistication – enabled by digitalisation and new technology – will cut costs and increase transparency. For example, the **application of analytics, machine learning, and artificial intelligence to the increasing volumes of data** being collected by regulators would make detection of existing and potential harm to consumers, systemic risks, emergencies, and non-compliance timelier and more accurate, i.e. oversight and auditing shifts to being ongoing, in near real-time.

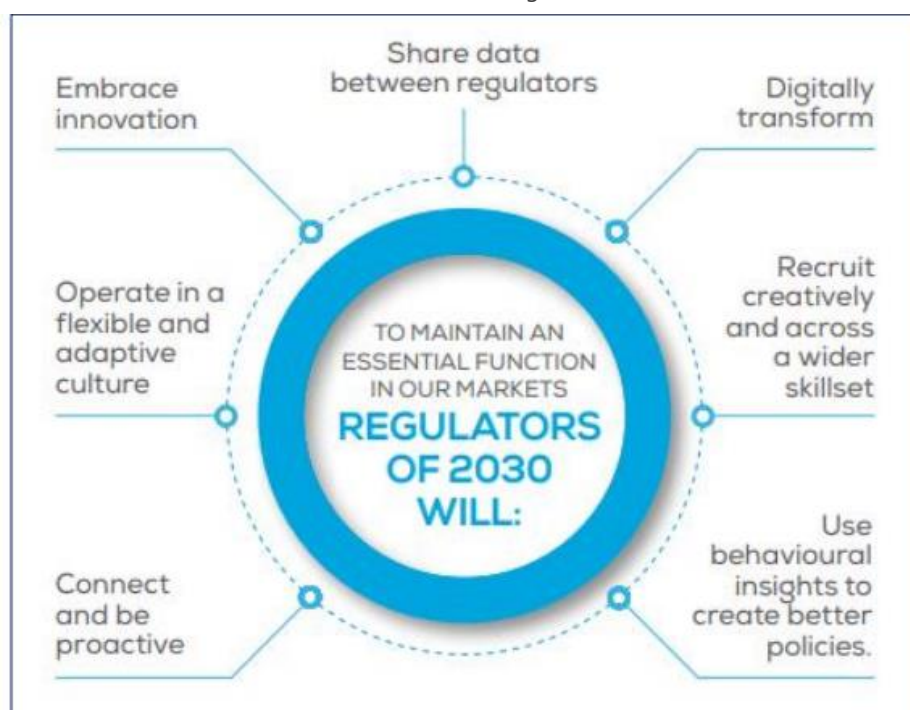
14. The use of advanced analytics can **provide real-time insights into market movements**. This enables regulators to **identify emerging trends** that could benefit consumers or respond in a timely manner where there is harm or potential harm to market participants or consumers.

...

16. Digitally transformed regulators can rethink their approach to the creation and enforcement of regulatory frameworks nimbly, where necessary or warranted. Technology could **simplify regulatory processes, capture feedback more quickly, and help ensure that the appropriate privacy and security settings are in place** to protect consumers and uphold market integrity.

17. Chartered Accountants Australia and New Zealand identified in its paper *The Regulator of 2030: Regulating our digital future* the "essential characteristics of any future regulator wishing to retain consumer confidence and remain effective as we approach 2030" as summarised in Figure 14 below:

Figure 14: CAANZ's Essential characteristics of a future regulator



Source: Chartered Accountants Australia New Zealand (2017, p. 18)



...

18. A digitally transformed regulator could make conducting trials for new products and services less daunting for innovators. Some sectors are well advanced in the use of digital technology for regulatory purposes. For example, the United Kingdom was ranked by EY to be the world's most fintech-friendly jurisdiction. The U.K.'s fintech policy environment includes Project Innovate, a scheme designed to help fintech firms get regulation fit. It also includes a 'regulatory sandbox' which enables businesses to test out new services in an environment that is exempt from standard regulations<sup>4</sup> (usually within a time-limited period).

...

19. The use of digital tools and platforms enables regulators to conduct consultations more nimbly, by allowing ongoing conversations between multiple parties, e.g. through online feedback platforms and virtual roundtables. This reduces the regulatory burden on both regulators and stakeholders. Through these interactive tools, regulators can also collaborate with interested industry participants and consumers in developing regulatory options or solutions, i.e. 'crowdsourcing' of solutions, or co-designing some of the early stages of new or innovative solutions."

Some of our interviews also raised the question of the Authority's regulatory role, approach and focus in supporting this transition, with some suggesting greater focus on facilitation and ensuring the regulations do need not impede new technologies or business models.

## 4.4 Implications for the Electricity Authority

The challenges and opportunities noted in the Authority's energy transition roadmap include:

- distributed energy resources
- support the demand for new electricity infrastructure
- manage the impact of weather-driven variability on generation levels and network resilience
- manage declining demand for fossil fuel generation
- allocate and manage financial risks.

In the context of the above medium-term dynamics, we highlight the following potential implications for the Authority's regulatory activities:

- **Workload and pressures assigned to it** – given its regulatory role and the pressures and shifts expected in the sector, this may place additional workloads on the Authority in order to support the long-term interests of consumers.
- **Modernising the rule book** – the changes in technology and business models suggest that the Code will need to be updated so as not to undermine the long-term interests of consumers. Interviews and submissions as part of the levy consultation highlighted that there are existing proposed changes to the Code that have yet to be considered.
- **Supporting rapid, short cycle innovation** – our interviews highlighted that the recent legislative changes give the Authority greater scope for conditional exemptions and adjustments to the Code and that this may provide the opportunity to run the likes of "regulatory sandboxes" to

support the trial of new approaches and other forms of innovation. This is also highlighted in IPAG's "Advice on reducing barriers to customer access to multiple electricity services".

- **Implications for digitising the network further** – the level of information and data flows are likely to increase in future with the implementation of Real Time Pricing, increasing demands and opportunities from smart technologies, and the imminent introduction of the consumer data right (CDR) to the energy sector. This may have implications for the systems used, contracted and supported by the Authority in order to support efficient, secure and appropriate data exchange, storage, and analysis. As highlighted above, Vector's submissions identify the significant opportunities for consumers from the use of increased analytics, machine learning and artificial intelligence.
- **Reviewing standards** – for instance, one of the examples raised during submissions was in relation to photovoltaics where the standards in the Code lag industry practice leading to technical breaches of the Code for new PV installations **Confidentiality**  
We note that the Authority is not responsible for all standards in the Code though and that MBIE has a role in some of these, including in progressing the solution around PV registration whereby two classes of participant were exempted from requirements to register as industry participants. The level of specificity in the Code was also highlighted, suggesting that simplification could be considered as part of modernising the cost, and separately standards could also be considered and reviewed where new technologies and business models support updates.
- **Engagement with wider range of sector participants** – the expected rise of "prosumers", recent focus on small domestic consumers, and increased decentralisation and diversity of market participants could require new channels and forms (and potentially quantity) of engagement with the sector to ensure the long-term interests of consumers are supported.

## 4.5 Section recommendations

**Recommendation 2:** As part of work on a medium-term strategy **address the following medium-term pressures** and their potential implications for the sector and the Authority:

*a. Underlying dynamics:*

- i) The transition to a low-emissions economy and therefore decarbonisation of our energy systems – market design and security arrangements.
- ii) Improvements in, and the role of, new technologies.
- ii) Increasing focus on small domestic consumers.

*b. Potential implications for the Authority*

- i) Additional workload pressures to support associated sectoral shifts and delivery of its statutory objectives.
- ii) Requirements to modernise the Code.
- iii) Opportunities to support rapid, short cycle innovation.
- iv) Ensuring systems support further digitisation and information flows.
- v) A need to review standards the Authority has control over (such as Part 8 of the Code, currently being reviewed) to ensure barriers to entry are minimised and standards are relevant.

vi) A need to engage with a wider range of sector participants as well as new opportunities to do this efficiently.

## 5. Funding the Authority's activities

This section discusses the Authority's funding. We first examine the Authority's current and historical levels of funding relative to its actual spend. We then compare the pre-Budget 2023 future appropriation baseline to the Authority's proposed increases.

### 5.1 Funding

The Authority receives annual funding from the Crown. The funding is provided from three appropriations within the 'Vote Business, Science, and Innovation' estimates of appropriations and is recovered via a levy on electricity industry participants.<sup>20</sup>

Table 7 displays a summary of the Authority's appropriations. The figures listed are in millions for the 2021/22 fiscal year and are from the Authority's 2021/22 annual report (Electricity Authority, 2022b).

Table 7: Summary of the Authority's appropriations for 2021/22

Appropriation	Functions	Funding in 2021/22 (\$ million)
<b>Operating appropriation</b>		
1. The electricity industry governance and market operations appropriation.	<ul style="list-style-type: none"> <li>Promote market development.</li> <li>Monitor, inform, and educate.</li> <li>Operate the electricity system and markets.</li> <li>Enforce compliance.</li> </ul>	\$77.3 actual versus \$78.2 budgeted.
<b>Contingent appropriations</b>		
2. Managing the security of New Zealand's electricity supply appropriation.	<ul style="list-style-type: none"> <li>Address funding requests from the system operator for the management of security of supply events.</li> </ul>	\$0 actual versus \$1.2 budgeted.
3. The electricity litigation fund appropriation.	<ul style="list-style-type: none"> <li>Defend cases against the Authority and taking enforcement action.</li> </ul>	\$0.1 actual versus \$0.5 budgeted.

The Authority's core funding appropriation is the electricity industry governance and market operations appropriation. The appropriation provides operational funding to enable the Authority to carry out its statutory functions and achieve its objective of a competitive, reliable and efficient electricity industry. Most of the appropriation funds the operation of the electricity system and markets, with the remainder funding the Authority's operations. This appropriation is the focus of the review.

The two additional appropriations are more targeted. They allow the Authority to respond quickly to certain events.

<sup>20</sup> Appropriations provide a Minister with the authority to spend public money on behalf of the Crown, i.e. appropriations provide parliamentary authority for the executive government to incur expenses.

- The second appropriation, the managing the security of New Zealand's electricity supply appropriation, aims to achieve the security of supply in the electricity systems during periods of emerging or actual security situations. This appropriation can be used to address funding requests from the system operator for the management of security of supply events.
- The third appropriation, the electricity litigation fund appropriation, ensures the Authority can participate in litigation effectively and without delay. This appropriation allows the Authority to defend judicial reviews, appeal cases against it, and take enforcement action to enforce its compliance function. These two appropriations are out of scope of the review.

## 5.2 Current and historic funding

The Authority's primary source of funding is from the electricity industry governance and market operations appropriation, with two other minor contingent appropriations (as shown in Table 7). The following subsection examines operations expenditure using data provided from the Authority and observed from its annual reports. The Authority's operations expenditure is examined across five dimensions:

- in aggregate
- with operating expenses split into project expenses and non-project expenses (business-as-usual expenses)
- by business unit and category
- by level of staffing
- benchmarked against similar organisations.

### 5.2.1 The Authority's historical expenditure is increasing in aggregate

The Authority's historical operations expenditure can be observed from its annual reports. We use actual and budgeted expenditure data from 2011/12 to 2021/22. The 2010/11 year's expenditure was not included because it only included eight months of expenditure. In addition, budgeted expenditure for the 2011/12 was not available. The figures presented are nominal and have not been adjusted for inflation.

To allow for an accurate comparison of operational expenditure across the years, the following adjustments are made:

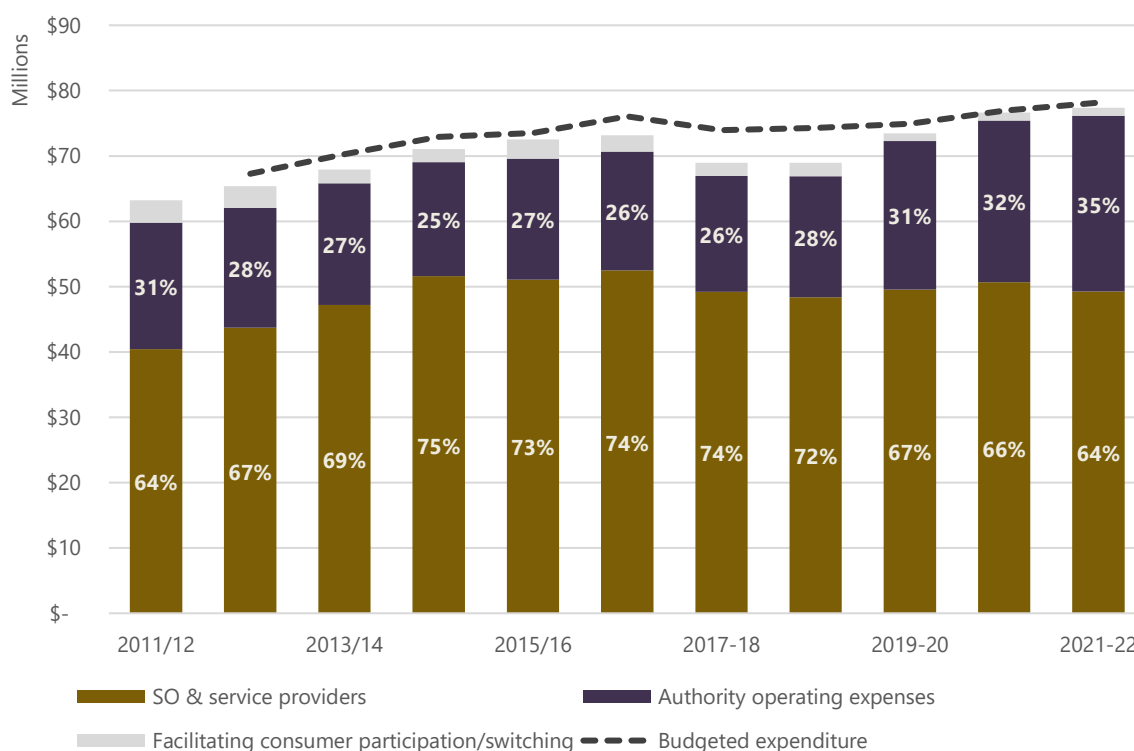
- Customer switching activity has been separated out. The Authority had a 'promoting and facilitating customer switching' appropriation in years 2011/12 to 2013/14. Following this period, the activity was included as a 'Customer Switching Fund' from 2014/15 to 2016/17, and the expense continued in the following years through to 2018/19. We also heard from the Authority that this amounted to an annual \$1.2 million in the years following 2018/19.
- We have not included the market-making project (\$3.6 million) or Real Time Pricing projects (\$3.2 million) in the budget for 2021/22. While these were budgeted for the year, actual expenditure did not occur and was diverted to later years (this is discussed further below).
- The appropriation increased \$2 million in 2021/22. The increase is included in the graph.

Figure 15 shows the results following these adjustments. The bars show the actual expenditure from 2011/12 to 2021/22. The dashed line shows the budgets in each respective year. The percentages displayed on the bars represent the proportion the respective variable is of the total expenditure for the year.

Both actual expenditure and budgeted expenditure increased over the 11-year period observed. From 2011/12 to 2016/17, the increase was largely driven by system operator (SO) and service provider expenditure. Expenses remained relatively constant in 2017/18 and 2018/19. In the years following, system operator and service provider expenses continued to remain relatively constant. The Authority's operating expenditure was therefore the driver of the observed aggregate expenditure increases from 2019/20.

Importantly, the difference between actual and budgeted expenditure has narrowed over time (noting the exclusions of market making and Real Time Pricing where funding for external services was deferred in 2021/22). From 2019/20 to 2021/22, this difference is minimal, suggesting that the Authority's operational activity has increased. These observations are in line with Authority's view that its workload has increased with current and future regulatory requirements (and hence the proposal for additional funding).

Figure 15: The Authority's historical operations expenditure relative to budgeted operations expenditure



Source: The Electricity Authority

At the same time, there have been large underspends on ring-fenced projects, where spending has been delayed. Figure 15 does not reflect the Authority's actual underspend (relative to budgeted expenditure) in 2021/22. Part of the reason for this underspend is the deferral of Real Time Pricing (\$3.2 million) and market-making expenditure (\$3.6 million) into outer years. We understand that this

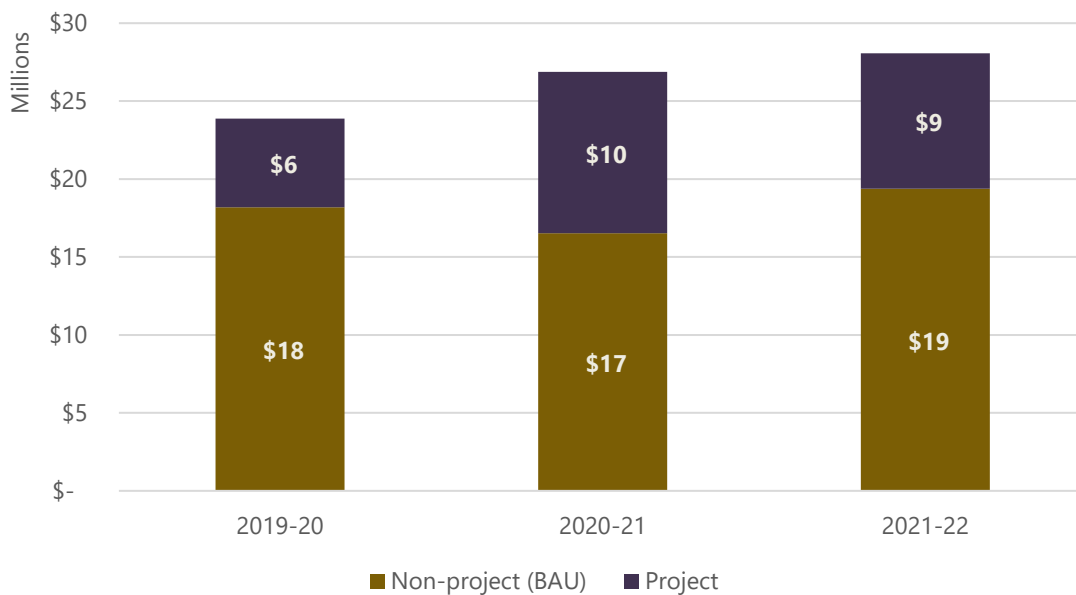
funding was ringfenced and so was not able to be accessed by the Authority for its operations. Including these two areas of the budget in the budgeted expenditure in Figure 15 would therefore present a misleading picture of available funding and the gap would have grown. We also note a similar underspend in 2022/23 (provisionally \$4.1 million) due to Real Time Pricing and market-making commencing later than planned.

## 5.2.2 Project expenditure is increasing

The Authority provided expenditure from 2019/20 to 2021/22 split into project expenditure and non-project expenditure. Project expenditure refers to all expenditure allocated to the Authority’s projects. Non-project expenditure refers to the Authority’s business-as-usual expenditure.

Figure 16 below summarises the project and non-project expenditure from 2019/20 to 2021/22. Acknowledging that there are only three periods shown, business-as-usual represents the majority of spending; but project expenditure is increasing proportionately more than non-project expenditure. This observation suggests more project-specific work is being undertaken by the Authority.

Figure 16: Project and non-project (business-as-usual) expenditure from 2019/20 to 2021/22



Source: The Electricity Authority

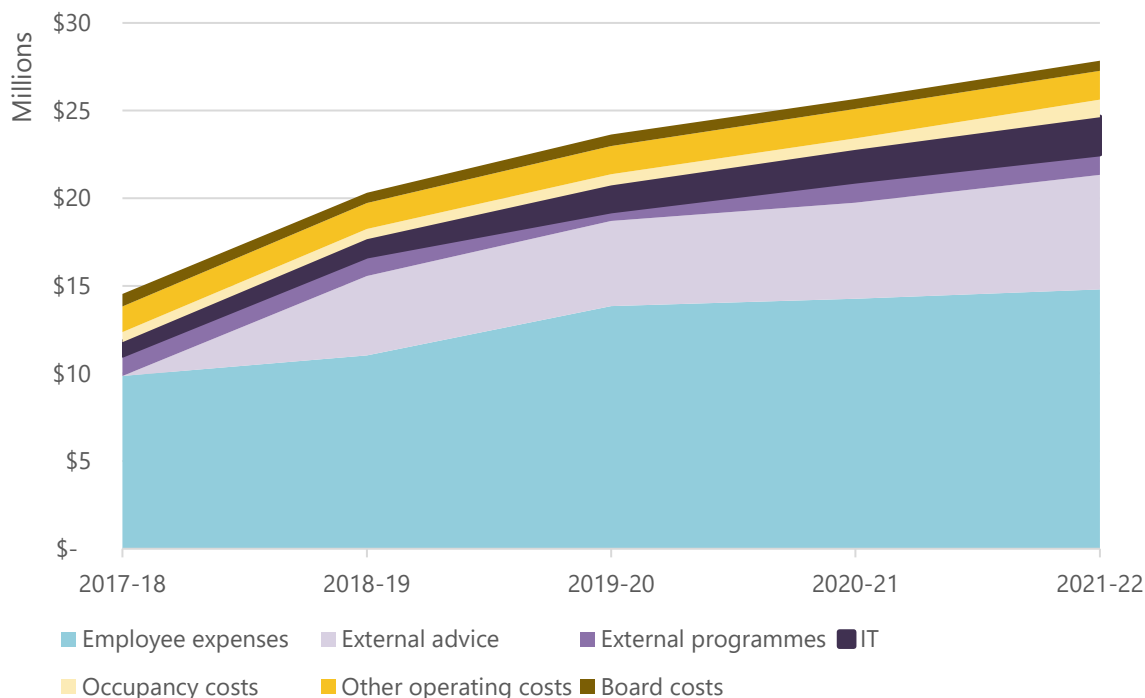
## 5.2.3 Historical operations expenditure changes over time, by cost category

The following subsection provides a breakdown of the Authority’s operating costs from 2018/19 to 2021/22 by cost category. The purpose is to provide context to the Authority’s overall operating expenditure levels. A cost breakdown by function is covered in subsection 5.2.4 directly below.

A time series of the Authority’s operations expenditure from 2018/19 to 2021/22 is provided in Figure 17 below. Only the Authority’s operations expenditure is included, that is, expenses for outsourced services (e.g. system operator expenses) are excluded. Expenditure is provided by cost category.

Employee expenses are the largest portion of all expenditure, accounting for over half in all years displayed. Employee expenses increased by \$4.9 million or 50.1 per cent over the period. This will reflect the additional 22 FTEs or 33 per cent increase in employees over the same period (and increases in average remuneration/employee costs).

Figure 17: Operations expenditure from 2017/18 to 2021/22 by cost category



### 5.2.4 Historical operations expenditure changes over time, by function

For a more granular view of the Authority’s historical resourcing, the Authority provided its expenditure by business units. This data was provided for the five years following the 2017/18 fiscal year. The Chief Executive refers to four core “functions” at the Authority. These functions are:

- Commercial management of the market – the Authority’s role (under the legislation) in outsourcing the operations of the market and managing those contracts.
- Policy – includes the Code and the Authority’s associated policy teams.
- Compliance, monitoring, and enforcement.
- Support.

Below we examine expenditure by business units within these functions.



### **Commercial management of the market increased from \$50.6 million to \$52.2 million from 2017/18 to 2021/22**

When we look at commercial management of the market's expenditure from 2017/18 to 2021/22, there are two cost categories—commercial and facilitating consumer participation/switching, where:

- Commercial grew from \$48.6 million in 2017/18 to \$51.0 million in 2021/22.
- Facilitating consumer participation/switching decreased from \$2.0 million in 2017/18 to \$1.2 million in 2021/22.

The commercial activity is therefore the majority cost category in the commercial management function.

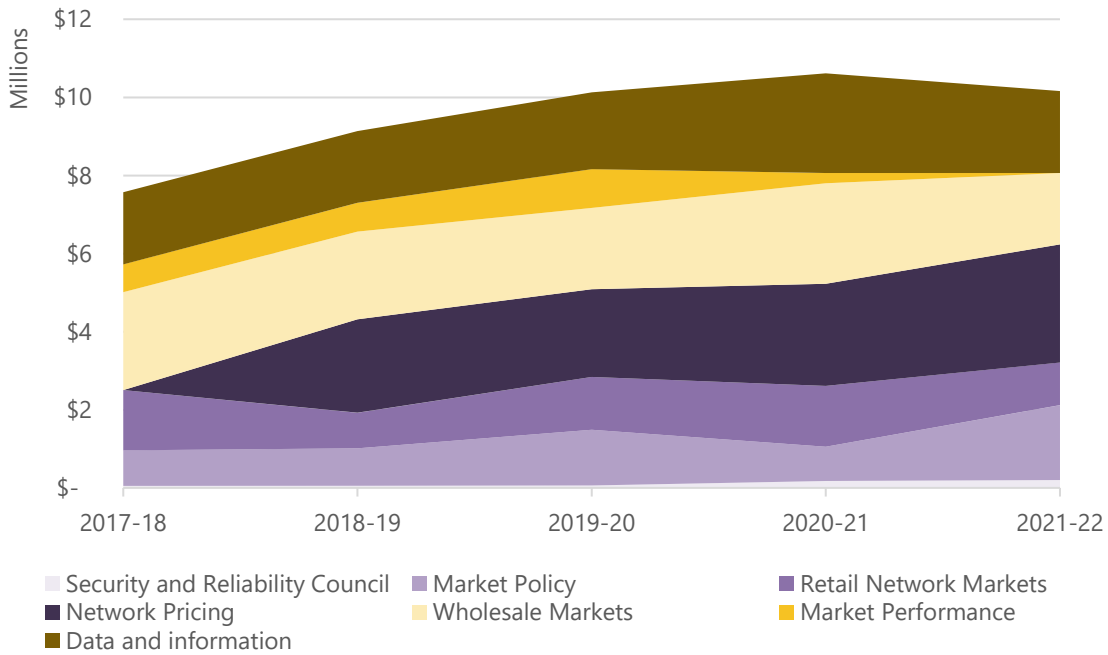
### **Policy expenditure increased from \$7.6 million to \$10.2 million from 2017/18 to 2021/22**

Figure 18 presents policy's expenditure from 2017/18 to 2021/22 separated into the seven business units that make up the category. Policy's expenditure grew from \$7.6 million in 2017/18 to \$10.2 million in 2021/22. This increase can largely be explained by the increase in network pricing, which grew from zero in 2017/18 to \$2.4 million in 2018/19.

The Authority's restructurings in 2020 and 2021 (see section 3.2.1) can also be observed in the data. The Market Performance group's expenditure declines to zero in 2021/22 as its market monitoring functions were shifted to Legal, Ministerial and Compliance in July 2020 and remaining functions (market analytics and market operations) were shifted to the Market Policy group in August 2021). The Market Policy group experiences an expenditure increase – largely from external advice expenditure (as well as this growth in functions).

The policy operations and Security and Reliability Council expenditure categories are not visible given their small size. In contrast, it is clear that market analytics, wholesale markets, network pricing, market policy, and retail networks make up the majority of expenditure.

Figure 18: Policy expenditure from 2017/18 to 2021/22

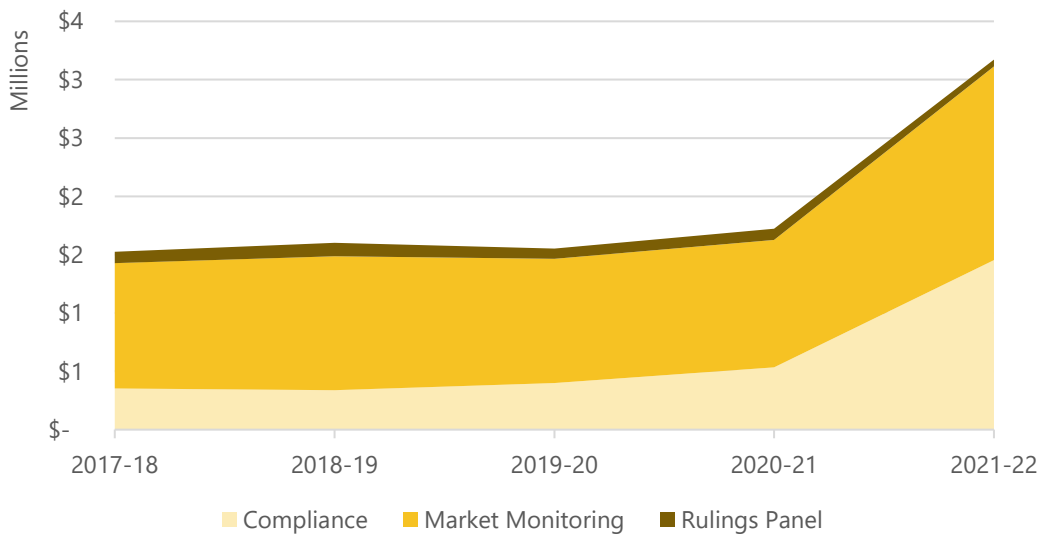


Source: The Electricity Authority

**Compliance, monitoring, and enforcement expenditure increased from \$1.5 million to \$3.2 million from 2017/18 to 2021/22**

Figure 19 shows compliance, monitoring, and enforcement’s expenditure from 2017/18 to 2021/22 across the three business units in the category. The \$1.6 million increase observed over the period can largely be attributed to recent increases in the ‘Compliance’ and ‘Market Monitoring’ business units. The Authority’s litigation fund has not been included in this as it is outside the scope of the review but is also a key component of enforcement.

Figure 19: Compliance, monitoring, and enforcement’s expenditure from 2017/18 to 2021/22



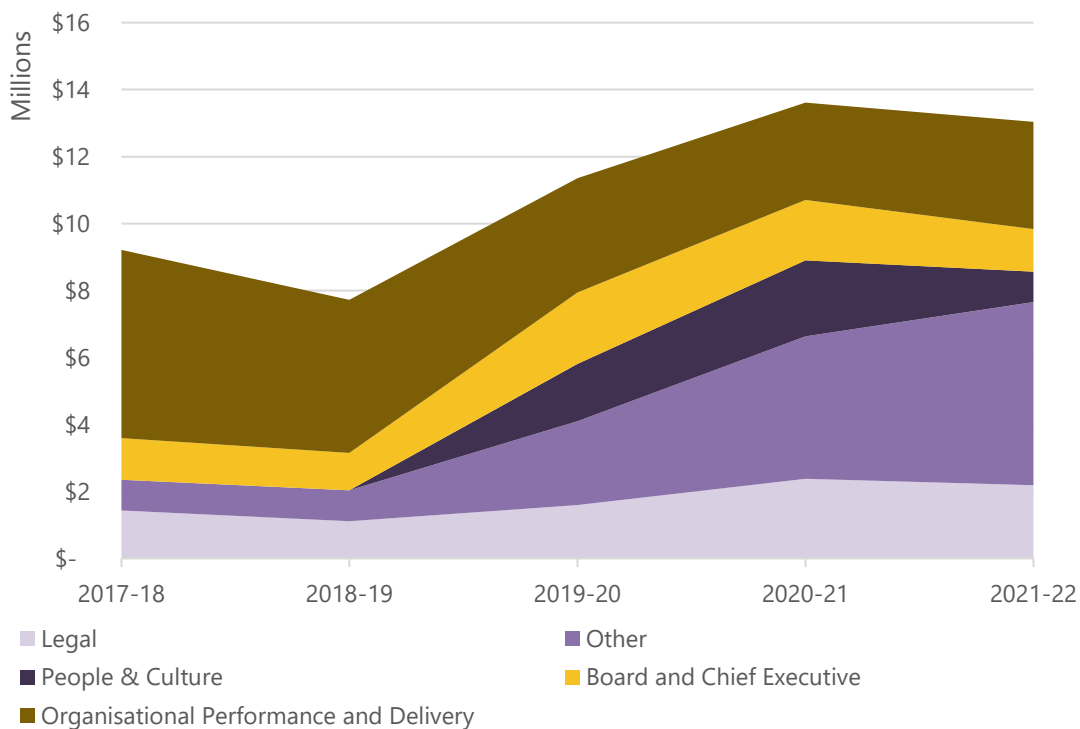
Source: The Electricity Authority

### Support expenditure increased from \$9.2 million to \$13.0 million from 2017/18 to 2021/22

Figure 20 shows support expenditure from 2017/18 to 2021/22, across five business units. The “Other” business unit grouping in Figure 20 is an aggregation of the Authority’s five smaller (by magnitude of spend) business units: communications; strategy, performance and planning; finance; strategic development; and consumer participation.

Overall, support expenditure increased from \$9.2 million to \$13.0 million across the period observed. This increase is largely driven by increases across the “Other” grouping made up of the communications, strategy, performance and planning, finance, strategic development, and consumer participation business units.

Figure 20: Support expenditure from 2017/18 to 2021/22



Source: The Electricity Authority

## 5.2.5 The functions’ expenses mapped to operating cost categories for the 2021/22 year

We next show how the functions’ expenses are mapped to the Authority’s operating cost categories for the 2021/22 year. The mapping provides insight into how the Authority’s operating expenses are allocated across functions (which we grouped into functions to ease analysis above).

Table 8 displays this mapping for the 2021/22 year. The operating cost categories follow those stated in section 5.2.3 and the functions follow those in section 5.2.3 above.

Costs range from \$1 million to \$14.6 million across the six operating cost categories. Similarly, costs range from \$2.9 million to \$11.4 million across functions. We note that employee expenses (the largest cost category) are concentrated in policy and the legal and support functions. Please note

external advice includes expert advice (such as experts in IT or finance), legal services, contracted advice from the system operator, or consultants (such as energy sector consultants), but it does not include the contracted system operator expenses.

By business unit, costs range from \$0.2 million to \$3.02 million. Total costs do not vary markedly across the business units, with the exception of the SRC which has a low relative cost of \$0.2 million. We noted that employee expenses are distributed reasonably evenly across business units, which may reflect the business units being broadly matched to teams and a desired span of management in terms of personnel and budget. Please note that the Communications (202) figure of \$1.2 million for external programmes is for Powerswitch.

Table 8: The Authority's 2021/22 functions' expenses mapped to operating expense categories (\$m)

Function (and business unit)	Employee expenses	External advice	External programmes	IT	Occupancy costs	Other operating costs	Total
<b>Commercial management of the market</b>							
Commercial	0.79	0.10	-	0.99	0.91	0.08	2.87
<b>Total</b>	<b>0.79</b>	<b>0.10</b>	<b>-</b>	<b>0.99</b>	<b>0.91</b>	<b>0.08</b>	<b>2.87</b>
<b>Policy</b>							
Security and Reliability Council		0.16				0.04	0.2
Market Policy	1.1	0.79				0.02	1.91
Retail Network Markets	0.94	0.06		0.01		0.09	1.1
Network Pricing	1.56	1.43				0.03	3.02
Wholesale Markets	1.17	0.54		0.01		0.1	1.82
Market Analytics	1.06	0.01		0.78		0.25	2.1
<b>Total</b>	<b>5.83</b>	<b>2.99</b>	<b>-</b>	<b>0.80</b>	<b>-</b>	<b>0.53</b>	<b>10.15</b>
<b>Compliance and enforcement</b>							
Compliance	1.01	0.4				0.04	1.45
Market Monitoring	1.33	0.27				0.06	1.66
<b>Total</b>	<b>2.34</b>	<b>0.67</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.10</b>	<b>3.11</b>
<b>Support</b>							
Board						0.6	0.6
Organisational Performance and Delivery	0.81	0.69		0.04	0.01	0.3	1.85
Chief Executive	0.64				0.01	0.03	0.68
Communications (202)	0.89	0.02	1.2	0.05		0.14	2.3
People & Culture	0.58	0.01		0.09	0.07	0.12	0.87

Function (and business unit)	Employee expenses	External advice	External programmes	IT	Occupancy costs	Other operating costs	Total
Strategy, Performance and Planning	0.33					0.15	0.48
Finance	0.48	0.08		0.1		0.07	0.73
Strategic Development	0.51	1.21				0.01	1.73
Legal (210)	1.4	0.74		0.01		0.04	2.19
<b>Total</b>	<b>5.64</b>	<b>2.75</b>	<b>1.20</b>	<b>0.29</b>	<b>0.09</b>	<b>1.46</b>	<b>11.43</b>
<b>Grand Total</b>	<b>14.60</b>	<b>6.51</b>	<b>1.20</b>	<b>2.08</b>	<b>1.00</b>	<b>2.17</b>	<b>27.56</b>

Source: The Electricity Authority

## 5.2.6 Staffing has increased, particularly in support as well as compliance, monitoring and enforcement

The Authority provided data on its full-time equivalent (FTE) workers by business unit codes. As above, we have grouped these business units by the four wider functions of: commercial management of the market; support;<sup>21</sup> policy; and compliance, monitoring and enforcement.

Figure 21 presents the annual average FTE counts by function from 2017/18 through to 2021/22. It shows there was an overall increase of 22 FTEs over the five-year period, including an increase by nine from 2019/20 to 2020/21, and then by a further eight in 2021/22 (note the figures stated on the graph are rounded). The increase arose due to the restructuring of the Authority and the consequent hiring.

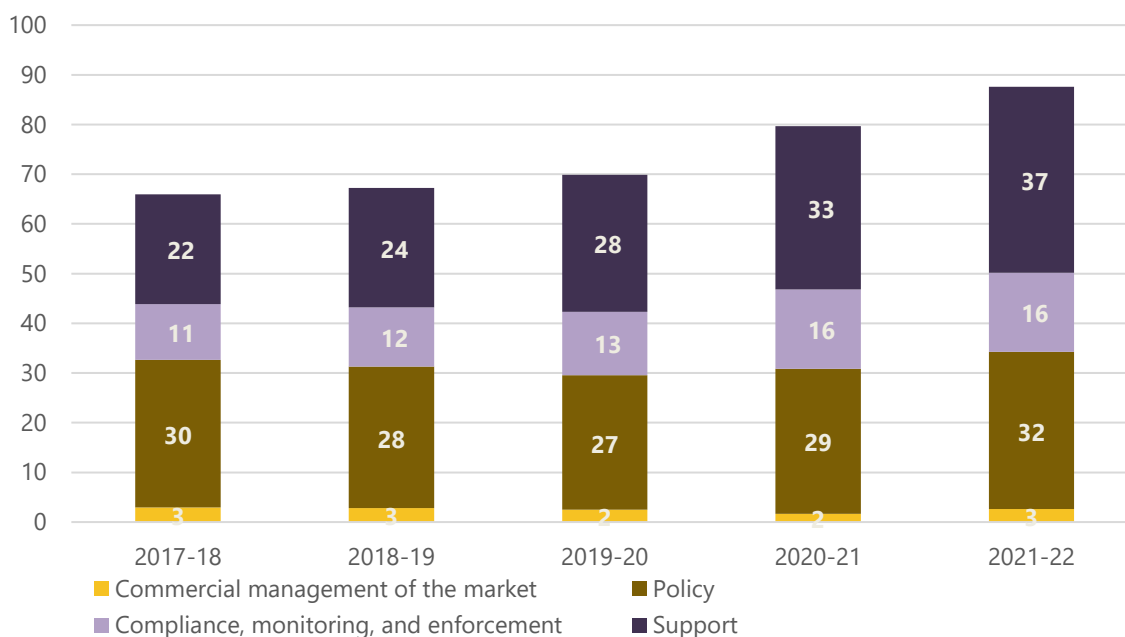
Please note that the FTE counts do not match those stated earlier in the organisation chart as they relate to different points in time and measures of staffing, using different data sources. The FTE counts below are estimated using the Authority's FTE data by business unit, averaging the monthly FTE counts in the relevant years (which allows a more consistent view of resourcing). In contrast, the chart provided in section 2.3 states personnel (not accounting for hours worked) and vacancies at August 2023 so they simply serve different purposes.

The policy and commercial management of the market functions had a negligible increase over the five-year period shown, though have increased since 2021/22. The support function increased by 15 FTEs, and compliance, monitoring, and enforcement increased by five FTEs. These increases demonstrate the areas of focus following the 2020 and 2021 restructures at the Authority.

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<sup>21</sup> The support function includes: the Board; organisational performance and delivery; Chief Executive; communications; people and culture; strategy, performance and planning; finance; strategic development; central adjustments; legal; and communications.

Figure 21: The Authority's annual average FTE counts from 2017/18 to 2021/22



Source: The Electricity Authority

## 5.2.7 Expenditure benchmarked against similar organisations

Next, we benchmark the Authority's expenditure against similar domestic and international regulators. Benchmarking gives useful context for the Authority's expenditure. Considered alongside relative roles and functions, and in light of a wider strategy, it can help identify areas where performance could be improved and resources optimised.

All of the figures and expenditure reported are for the 2021/22 financial year. The staffing figures are permanent staff. Outsourcing expenditure refers to all outsourced expenses, including but not limited to professional fees, external advice, contracts, and consultants. We note the Authority has significant outsourcing expenses given its significant amounts of contract services, including the system operator. Legal consulting fees have been excluded from the outsourcing figures to allow for a more consistent comparison across organisations.

### Compared to a selection of domestic regulators, the Authority has low staffing and a greater portion of costs relating to outsourced services

We first compare the Authority's resourcing to four domestic regulators, including:

- **The Serious Fraud Office**—the lead law enforcement agency for investigating and prosecuting serious or complex financial crime, including bribery and corruption.
- **The Commerce Commission**—the Crown entity responsible for administering and enforcing law relating to competition, fair trade, consumer credit, and economic regulation.
- **The Financial Markets Authority (FMA)**—the Crown entity mandated to promote and facilitate the development of fair, efficient, and transparent financial markets.
- **Maritime New Zealand**—the New Zealand regulatory, compliance, and response agency for the safety, security, and environmental protection of coastal and inland waterways.

The figures used below are based on 2021/22 figures and represent a point in time comparison. Since this time, certain comparators have had a change in expectations and associated increases in funding agreed.

Table 9 summarises the results of this benchmarking. Of these regulators, the Authority has the highest total expenditure and second lowest staffing. The high proportion of service provider costs, as shown in Figure 15, will be a key driver as shown by its “outsourcing” expenses being significantly higher than the others. Removing outsourcing, expenses are much closer to those of the Serious Fraud Office, which has more similar levels of staffing (though even excluding outsourcing, expenses per employee are the highest for the Authority). We note the nature and span of functions differ across these domestic benchmarks too, however. In particular, there is an impost on the Authority relating to outsourcing beyond the cost paid to service providers, and where this extends beyond staffing costs this will be an impact on overall costs not faced by the other regulators shown (or to a much smaller extent). In addition, the Authority is: a) responsible for secondary legislation (the Code), which may differ from the roles of other regulators, and b) is smaller than most of these comparators, meaning the others may benefit from some economies of scale.

Table 9: Summary of domestic benchmarking for the 2021/22 financial year

<b>Organisation</b>	<b>Staff</b>	<b>Outsourcing (millions)</b>	<b>Total expenses (millions)</b>	<b>Total expenses excluding Outsourcing (missions)</b>	<b>Total expenses excluding Outsourcing/staff ('000s)</b>
Serious Fraud Office	78	\$0.7	\$13.9	\$13.2	\$169.2
<b>Electricity Authority</b>	<b>88</b>	<b>\$48.1</b>	<b>\$77.5</b>	<b>\$29.4</b>	\$334.1
Maritime New Zealand	269	\$9.4	\$72.4	\$63.0	\$234.2
Financial Markets Authority	311	\$5.8	\$58.1	\$52.2	\$167.9
Commerce Commission	316	\$6.2	\$69.3	\$63.1	\$199.7

Source: Annual reports from the Electricity Authority (2022), the Serious Fraud Office, the Commerce Commission, the Financial Markets Authority, and Maritime New Zealand

### **Compared to a selection of overseas energy regulators, the Authority has lower staffing and a greater portion of costs relating to outsourced services**

We next compare the Authority’s expenditure to four overseas energy regulators. While these regulators are not always the sole energy regulator in each country, e.g. the Australian Energy Regulator, they provide a useful comparison of costs.

Figures are converted to New Zealand dollars using the average exchange rate for the 2021/22 year. The four regulators include the:

- **Australian Energy Regulator (AER)**—the regulator of Australia’s (excluding Western Australia) wholesale electricity and gas markets.
- **Clean Energy Regulator**—the independent authority responsible for administering Australian legislation that reduces greenhouse gas emissions and increases the use of renewable energy.

- **Office of Gas and Electricity Markets (Ofgem)**— the United Kingdom’s government regulator for the electricity and downstream natural gas markets.
- **Canada Energy Regulator**—the Government of Canada’s agency that regulates and enforces all Canadian laws that regard interprovincial and international oil, gas, and electricity utilities.

Table 10 summarises the results of the international benchmarking. The Australian Energy Regulator only provides a high-level expense estimate that does not include outsourcing costs, and also does not provide a staff count.

The Authority has the lowest expenditure and staff count of the countries observed. This is not surprising as we note that costs generally scale with the population served and role of the organisation, with larger populations and wider roles requiring more resource.

The Authority’s total expenses are more comparable to the AER and Clean Energy Regulator (Australia). As with the domestic comparators, the Authority has the highest proportion of expenses relating to outsourcing (due to its high portion of service provider costs). Similarly, to domestic comparators, excluding outsourcing costs, the Authority’s costs per staff member are higher than these international comparators. In addition to the possible additional costs associated with these contracts and differences in the nature and scope of functions (including responsibility for drafting secondary legislation), foreign exchange and differences in business costs across jurisdictions may also be a factor in these comparisons.

Nonetheless, we note that the Authority’s expenses per staff member in 2021/22 were \$334,000 compared to \$169,000-\$234,000 for the domestic regulators considered and \$186,000-\$225,000 for the overseas energy regulators we had information for. High turnover and resulting recruitment and contracting costs may account for some of this difference, as well as economies of scale (as all but one comparator is larger and a number significantly so), but it suggests a good understanding of the Authority’s cost structure and overheads and how these fit relative to their statutory functions is needed (particularly in light of the portion of FTE and costs in the support function).

Table 10: Summary of international benchmarking for the 2021/22 financial year

<b>Organisation</b>	<b>Staff</b>	<b>Outsourcing (NZD millions)</b>	<b>Total expenses (NZD millions)</b>	<b>Total expenses excluding outsourcing (NZD millions)</b>	<b>Total expenses excluding. Outsourcing/staff (NZD '000s)</b>
<b>Electricity Authority (NZ)</b>	<b>88</b>	<b>\$48.1</b>	<b>\$77.5</b>	<b>\$29.4</b>	<b>\$334.1</b>
AER (AUS)			\$80.2	\$80.2	
Clean Energy Regulator (AUS)	317	\$12.2	\$83.5	\$71.3	\$224.9
Ofgem (UK)	1,104	\$49.3	\$254.1	\$204.8	\$185.5
Canada Energy Regulator (CAD)	559	\$19.1	\$127.0	\$107.9	\$193.0

Source: Annual reports from the Electricity Authority (2022), Australian Energy Regulator, Clean Energy Regulator (2022), Ofgem (2022), and the Canada Energy Regulator (2022)



## 5.3 Future resourcing

The following subsection examines the Authority’s future resourcing. First, we examine the baseline appropriation projected forward prior to Budget 2023 decisions, i.e. the consequences with no changes to the appropriation. Then we analyse the impact of the proposed appropriation increase.

### 5.3.1 The Authority’s operating expenses would decrease if there were no change to the baseline

Holding the operations appropriation fixed at the pre-Budget 2023 level of \$76.94 million (or any other fixed level) would result in system operator and service provider costs increasing—as these scale with inflation—and consequently the Authority’s operating expenses decreasing.

Table 11 summarises the Authority’s baseline through to 2026/27 under the pre-Budget 2023 status quo. The operations appropriation is held constant at \$77 million to reflect the operations appropriation with no increase (considering prior to the funding increase approved in Budget 2023). The figures for the system operator and service provider and Authority operating expenses through to 2024/25 are observed from the Authority’s 2022/23 and 2023/24 levy funded appropriations document (Electricity Authority, 2022a). The figures for 2025/26 and 2026/27 are estimated by indexing the system operator and service provider expenses to the Reserve Bank of New Zealand’s expected inflation (Reserve Bank of New Zealand, 2023). The Authority’s operating expenses are estimated as the remaining appropriation. The Real Time Pricing project and market making expenses are observed from the levy-funded appropriations document.

Under the pre-Budget 2023 status quo (i.e. holding the operations appropriation constant), system operator and service provider expenses are together expected to increase by \$6 million to \$58 million over the five-year period. This increase reflects the outsourced contracts that will likely scale with inflation (noting these are negotiated and contracts currently have inflation built in). As the appropriation is held constant, the Authority’s operating expenses would need to decrease to compensate for any increases elsewhere. These operating expenses would be expected to decrease by \$6 million to \$19 million in this scenario. This squeezing of the Authority’s operation expenses is a core component of the argument for the increased appropriation.

Table 11: Summary of the pre-Budget 2023 status quo baseline

<b>Expenses (millions)</b>	<b>2022/23</b>	<b>2023/24</b>	<b>2024/25</b>	<b>2025/26</b>	<b>2026/27</b>
System operator	\$42.27	\$43.37	\$44.50	\$45.39	\$46.29
Service providers	\$9.71	\$10.08	\$11.01	\$11.23	\$11.45
Authority operating expenses	\$24.96	\$23.49	\$21.43	\$20.32	\$19.19
<b>Operations appropriation</b>	<b>\$76.94</b>	<b>\$76.94</b>	<b>\$76.94</b>	<b>\$76.94</b>	<b>\$76.94</b>
Real-time pricing project	\$4.12	\$4.88	\$3.06	\$3.06	\$3.06
Market making	\$14.40	\$14.40	\$14.40	\$14.40	\$14.40
<b>Total</b>	<b>\$95.45</b>	<b>\$96.21</b>	<b>\$94.40</b>	<b>\$94.40</b>	<b>\$94.40</b>

Source: The Electricity Authority levy-funded appropriations (2022) and Sapere analysis

### 5.3.2 The Authority proposed an initial \$0.5 million appropriation increase, scaling up to \$11.3 million by 2024/25

The Authority proposed a \$11.3 million appropriation increase by 2024/25. This increase is outlined in its levy funded appropriations 2022/23 and 2023/24 document (Electricity Authority, 2022a). The core funding components of the Authority’s proposal (and the 60 per cent option agreed in Budget 2023) are summarised in Appendix C.

Table 12 summarises the flow-on impacts of the Authority’s proposed funding increases through to 2026/27. The Authority’s operating expenses would increase, which would increase the overall operations appropriation. As a result, the total funding allocated to the Authority would increase to \$96 million in 2022/23 and \$105.74 million in 2024/25 and all outer years. The Authority’s operating expenses would peak in 2024/25—where the full increase in appropriation would occur but before further inflation in system operator and service provider expenses result in decreases in amounts available for the Authority’s operating expenses.

Table 12: The Authority’s baseline with the proposed appropriation increase

<b>Expenses (millions)</b>	<b>2022/23</b>	<b>2023/24</b>	<b>2024/25</b>	<b>2025/26</b>	<b>2026/27</b>
System operator	\$42.27	\$43.37	\$44.50	\$45.39	\$46.29
Service providers	\$9.71	\$10.08	\$11.01	\$11.23	\$11.45
Authority operating expenses	\$25.46	\$31.30	\$32.78	\$31.67	\$30.53
<b>Operations appropriation</b>	<b>\$77.44</b>	<b>\$84.74</b>	<b>\$88.28</b>	<b>\$88.28</b>	<b>\$88.28</b>
Real Time Pricing project	\$4.12	\$4.88	\$3.06	\$3.06	\$3.06
Market making	\$14.40	\$14.40	\$14.40	\$14.40	\$14.40
<b>Total</b>	<b>\$95.95</b>	<b>\$104.02</b>	<b>\$105.74</b>	<b>\$105.74</b>	<b>\$105.74</b>

Source: The Electricity Authority levy funded appropriations

## 6. Information to inform future funding

In this report we have not been able to provide options to manage within different funding paths.<sup>22</sup> This is because the information made available to us would have required significant assumptions in the time available in order to estimate the funding levels associated with different options. As a result, we agreed with MBIE and the Authority that further work was needed by the Authority to inform future funding options.

With this context, this section identifies:

- potential indicators for whether improvements are being made. That is, for each of the areas to improve identified earlier in this report, we have identified indicators of progress that could subsequently be considered.
- information needed and considerations in developing future funding scenarios.

### 6.1 Indicators that improvements are being made

Several areas for improvement for the Authority were identified earlier in section 3. We have separated the key improvements into three tiers based on magnitude and ease of addressing:

- **Tier 1:** the most significant matters for the Authority, important for meeting statutory objectives
- **Tier 2:** significant matters for the Authority
- **Tier 3:** more discrete issues, these should be more easily addressed by the Authority.

Table 13 shows the key recommended improvements by tier and provides potential indicators of progress associated with each. These indicators provide a basis for choices on what, in future, the Authority measures and reports on in relation to the progress for each improvement. Progress against a selection of indicators such as these would provide confidence that the Authority is improving its operations.

Whether improvements should be made ahead of any expansion of Authority activities could also be considered relative to any funding scenarios considered. For instance, progress against improvements could provide confidence to escalate up funding scenarios and entrust the Authority with greater funding and associated activities. The logic of addressing improvements first came up during our interviews, and some parties felt this was necessary, but the greater majority felt that the Authority would have to make improvements at the same time as taking on additional pressures given the industry dynamics.

Irrespective of the choice of approach, under different funding scenarios the Authority will need to show what it would deliver under different funding scenarios, how this fits with its medium-term regulatory strategy, how it will prioritise funding and effort, and the levels of associated risks.

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<sup>22</sup> Drawing on the cost pressures and potential efficiencies, we have shared with MBIE and the Authority some of the key choices and funding elements to consider.

Table 13: Potential indicators of progress for identified areas to improve

Tier	Areas to improve	Potential indicators of progress
1	<p>There needs to be improved confidence in reliability by addressing winter peak concerns, progressing the Future Security and Resilience work programme, and optimising working arrangements with the Security and Reliability Council and system operator. The Authority notes this is all currently under action.</p>	<ul style="list-style-type: none"> <li>• Improve stakeholder perception of reliability in survey of electricity industry participants perceptions (and consumer perceptions in survey of residential electricity consumer perceptions) undertaken for the Authority’s annual report.</li> <li>• Clear communications about the focus and workplan for the Future Security and Resilience work programme, with prioritised resourcing for this work (and is being observed at present and through the levy consultation).</li> </ul>
	<p>The relationships between the system operator, MBIE, the Commerce Commission and the Authority need to improve in maturity with collective responsibility for the electricity sector and agreed inter-agency roles, accountabilities and boundaries, including shared responsibility for efficiency and management of risks.</p>	<ul style="list-style-type: none"> <li>• Agree mapping of relative roles across agencies, where agencies will work together and role of the Council of Energy Regulators (e.g. MOUs and TORs).</li> <li>• Feedback on nature of relationship improving from key parties involved.</li> </ul>
	<p>Raise the strategic outlook of the regulator to being long-term (10 years) with a three-year planning horizon.</p>	<ul style="list-style-type: none"> <li>• Medium-term regulatory strategy developed.</li> <li>• Improved stakeholder perceptions of future focus in stakeholder perception surveys.</li> </ul>
	<p>Clarify the link between strategy and work programme, including prioritisation framework and when different levers or approaches will be used (e.g. market facilitation, education, review of Code, enforcement), clarify boundaries of the Authority’s role and on what and how it will work with others, and develop medium-term regulatory strategy.</p>	<ul style="list-style-type: none"> <li>• Medium-term regulatory strategy developed, with prioritisation framework and how this will be applied, levers available, intended ways of working with others.</li> <li>• Clear forward work programme or plan for future consultations.</li> <li>• Funding needs are clearly linked to the Authority’s medium term regulatory strategy, priorities and ways of working.</li> </ul>

2	<p>Address staff turnover and improve staff capability – appoint key positions, fill key skill gaps, and improve culture (allocation of roles and responsibilities, including reviewing delegations, risk tolerance, and operating models; and progress review of consultation and engagement processes with a view to improving perceptions of authenticity and timeliness) and ensure there is sufficient technical capability whether employed, contracted or shared with the industry.</p>	<ul style="list-style-type: none"> <li>• Core positions are filled (i.e. reduce vacancies particularly at SLT).</li> <li>• Reduced staff turnover.</li> <li>• Clear decisions on consultation and engagement approach and improved stakeholder perception of sincerity and meaningfulness of engagement in stakeholder perceptions surveys.</li> <li>• Risk framework developed linked to delegations.</li> <li>• Workforce strategy developed.</li> <li>• Improved stakeholder perceptions about pace of change and appropriate level of caution in stakeholder surveys.</li> </ul>
	<p>Address backlog of Code changes (short term) and, in slower time, review and modernise the Code to make easier to engage with and enable greater flexibility to update standards. To achieve medium term objectives, there might need to be a Code override.</p>	<ul style="list-style-type: none"> <li>• Improve transparency of proposed Code changes and indication of decisions made or timeframe for others to be considered</li> <li>• Consider the merit of a holistic (possibly phased) review of the Code and standards within it (noting this and any resulting actions could take some time).</li> </ul>
	<p>Improve understanding of the links between projects, their resourcing demands and organisation planning and strategy, from team involvement in undertaking projects to the likely implications of addressing recommendations resulting from initial reviews.</p>	<ul style="list-style-type: none"> <li>• Map intended resourcing requirements on projects from inception to implementing any changes (noting uncertainties) and ensure: a) systems allow high-level visibility of internal staffing and relative draw of their time on projects, and b) there are decision points to test scope and timing as projects unfold.</li> </ul>
	<p>Work on key relationships, assigning senior points of contact for key stakeholders.</p>	<ul style="list-style-type: none"> <li>• Identify relationship managers for key relationships. Ensure practices exist for these parties to engage with their counterparts.</li> </ul>
	<p>Review where processes could be more agile and innovative and identify continuous improvement programmes. For instance, leveraging opportunities to improve data exchange processes and considering whether there are opportunities to integrate market and network reconciliation.</p>	<ul style="list-style-type: none"> <li>• Consideration given to a (possibly phased) review of existing processes, key systems and effectiveness of their use. This should include information requests and exchange practices.</li> </ul>

3	Improve culture of review and engagement.	<ul style="list-style-type: none"> <li>Improved or consistently high scoring of questions in the review category in the internal employee surveys "Have Your Voice" (and observed practices externally – e.g. post project reviews and incorporation of lessons learned in future projects).<sup>23</sup></li> <li>Improved scores in stakeholder perception surveys.</li> </ul>
	Improve knowledge management practices.	<ul style="list-style-type: none"> <li>Identify barriers to intended practices being modelled and agree targeted solutions (e.g. review, training, incentives and support).</li> </ul>
	Provide a helpful IT environment.	<ul style="list-style-type: none"> <li>Review IT systems, including those used by service providers to identify opportunities for improvements.</li> </ul>

## 6.2 Future funding considerations

In considering potential funding scenarios, we suggest considering:

- The **funding base** from which to vary, such as the funding agreed in Budget 2023, the baseline funding stated in the Authority's 2022/23 and 2023/24 levy funded appropriations consultation document, or the 2022/23 actual expenditure. Adjustments relating to expense transfers between years could also be considered.
- Inflationary adjustments:** for instance, inflation to costs where this is currently built into contracts or potential to other expenses.
- Volume or service level changes:** where the Authority is expected to undertake a greater number or fewer activities or services.
- Cost savings or efficiencies:** this could be a result of potentially new ways of doing things/shifts in the operating model or reductions in certain activities (e.g. in-sourcing certain activities reduce the unit cost where contractors are currently relied on or improved IT systems or processes could result in efficiencies). This could also extend to supplier contracts potentially.
- Funding profile:** for instance, some pressures may be more immediate and others enduring, while certain cost efficiencies may require initial investments first. This together with the **scope** of application of inflation, volume and efficiency adjustments, which we expect the Authority's medium-term strategic thinking to inform, would result in a different shape of funding needs over time.

<sup>23</sup> The Authority advises that as of August 2023, it has engaged a project management specialist to improve project management practice.

We also suggest that further work on funding scenarios estimate associated funding needs by business unit and cost category to show how the use of funding under any scenario:

- prioritises resourcing by business unit (which below can then be mapped at a high-level against the Authority’s statutory functions, noting certain business units contribute a number of functions)
- relates to intended shifts in the way the Authority operates (including the mix of in-sourced personnel costs relative to contractors).

This work would enable detailed underlying assumptions associated with funding scenarios to be incorporated into funding estimates based on understanding for each scenario:

- Which areas of activity or functions are being prioritised. That is where investments are being made, new work is being taken on, or work is being delayed, dropped, or delivered differently. This would ideally be informed by the Authority’s medium-term regulatory strategy.
- The resourcing for each business unit and broadly how those resources will be applied. This could be informed by outlining the production costing for key elements (that is how resourcing from across teams contribute to key outputs and activities).
- What each business unit will deliver relative to pre-levy consultation levels.
- How activities will be delivered differently and the short and longer-term cost and expected outcome implications of this. This includes what will be delivered jointly with other parties and what the funding implications are. An input-output or Investment Logic Mapping exercise could help link this with the medium-term regulatory strategy.
- What the key risks associated with this level of funding are, and associated priorities and ways of working.

Table 14: Mapping of statutory function to core area of work in the Authority

<b>Statutory function (section 16 of the Act)</b>	<b>Core area of work (Authority groupings)</b>
Maintain a register of industry participants and to exempt individual industry participants from the obligation to be registered.	‘Owned’ by the Communications and Engagement team. Other teams contribute, including Compliance and Legal. <sup>24</sup>
Make and administer the Code.	Policy, Network Pricing – make the Code changes. Supported by other teams, such as Legal and Communications.
Monitor compliance with the Act, the regulations, and the Code, and to exempt individual industry participants from the obligation to comply with the Code or specific provisions of the Code.	Legal, monitoring & compliance.

<sup>24</sup> For example, applications and requests to change entries on the register are assessed by subject matter experts, including Compliance and Legal.

<b>Statutory function (section 16 of the Act)</b>	<b>Core area of work (Authority groupings)</b>
Investigate and enforce compliance with Part 2 and Part 4 of the Act, the regulations made under the Act, and the Code.	Legal, monitoring & compliance.
Investigate and enforce compliance with Part 3 of the Act.	Legal, monitoring & compliance.
Undertake market-facilitation measures (for example, providing education, guidelines, information, and model arrangements), and to monitor the operation and effectiveness of market facilitation measures.	Policy, Network pricing with some aspects falling under monitoring & compliance. <sup>25</sup>
Undertake industry and market monitoring, and carry out and make publicly available reviews, studies, and inquiries into any matter relating to the electricity industry.	Legal, monitoring, compliance.
Contract for market operation services and system operator services.	Commercial and support (support for example comes from Policy, Communications and Legal).
Promote to consumers the benefits of comparing and switching retailers.	Commercial, Policy and Communications support.
Undertake measures aimed at protecting the interests of domestic consumers and small business consumers in relation to the supply of electricity to those consumers.	Policy primarily but with some aspects falling under communications, monitoring & compliance. <sup>26</sup>
Perform any other specific functions imposed on it under this or any other Act.	-

## 6.3 Section recommendations

**Recommendation 1(b)** for the identified areas for improvement, **report** on the Authority's relevant work and progress (with potential indicators of progress to consider and prioritise presented by tier):

*Tier 1: the most significant matters for the Authority, important for meeting statutory objectives*

1(b)(T1i) Improve stakeholder perception of reliability in survey of electricity industry participants perceptions (and consumer perceptions in survey of residential electricity consumer perceptions) undertaken for the Authority's annual report.

1(b)(T1ii) Clear communications about the focus and workplan for the Future

<sup>25</sup> For example, education sits within compliance.

<sup>26</sup> For example, communications may assist with accessibility, monitoring provides insights and reviews, and education sits within compliance.



Security and Resilience work programme, with prioritised resourcing for this work (as is being observed at present and was indicated in the levy consultation)

1(b)(T1iii) Agree mapping of relative roles across agencies, where agencies will work together and role of the Council of Energy Regulators (e.g. MOUs and TORs).

1(b)(T1iv) Feedback on nature of relationship improving from key parties involved.

1(b)(T1v) Medium term regulatory strategy developed.

1(b)(T1vi) Improved stakeholder perceptions of future focus in stakeholder perception surveys.

1(b)(T1vii) Medium term regulatory strategy developed, with prioritisation framework and how this will be applied, levers available, intended ways of working with others.

1(b)(T2viii) Clear forward work programme or plan for future consultations.

1(b)(ix) Funding needs are clearly linked to the Authorities medium term regulatory strategy, priorities and ways of working.

*Tier 2: significant matters for the Authority*

1(b)(T2i) Core positions are filled (i.e. reduce vacancies particularly at SLT).

1(b)(T2ii) Reduced staff turnover.

1(b)(T2iii) Clear decisions on consultation and engagement approach and improved stakeholder perception of sincerity and meaningfulness of engagement in stakeholder perceptions surveys.

1(b)(T2iv) Risk framework developed linked to delegations.

1(b)(T2v) Workforce strategy developed.

1(b)(T2vi) Improved stakeholder perceptions about pace of change and appropriate level of caution in stakeholder surveys.

1(b)(T2vii) Improve transparency of proposed Code changes and indication of decisions made or timeframe for others to be considered.

1(b)(T2viii) Consider the merit of a holistic (possibly phased) review of the Code and standards within it. (noting this and any resulting actions could take some time).

1(b)(T2ix) Map intended resourcing requirements from projects from inception to implementing any changes (noting uncertainties) and ensure: a) systems allow high-level visibility of internal staffing and relative draw of their time on projects and, b) there are decision points to test scope and timing as projects unfold.

1(b)(T2x) Identify relationship managers for key relationships. Ensure practices exist for these parties to engage with their counterparts.

1(b)(T2xi) Consideration given to a (possibly phased) review of existing processes, key systems and effectiveness of their use. This should include information requests and exchange practices.

*Tier 3: more discrete issues we suggest should be more easily addressed by the Authority*

1(b)(T3i) Improved scoring of questions in the review category in the internal employee surveys "Have Your Voice" (and observed practices externally – e.g. post project reviews and incorporation of lessons learned in future projects).<sup>27</sup>

1(b)(T3ii) Improved scores in stakeholder perception surveys.

1(b)(T3iii) Identify barriers to intended practices being modelled and agree targeted solutions (e.g. review, training, incentives and support).

1(b)(T3iv) Review IT systems, including those used by service providers to identify opportunities for improvements.

**Recommendation 3: undertake further work in order to develop funding scenarios** based on an understanding of:

1. Which areas of activity or functions are being prioritised. That is where investments are being made, new work is being taken on, or work is being delayed, dropped, or delivered differently. This would ideally be informed by the Authority's medium-term regulatory strategy.
2. The resourcing for each business unit and broadly how those resources will be applied. This could be informed by outlining the production costing for key elements (that is how resourcing from across teams contributes to key outputs and activities).
3. What each business unit will deliver relative to pre-levy consultation levels.
4. How activities will be delivered differently and the short and longer-term cost and expected outcome implications of this. This includes what will be delivered jointly with other parties and what the funding implications are. An input-output or Investment Logic Mapping exercise could help link this with the medium-term regulatory strategy.
5. What the key risks associated with this level of funding are, and associated priorities and ways of working.

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<sup>27</sup> The Authority advises that as of August 2023, it has engaged a project management specialist to improve project management practice.

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# Appendix A Key inputs to our review

We discuss the documents received to inform our review, interviews held and role of the advisory panel.

## Documents received

To inform our analysis, in addition to publicly available information, we requested and reviewed documents from:

- MBIE in relation to its monitoring of the Authority
- the Authority relating to (among other things):
  - its spending and personnel by business unit
  - spending and performance metrics
  - finance policies
  - people, capability and wellbeing policies
  - evaluations, stakeholder surveys and funding documents
  - documentation around certain case studies
  - information management
  - internal benchmarking
  - medium-term strategy
  - organisational chart.

## Interviews held

Our team held interviews with the following as input to the review. We liaised with MBIE and the Authority to agree appropriate stakeholders to meet with. We have attempted to cover international perspectives by, among other things, including international expertise on our advisory panel and reviewing surveys of market participants.

### Within the Authority

- Former Chair and Chief Executive
- Acting Chief Financial Officer and acting Chief Operating Officer
- Senior Leadership Team
- General Manager, Policy
- Finance team
- Policy teams: wholesale markets, retail network markets and operations (market analytics covered with General Manager, Policy)
- Data and information management (CISO) team
- Strategy team
- Commercial team
- People and Capability team
- Legal, monitoring and compliance teams
- Director, Network pricing

- Director, Communications and Engagement
- A former General Manager
- A former Board member.

### **External stakeholders**

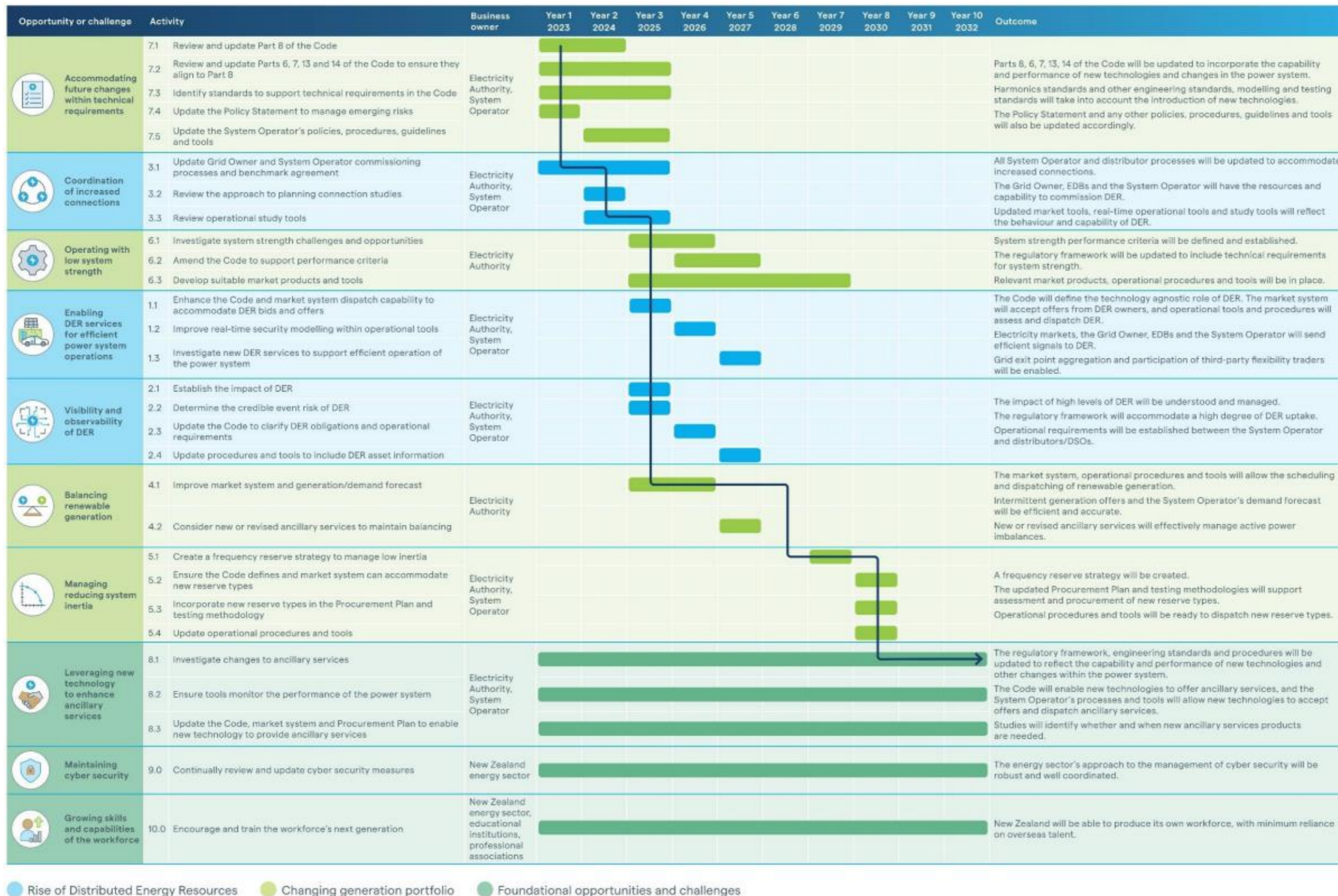
- Chairs of the Security and Reliability Council (SRC), Innovation and Participation Advisory Group (IPAG), and Market Development Advisory Group (MDAG)
- Ministry of Business, Innovation and Employment's Policy and Monitoring teams
- Commerce Commission
- Consultants for Flick Energy and other independent retailers
- Consultant for independent generators
- Electric Kiwi
- Energy Efficiency and Conservation Authority
- Haast Energy
- Meridian
- Mercury
- Octopus Energy
- Transpower (separately as system operator and asset owner)
- Electricity Networks Association
- Vector
- Powerco
- Aurora
- Gas Industry Company
- FirstGas
- Major Electricity Users' Group
- Consumer Advocacy Council
- Concept Consulting
- Bell Gully.

## **Role of Advisory Panel**

In order to test and work through the potential funding options for the Authority, we held two targeted workshops with an Advisory Panel, whose membership was agreed with MBIE and discussed with the Authority based on key relevant perspectives: regulatory operations, Electricity Authority insights (whilst maintaining independence), international energy sector regulatory experience, role of independent regulator and experience with funding reviews.

# Appendix B Future Security and Resilience Roadmap

Figure 22: Future Security and Resilience Roadmap



● Rise of Distributed Energy Resources   ● Changing generation portfolio   ● Foundational opportunities and challenges

Source: Electricity Authority (2022e, p. 12)



## Appendix C Summary of the Authority's Levy Increase Proposal Components

As noted in section 5.3.2, the Authority proposed a \$11.3 million appropriation increase by 2024/25. This increase is outlined in its levy funded appropriations 2022/23 and 2023/24 document (Electricity Authority, 2022a). The Authority's proposed appropriation increase was attributed to eight core workstreams. We list below the total resource requirements of each of these workstreams based on the Authority's analysis:

1. **Enhanced distribution network pricing**—preparing distribution networks for the future and maximising the value of distributed energy resources with regard to pricing reform. This workstream will require 5 FTEs and \$350,000 for expert advice.
2. **Distribution networks work programme**—preparing distribution networks for the future and maximising the value of distributed energy resources with regard to regulatory reform. This workstream will require 5 FTEs and \$450,000 for expert advice.
3. **Real Time Pricing benefits realisation**—realising the benefits of Real Time Pricing. This workstream will require 5 FTEs, \$300,000 for service provider fees, and \$100,000 for contractor funding.
4. **Future security and resilience**—maintaining a secure, stable, and resilient power system in the face of change. This workstream will require 7 FTEs and \$450,000 for expert advice.
5. **System operator oversight**—to enhance system operator oversight. This workstream will require 3 FTEs and \$300,000 for expert advice.
6. **Wholesale market competition**—improve wholesale market competition. This workstream will require 5 FTEs and \$1,400,000 for expert advice.
7. **Delivery of obligations to consumers**—implement the Electricity Industry Amendment Act 2022. This workstream will require 2.5 FTEs and \$140,000 for consultancy fees.
8. **Support function**—includes funding for legal (5.5 FTE), compliance (3 FTE), monitoring (5 FTE), data and information management (3 FTE), communications (4 FTE), and shared services (HR, finance, building costs – 3 FTE). This workstream will require 23.5 FTEs in total and \$100,000 for new devices.

These workstreams and their respective cost estimates from the Authority are summarised in Table 15. The appropriation was proposed to increase incrementally to 2024/25 with \$0.5 million in 2022/23, \$7.8 million in 2023/24 and \$11.3 million in 2024/25 and in all years following.

Under this proposal, the greatest singular expense increase is to wholesale market competition. Half of this funding is estimated to be required in 2023/24. The category requiring the smallest increase is the delivery of obligations to consumers with \$0.5 million requested. The support function requests the second highest level of additional funding, at \$1.9 million, because of the many activities it includes.

Table 15: Attribution of the proposed increased appropriation

<b>Expenses (thousands)</b>	<b>2022/23</b>	<b>2023/24</b>	<b>2024/25+</b>
Enhanced distribution network pricing	\$100	\$675	\$1,050
Distribution networks work programme		\$535	\$1,070
Real Time Pricing benefits realisation		\$560	\$1,120
Future security and resilience	\$400	\$1,450	\$1,450
System operator oversight		\$780	\$780
Wholesale market competition		\$1,080	\$2,160
Delivery of obligations to consumers		\$480	\$480
Compliance		\$210	\$420
Monitoring		\$310	\$620
Data and information management		\$340	\$340
Support function		<b>\$1,388</b>	<b>\$1,855</b>
Legal		\$468	\$935
Communications		\$480	\$480
Shared services (HR, finance, building costs)		\$440	\$440
<b>Total</b>	<b>\$500</b>	<b>\$7,808</b>	<b>\$11,345</b>

Source: The Electricity Authority levy funded appropriations

We have shown the full detail of the original proposed funding increase above but note that in Budget 2023, the 60 per cent option was agreed. Table 16 shows that under this scenario, the future security and resilience component is not reduced but other components are scaled to fit within an envelope of 60 per cent of the full proposed increase.

Table 16: Attribution of the increased appropriation under the 60% scenario

<b>Expenses (thousands)</b>	<b>2022/23</b>	<b>2023/24</b>	<b>2024/25+</b>
Enhanced distribution network pricing	\$100	\$360	\$420
Distribution networks work programme		\$220	\$440
Real Time Pricing benefits realisation		\$290	\$580
Future security and resilience	\$400	\$1,450	\$1,450
System operator oversight		\$300	\$300
Wholesale market competition		\$460	\$920
Delivery of obligations to consumers		\$200	\$200
Compliance		\$105	\$210
Monitoring		\$170	\$340
Data and information management		\$190	\$190
Support function		<b>\$835</b>	<b>\$1,090</b>
Legal		\$255	\$510
Communications		\$240	\$240
Shared services (HR, finance, building costs)		\$340	\$340
<b>Total</b>	<b>\$500</b>	<b>\$4,580</b>	<b>\$6,140</b>

Source: The Electricity Authority levy funded appropriations

# About Sapere

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