

Fortnightly report for the Minister for Energy 21 June 2024

This report summarises items that may be of interest to the Minister for Energy but not necessarily require a formal briefing. Further information on any topic can be provided on request. Substantive items and decision papers will be provided to the Minister in the form of briefings.

Electricity Authority contact: Sarah Gillies, Chief Executive

Mobile: s9(2)(a)

1. Current and upcoming publications and advice

Strategic priority	Title	Purpose	Action and timing
System security and resilience	Review of Common Quality requirements in the Code	As part of the Future Security and Resilience programme we are publishing a suite of three consultation papers that address five of the seven identified issues with Common Quality requirements in Part 8 of the Code.	Intended publication: 25 June 2024
Data for better performance	Consultation: Code changes to amend parts of the Default Distributor Agreement	Finalise decisions on changes to the default distributor agreement (DDA) template, and a related Part 12A clause of the Electricity Industry Participation Code 2010. The purpose is to conduct a follow-up consultation on small but material changes to some clauses of the DDA which we have amended after our original consultation in October/November 2023 and two new proposed clauses.	Board considered: 18 June 2024 Intended publication: 1 July 2024
Monitoring, compliance, education and enforcement	Consultation: Improving [REDACTED]	s9(2)(f)(iv) [REDACTED]	[REDACTED]

		The Authority is working with MBIE to ensure the information request aligns with MBIE's work on a Consumer Data Right for electricity.	
Improving security of supply	Decision: Potential solutions for peak electricity capacity issues	Decision on peak capacity issues and inform of our wider programme of work to support security of supply	Ministerial briefing (BR-24-0024): 26 June 2024 Intended publication: 8 July 2024
System security and resilience	Consultation: Instantaneous reserve cost allocation to groups of generating units	Code amendment to ensure the costs of procuring the ancillary service 'instantaneous reserves' are allocated appropriately.	Board to consider: 21 June 2024 Intended publication: 8 July 2024
Building trust and confidence	Remuneration level of the Electricity Authority Advisory Group	Seek approval of fees to be paid to members of the Electricity Authority Advisory Group (EAAG) under the Cabinet fees framework.	Ministerial briefing (BR-24-0025): 21 June 2024
Building trust and confidence	Electricity Authority delivery of MDAG recommendations to strengthen the wholesale market – programme update dashboard April to June 2024	Publication of the first quarterly update on Authority progress on implementing MDAG recommendations in their report 'Price discovery in a renewables-based electricity system',	Minister to receive a copy w/c 24 June Intended publication: 9 July

2. Consultations underway

Strategic priority	Title	Purpose	Action and timing
	None		

3. Upcoming Electricity Industry Participation Code Amendments

Electricity Industry Participation Code Amendments that need to be presented to the House by the Minister's office **within 20 working days** following the date on which it is made.

Tracking number	Name	Date made	Date of Gazette Notification	Date in force	Due date for presentation to the House
	None				

4. Key external engagements

- Guidance on distributor involvement in the flexibility services market workshop: 26 June
- Meeting with Minister Brown: 26 June
- EA Stakeholder Quarterly update (webinar): 27 June
- Chinese Electricity Council senior officials tour: 27 June
- Consumer NZ CE meeting: 5 July

5. Spotlight: Enabling flexibility and pricing

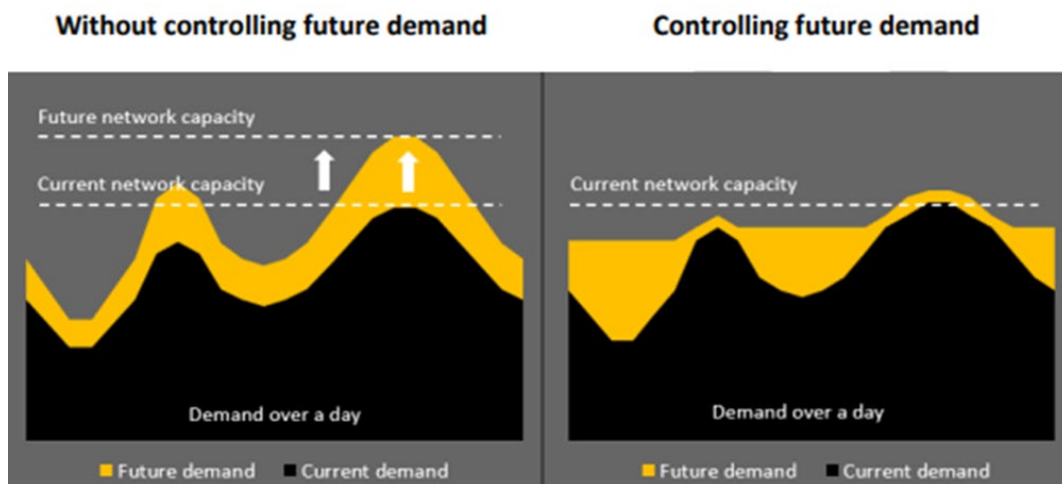
- 5.1. Rewiring Aotearoa released their Electric Homes report in March 2024. They are scheduled to meet with you 27 June to discuss key issues stated in their letter to your office dated 7 May 2024, including their views on regulatory settings and what they consider outdated energy and economic assumptions. The Authority has received a copy of the letter and intends to use this spotlight to respond to some of Rewiring Aotearoa's observations.
- 5.2. The Electricity Authority (Authority) agrees with Rewiring Aotearoa that "electrification and distributed energy are a real win-win-win that ensures cost savings, improves energy security and resilience while also delivering emissions reductions. We also agreed that the democratisation of data is a key enabler of change.
- 5.3. Enabling flexibility and data for better performance are two of the Authority's key priorities. This spotlight updates the Minister on the Authority's work underway to enable flexibility and improve distribution pricing, including updating regulatory settings to unlock the potential of distribution energy resources (DERs) and the customer energy resources to which Rewiring Aotearoa refer.

Enabling flexibility: putting demand-side flexibility on a level playing field:

- 5.4. The increasing uptake of DERs across the system means more organisations and individuals can participate in the electricity system. DER – such as home battery systems, controllable EV chargers and water heaters, or solar generation – provides flexibility in the system by modifying generation and consumption patterns, on an individual or aggregated level. It is often in response to an external signal, such as a price or congestion signal.
- 5.5. Flexibility in the electricity system:
 - (a) offers a more cost-effective way to optimise existing network infrastructure, supports security of supply and resilience, and lowers overall system costs that would otherwise be passed onto consumers
 - (b) is an enabler for the energy consumer of the future who has greater control over their energy use and costs
 - (c) is already being used in parts of the system, but has the potential for an even greater role, and realise more system-wide benefits.
- 5.6. The flexibility services market is still evolving in New Zealand but we are working to ensure it develops quickly as more consumers adopt DER, and more retailers, distributors and other flexibility traders make use of opportunities to provide demand-side flexibility using energy generated or stored via DER.
- 5.7. Providing efficient incentives to adopt or engage with flexibility services is one way to encourage its uptake. The Authority has important work underway focusing on efficient and cost-reflective pricing for both market participants and consumers to ensure flexibility services are rewarded appropriately.

Why do we need flexibility?

- 5.8. New Zealand's electricity demand is forecast to increase by two-thirds by 2050 largely due to the electrification of transport and process heat, and population growth. This has the potential to impact affordability and security of supply.
- 5.9. To meet this increased demand, a 2022 report estimated investments of \$47 billion in distribution network infrastructure and \$18 billion in transmission are needed in this decade and the 2030s.¹ Implementing greater flexibility, including load-shifting, in the system can help avoid costly investment in new network infrastructure to accommodate an increasing level of peak demand, and crucially avoids these costs being passed onto consumers. Flexibility can also reduce the amount of additional generation required to meet higher peaks.
- 5.10. The cost savings for consumers from enabling flexibility should not be understated. The same report estimates New Zealand will have 3.1GW of flexible capacity to meet peak demand in 2030, of which 2GW will be provided by consumer energy resources. The report estimates in the absence of these resources we will likely require an additional \$3 billion in network investment, which is an extra \$120 per household bill each year.
- 5.11. Flexibility can help the system to reliably meet higher peak demand, through demand-and supply-side response. All consumers benefit from this flexibility through improved security of supply (as it reduces the risk of outages due to supply shortfalls). The graphs below show the demand pattern with and without flexible demand response.



¹ Boston Consulting Group, *The Future is Electric*, 2022

- 5.12. Flexibility – whether provided by industrial consumers, residential consumers or generators – also supports a more resilient system. Consumer energy resources – particularly household batteries or EV vehicle-to-grid systems – that contribute to flexibility, give consumers resiliency against adverse events through their own power generation, should there be unplanned outages or issues on the network from bad weather or natural disasters.
- 5.13. The electricity system typically relies on fossil-fuelled generation to meet peak demand. Having fewer and smaller peaks through load-shifting decreases the need to rely on gas. Furthermore, by reducing the costs of electrification, flexibility will help reduce emissions in the transport and industrial sectors and help achieve New Zealand’s climate goals.

Flexibility is a key enabler for the consumer of the future

- 5.14. A flexible electricity system allows consumers to respond to changing demand and grid conditions by either feeding power back into the grid from an energy storage system – such as rooftop solar, hot water system or EV charger – or by reducing demand by shifting electricity use to off-peak times.
- 5.15. For example, the future a consumer arrives home from work and plugs in their EV(s). The consumer contracts with a flexibility provider to ensure their EV is charged in the early hours of the morning when there is plenty of supply and electricity is cheapest. A different flexibility provider controls their hot water cylinder, which uses the cheap electricity from the rooftop solar panels to heat water in the middle of the day. Excess electricity produced by the solar panels during the day is stored in the consumer’s home battery system. The consumer’s retailer manages the discharge of the battery and export to ensure this occurs when it will be most useful to the local distribution network.
- 5.16. During outages, the consumer uses one of the EV batteries to power their house so their electricity supply isn’t disrupted. In this future scenario, the consumer is paid by their EV flexibility provider to discharge the EV to provide power to neighbouring houses in a neighbourhood-wide outage.

Enabling flexibility: the Authority’s work programme

- 5.17. The Authority’s work programme for enabling flexibility is outlined in the tables below.
- 5.18. Table 1 outlines the projects to reduce regulatory barriers to investment and innovation. Table 2 is an extension of this with a focus on projects underway to promote market mechanisms and cost-reflective network prices to enable flexibility. Table 3 rounds this out, setting out the projects that will improve transparency and access to better information to enable demand- and supply-side flexibility.
- 5.19. These projects will contribute to promoting competition across the system to ensure affordable electricity, enable the electrification of the economy and EV infrastructure and importantly support a reliable supply of electricity to all consumers.

Table 1: Enabling flexibility through reducing regulatory barriers to innovation and investment

Project	Description	Outcome
<p><i>Updated guidelines on Code exemptions to support industry trials</i></p> <p>May 2024</p>	<p>The updated guidelines include how Code exemptions can be used to support industry trials and new guidance for potential applicants.</p> <p>Code exemptions create a safe environment outside of the standard regulatory framework to test innovative products and services, including those that support greater flexibility in the electricity system.</p>	<p>Competitive-affordable</p> <p>Consumers benefit from more choice through more innovative products and services being offered.</p>
<p><i>Draft guidance on distributor involvement in flexibility market</i></p> <p>May 2024</p>	<p>This guidance seeks to encourage a competitive flexibility services market and avoid the real and perceived risk of distributors leveraging the advantages of their monopoly position into the adjacent flexibility services market.</p> <p>The guidance seeks to give flexibility traders greater confidence to enter the market and participate in what is a level playing field.</p> <p>We are currently seeking feedback on this guidance.</p>	<p>Reliable-competitive-affordable</p> <p>Increased consumer choice (and control) through more flexibility services, which in turn will lead to downward pressure on prices and improved reliability.</p> <p>Increased confidence in competition in the flexibility services market</p>

Table 2: Enabling flexibility through cost-reflective market and network price signals

Project	Description	Outcome
<p><i>Real-time pricing and dispatch notification implemented (November 2022)</i></p>	<p>In 2022 we introduced real-time pricing into the wholesale electricity market to deliver accurate and reliable spot prices each half-hour trading period.</p> <p>This supports greater demand-side flexibility by:</p> <ul style="list-style-type: none"> encouraging retailers to offer innovative new products, eg. time-of-use pricing which can help consumers reduce costs 	<p>Reliable-competitive-affordable</p> <p>Consumers benefit from more retail products and ability to take more control over their energy use and reduce their electricity bill.</p>

Project	Description	Outcome
	<ul style="list-style-type: none"> enabling retailers and consumers on wholesale price contracts to respond to price signals and shift demand away from high periods. enabling more renewable energy by providing a low-cost means for small providers, eg, residential solar and battery systems, to bid and offer their resources into the wholesale market. 	
<p><i>Cost-reflective distribution pricing: guidance for distributors (ongoing)</i></p>	<p>Distributors are encouraged to reform their pricing to be more cost reflective. This means lower prices for consumers to use electricity off-peak, higher rates when demand is at peak.</p> <p>To date, we have used guidance, open letters and scorecards as tools to encourage distributors to move towards more efficient pricing. We have been clear with distributors about the outcomes we expect to see and while our proportionate approach is working, we are considering more directive measures.</p>	<p>Reliable-competitive-affordable</p> <p>Consumers incentivised to shift their demand to off-peak periods when there is spare network capacity and saves significant costs by avoiding future investment.</p>
<p><i>Developing a proposed Code amendment on connection pricing (October 2024)</i></p>	<p>We are developing a proposed Code amendment to ensure connection pricing is set at an efficient level. We have established a technical group to test the workability of solutions. Members have been appointed and the group will meet soon.</p>	<p>Competitive-affordable</p> <p>Enabling access seekers and distributors to optimise their investments, resulting in better network utilisation and lower costs to consumers.</p>
<p>s9(2)(f)(iv)</p>	<p>[Redacted]</p>	<p>[Redacted]</p>

Table 3: Enabling flexibility through transparency and access to information

Project	Description	Outcome
<p>s9(2)(f)(iv)</p> <p>[Redacted]</p>	<p>[Redacted]</p> <ul style="list-style-type: none"> ■ [Redacted] ■ [Redacted] ■ [Redacted] 	<p>[Redacted]</p>
<p><i>Improving transparency of flexibility products in the hedge market (June 2024)</i></p>	<p>Code amendments to improve the transparency of the over-the-counter hedge market information disclosure requirements.</p> <p>The previous Hedge Disclosure Obligations were enacted in 2009 and did not capture many of the innovative products that participants are now using to mitigate wholesale market risk.</p> <p>The changes will enable more retailers to offer time-of-use plans, and more participants such as retailers, flexibility traders and distributors to offer incentives for consumers looking to engage in flexibility and load-shifting.</p>	<p>Reliable-competitive-affordable</p> <p>Consumers benefit from increased transparency and increased incentives to engaged and be active in their energy use and demand response.</p> <p>More visibility for all market participants about how they are managing their risk.</p> <p>Increased confidence in the market.</p>
<p>s9(2)(f)(iv)</p> <p>[Redacted]</p>	<p>[Redacted]</p>	<p>[Redacted]</p>

Project	Description	Outcome
	<p>We've updated information requirements in the electricity registry for greater transparency on the different types of solar or solar and battery arrangements present on the network and in the electricity registry.</p>	<p>of grid and network conditions and more sharing of consumption data</p> <p>More visibility of where distributors can access stored energy on the network.</p>
<p>s9(2)(f)(iv)</p>	<p>[Redacted]</p> <p>[Redacted]</p> <p>[Redacted]</p>	<p>[Redacted]</p> <p>[Redacted]</p>
<p><i>Code amendment omnibus #3 consultation May 2024</i></p>	<p>A proposed Code change to make it quicker and easier to install customer energy resources. The proposed change intends to improve the information available to distributors and flexibility service providers.</p> <p>The electricity registry holds information about connections on the network that could be useful for distributors and energy resource installers, but the visibility of the connection information could be improved.</p> <p>Consultation has closed and analysis of feedback is underway. A Board decision is expected in July.</p>	<p>Reliable-competitive-affordable</p> <p>Consumers gain greater access to DER and more control over their energy use.</p> <p>Increased connection information will mean distributors can work faster and easier with installers of distributed generation (DG) assets, getting DG such as solar and battery systems added and installed into homes and businesses quickly and efficiently.</p>

Market products are incentivising flexibility

- 5.20. There are already some retail market incentives in place to stimulate demand response and load-shifting, help address winter peak issues and reward small consumers participating efficiently using DER.
- 5.21. For example, time-of-use pricing for customers to shift load to off-peak periods:
 - (a) Electric Kiwi offers one hour of free off-peak hour a day
 - (b) Contact Energy has deals which offer free power from 9am–5pm during the weekend, or free power 9pm to midnight.
- 5.22. Other innovative incentives include Octopus Energy’s offer of buy-back rates of 40 cents/kWh to households feeding power back into the network in peak demand periods during winter – quadruple the normal rate for power sold back to the grid.
- 5.23. In addition, Contact Energy customers are able to opt-in to its Hot Water Sorter Programme now being rolled out, which allows Contact to switch off hot water cylinders during times of the day when there is a high electricity demand.
- 5.24. This shows the wholesale electricity market working effectively to provide retailers with incentives to stimulate flexibility. These retail offerings are an example of retailers responding efficiently to high wholesale prices at times of peak demand.