10 July 2025

Electricity Authority

To: decentralisation@ea.govt.nz

Re: Consultation Paper – Our Future is Digital

Terms and Conditions

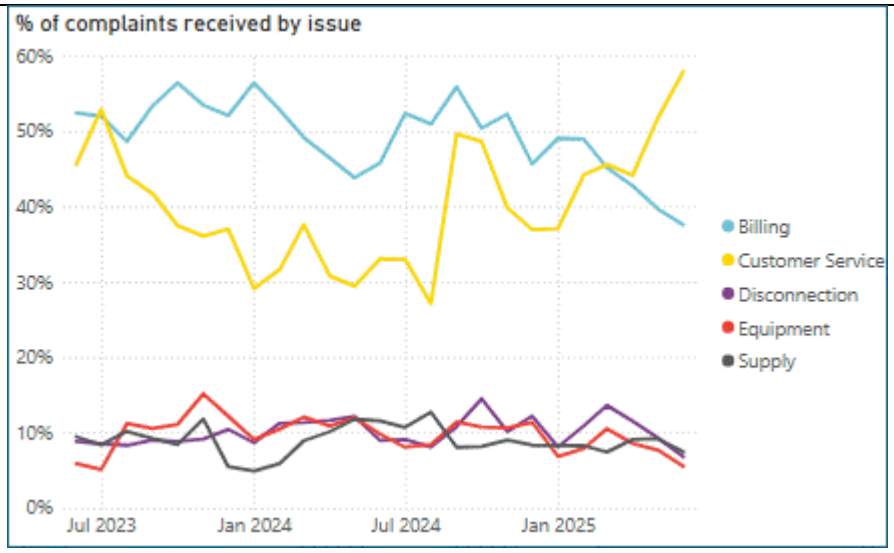
We will publish your name and organisation (if this applies), but not your contact details. If you think we should not publish any part of your survey response, please tell us which part shouldn't be published and why. Please note, all survey responses, including parts you've asked not to be published, can be requested under the Official Information Act 1982. This means we would be required to release all surveys in full, unless there was a good reason under the Act to withhold it. We would consult with you if this meant releasing information you asked not to be published.
I understand : Agreed

Submitter: Utilities Disputes Limited

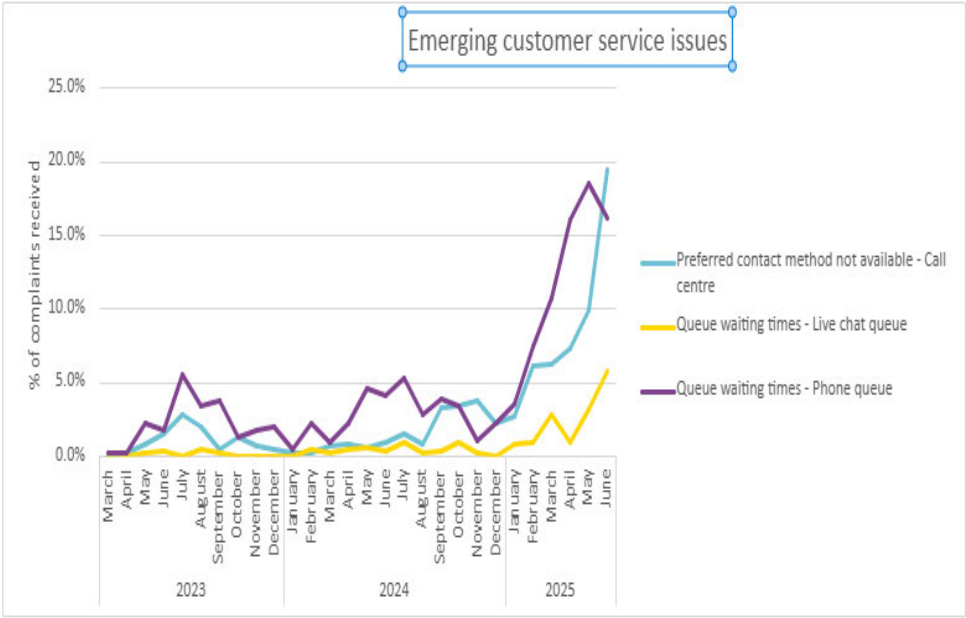
Responding as: Energy Complaints Service (see s 95 of the Electricity Industry Act 2010)

Representative: [redacted]

Q1. What could stop or slow digitalisation of the electricity system? What would make it successful? How far should digitalisation go?	The process of digitalisation, that is the use of new technologies to make New Zealand's energy system smarter and more efficient must be fit for purpose. For the consumers, fitness for purpose will in part mean that any new system responds to their needs and can respond to difficult cases. UDL has seen an increase in customer service complaints, so much so that customer service is now ahead of billing as the most common complaint issue:



UDL at this stage suspects this may be due to change in business practices towards an increased reliance on digitalised and automated systems. It is an area we will be investigating further but believe it is relevant to share at this stage. Early indications suggest this shift may directly impact the customer service consumers receive and generate increased complaints as many consumers are required to shift from their preferred contact channels:



UDL therefore recommends new systems be trialled and tested before roll out. Testing should include a wide cross section of the community inclusive of differing consumer groups such as older generations who are not always tech savvy, and vulnerable consumers.

Q2. Do you agree with how we have defined 'data' and 'information', especially in the context of making data more visible?	The EA paper differentiates between data and information. Data is raw or unstructured facts and figures, while information is data that has been organised processed and interpreted. However, data is not value free, the choice of what data is collected, how it is used, and who owns it, precedes the collection of data. Experts and academics have varying views of what this process will look like. Some take the view that the public will have little understanding of data collection processes and how their information will be used. Some predict new technologies may funnel the consumer into making particular choices. See generally Pew Research Centre [Janna Anderson and Lee Rainie], *The Future of Human Agency,* Pew Research Agency, 24 Feb 2023. In terms of the language of the paper the stage of "data visibility" is therefore an important one. However, this stage should include an initial step of "ethical discernment". This would consist of an assessment of what data should be visible, how it should be kept, how it should be erased (if at all), and what rights a consumer has over their data and its use, collation, and aggregation. The need for ethical data collection is particularly important for AI technologies, where small data sets can disclose a large amount of information about a consumer. The importance of consent for data collection is seen in a consumer survey by *Ofgem* the energy regulator for Great Britain. Key concerns for the consumer were privacy, security, and the ability to opt in and out of some services: Ofgem, Understanding Consumer Attitudes on AI use in the Energy Sector, Sept 2024, slides 11, 47-49. Work setting ethical standards is in its infancy. New Zealand, for government agencies has a charter: *Algorithm Charter for Aotearoa New Zealand*, July 2020, Link; and a *Digital Service Design Standard*, Link The Office of the Privacy Commissioner has published guidance on AI tools and the application of the Information Privacy Principles, Privacy Commissioner. Australia has a *Voluntary AI Safety Standard*, and a set of *Australia Artificial Intellgence Ethics Principles*, Link - Safety Standard, Link - Ethics Principles Such is the pace of change in AI and in automation that evaluation of such standards and the issuing of new standards will be an ongoing task.

Q3. What data do you think needs to be more visible?	It is recommended the EA should deal quickly with two issues that have been brought to its attention: 1) mandate key requirements on an electricity bill that consumers can understand, including all relevant information such as actual and estimated reads; and 2) ensure consumption data is presented in a format that a consumer can understand. These issues will continue to be important. As billing becomes more complex, with multiple retailers and rates, the formatting and presentation of billing, consumption and export data will be crucial to help the consumer make informed choices. There is a danger that billing could become so complex that consumers will have to engage third parties to interpret their data. While accredited requestors will have a role in helping consumers understand their information and purchase products under the Consumer and Product Data Act 2025, information should still be conveyed so that an ordinary consumer can make their own analysis. However, such is the speed of AI development, it is not clear for how long such processes will be needed. It is not hard to imagine an AI tool will be developed that not only interacts with the consumer's premises, but also interacts directly with market information to assist the consumer find the best plan: see GenLess Smart Homes - the Basics These likely leaps in product development, highlight the importance of industry actors, being equally nimble in changing regulatory and consumer standards. See previous submissions: UDL, *Improving Pricing Plan Options for Consumer Time-Varying Retail Pricing for Electricity Consumption and Supply*, 26 March 2025, 2, 7; *Improving Retail Market Monitoring: Amended Information Notice and Updated Analysis*, 22 October 2024, 5-6; *Code Amendment Omnibus Four*, 15 October 2024, 3-4.

Q4. What challenges do you think we might face in trying to increase visibility? What considerations need to be given to data privacy or cybersecurity? How could increasing visibility create more opportunities for consumers, participants and innovators?	Challenges include: 1) As noted above the stage of ethical discernment addressing consumer privacy and control over their information will be an important challenge for the industry. 2) The EA has also highlighted inverter-based technologies, many of which rest on the analysis of data sets, may place stress on the network: *"In addition to providing opportunities, these technologies do, however, pose some challenges. In particular, we expect that co-ordinating the real-time operation of New Zealand's power system to supply electricity to consumers at the level of reliability they want will become more difficult over the coming years. This increased difficulty will be the result of evolving technologies enabling a significant increase in variable and intermittent generation and an increase in bi-directional electricity flows."* EA, *Addressing Larger Voltage Deviations and the Network Performance Issues in New Zealand Power System*, 25 June 2024, 3. 3) AI technologies while able to bring about energy savings, require data centres which consume large amounts of electricity. For the present there are no large data centres in NZ, but this may change. See for an introduction to these issues: BERL, *The AI Energy Paradox: Balancing Consumption and Efficiency,* webpage. 4) AI is able to learn, process, and amend its behaviour almost in real time. This will work both ways. It will help the network become more efficient, but challenges from bad actors will also increase: *"AI acts as a force multiplier in both directions, enhancing threat detection and enabling more responsive protection on the one hand while simultaneously empowering adversaries with tools for sophisticated attacks on the other. AI applications can enable real-time threat detection, automated responses to incidents and enhanced phishing defences. On the flip side, AI-based tools can also be exploited to automate attacks and evade detection. Generative AI tools have been documented as being used by malicious actors for reconnaissance to target organisations, obtain deeper access to target networks, and for malicious scripting and evasion techniques. In view of these evolving threats, the deployment of more proactive AI-enabled cybersecurity systems that are quick to respond to threats is critical for ensuring the resilience of the energy sector. Upskilling, threat mapping and expertise sharing will be essential for keeping the energy sector ahead of the curve."* International Energy Agency (IEA), *Energy and AI- World Energy Outlook Special Report*, April 2025, 208-209 (internal reference omitted).

Q5. What work are you planning or doing to increase visibility within the electricity system? Are you aware of any work that contributes to this goal?	UDL is engaging in an ongoing assessment of how new technologies can help us work better and smarter. UDL sees possibilities in terms of data collation, legal research, complaint summaries and analysis.
Q6. What challenges do you think we might face in increasing interoperability? What other opportunities do you think greater interoperability will bring?	Challenges include: 1) Interoperability of data collection refers to having uniform and shared data sets. Such data collection is key to gaining insight into many aspects of the network. However, it is expensive: *"Creating interoperability between public, private and academic data resources through standardised formats and collaborative frameworks would dramatically enhance both the scope and accuracy of scientific AI models. However, ensuring that these datasets remain open, well maintained and accessible requires substantial and sustained public investment."* *Energy and AI- World Energy Outlook Special Report*, 202. Achieving uniform data sets then rests on industry actors sharing their data. There may be some resistance to this, as industry participants are often in competition with each other. 2) The costs of data collection may also not be evenly shared, with bigger market players having the resources to make changes, while newer participants, who have innovative products, may not have the capital to meet data collation expectations. 3) Uniform data collation may also raise security issues, as uniform and connected systems may increase their vulnerability to outside interference. 4) Interoperability has also been defined in terms of smart homes as the: "*capability of a product or system within the smart home landscape, to interact with other products or systems, by means of exchange of the necessary information and its common understanding, in order to maximise energy savings and to enable (the) electricity system to respond to upward or downward changes in the supply/demand balance in a cost-effective manner."* See R R Quintero and J Viegand, *Interoperability: Connecting the Dots in a Fragmented Digital Energy Landscape*, 29 Nov 2022 (IEA Seminar), slide 3 (material in brackets added).

	An issue here is that household products may not have a standardised and open Application Programming Interface, to enable them to communicate with each other. In the New Zealand context, it is not clear how much this issue can be managed. As a small country we are more reliant on product development in larger markets. See *Interoperability: Connecting the Dots*, slides 9-14. Of interest may be the work of the *Connectivity Standards Alliance* (CSA) which aims to develop and promote universal open standards to ensure all devices/objects are interconnected through the internet (this internet based networking is sometime called the *Internet of Things* (IoT): CSA link 5) The third way interoperability may be used is in terms of the networking between the larger units of the energy sector, such as retailers, distributors, and the system operator. This is the reformation that is underway. Barriers may include: a. Resistance to change, and slowness in taking up new technologies. b. Inadequate on-boarding of new retailers and distributors. c. Lack of the required skill sets in AI technologies, and high demand for those who have these skills. For example, the EA has noted in the battery space that New Zealand may struggle to get experts in this field, see EA, *A Regulatory Roadmap for Battery Storage Systems*, 24 June 2025, 5.2. d. Market development outpacing consumer protections. e. Market development being hindered by outdated regulation. f. Premature installation and uptake, leading to significant failures. g. Consumers unevenly benefiting from the changes. h. The costs involved in the transition. See discussion *Energy and AI- World Energy Outlook Special Report*,109 112, 130 -133, 163.
Q7. What work are you planning or doing to increase interoperability within the electricity system? Are you aware of any work that contributes to this goal?	As new products and services develop UDL is looking for new ways of sharing its complaints data with stakeholders and the public. Access to data, and analysis tools will also help with understanding complaints. At present, analysis of consumption data for the consumer is often out of reach, and for UDL is often cumbersome and time-consuming. UDL has suggested the below framework for the supply of consumption data to consumers under the Electricity Industry Participation Code 2010, 11.32. New AI products may help with putting this framework in place:

	_____ " a. That any data set be accompanied by a plain language explanation of: i. the overall trend of the data set; ii. any unusual consumption periods; and iii. any periods of estimated reads, with a reason why this occurred. b. When a term is noted, it first be set out in full and then abbreviated, with a plain language explanation of what the term means in an accompanying key. c. That every data set have a standard explanation of the purpose of the information, and a list of common causes of increased consumption, e.g. heaters or air conditioning units being left on, and/or a hot water cylinder malfunctioning. d. That the EA forms for supplying consumption data be tested with a cross-section of consumers to assess: i. their practicality, such as if they easily be opened and accessed by the consumer; and ii. if after being supplied such forms, a consumer can understand their usage and pick up any unusual patterns. In this way the EA will be able to evaluate if this aspect of the Code requires further amendment to fulfil the EA's consumer objective. e. That the EA further publicise these forms and highlight the importance of consistency across the industry in their use, and the importance of common definitions of trading period, date and time, flow direction, and that the data is adjusted for daylight saving. f. That because somewhere between 25,000 and 50,000 customers do not have ICP identifiers (i.e. they are within a customer network), that the reference to ICP in the clauses be removed, to allow these customers to have access to their consumption data. g. That clause 11.32A be further amended to make it clear that the data is to be provided to the consumer in both a non-half hourly format and in a half hourly format. It is the half hourly format that is most useful to the consumer as these intervals make it easier to pinpoint issues of concern. h. That a retailer's response to consumption requests be part of the retailer audit process." UDL, *Code Amendment Omnibus Four*, 15 October 2024, 3-4. _____

Q8. What challenges do you think we might face in simplification? How could simplifying create more opportunities?	This question highlights the interrelationships between the terms: data, information, interoperability, and simplification. Simplification is the desired outcome, but as noted above customer trust will depend on the appropriate guardrails being put in place to help consumers manage their data; interoperability will lead to simplification which relies on shared software systems; and shared software systems will also require adequate protections and buy in from industry participants (see q 6). As noted above (see q 3) it is not clear how long a consumer may have to rely on third parties to aid decision-making.
Q9. What work are you planning or doing to increase simplification within the electricity system? Are you aware of any work that contributes to this goal?	UDL, in its submissions on the *Customer and Product Data Act 2025* highlights the role accredited requestors may have in the energy market, helping a consumer identify a best plan, and with the appropriate authorisation changing the consumer to this plan. UDL also highlights, the need for some consumer protection in this area, due the information such requestors will hold and their ability to act on behalf of a consumer, see Exploring a Consumer Data Right and Select Committee: Economic Development, Science and Innovation Committee
Q10. Do you have any other comments on this paper?	UDL notes the main points of this submission as follows: 1) The need for a stage of ethical discernment in the digitalisation framework, where it is assessed how much control a consumer will have over their data and its use. Data is not value free, and consumers should have some agency as to how their data is used, collated, kept, and aggregated. 2) UDL has seen an increase in complaints where customer service is an issue. This may be in part due to increased reliance on automated processes. 3) Processes arising from digitalisation must be fit for purpose. Therefore, they should be tested before roll out with a wide range of consumer groups, and they must be able to address circumstances outside the norm. 4) Just as AI is developing at pace, consumer protections and regulations will have to be equally nimble in their development and amendment. 5) As products develop the presentation of data to the consumer will have to become simpler. A good start would be if the EA quickly

	addresses the issues of the presentation of consumption data and billing information to the consumer. 6) Digitalisation raises complex issues of security both for the consumer and the network. 7) There may be obstacles to digitalisation such as a) industry resistance; b) lack of expertise in new technologies; and c) expense. 8) Digitalisation has the capacity to make the network more efficient. However**,** to round out any analysis the consumption needs of the new technologies, and impact on the network will have to be part of the analysis. 9) Interoperability can be understood in various ways, some of which in the New Zealand context we will have control over, e.g. data collection uniformity, and relationships between industry actors. However, in the area of the compatibility of consumer products, New Zealand may have less oversight. 10) The consumer data right, particularly the role of third-party requestors, may help the consumer in making savings and efficiencies. However**,** such is the progress in AI development consumers may soon have the tools to quickly make their own assessments.