



10 July 2025

Electricity Authority
PO Box 10041
Wellington 6143

Via email: digitalisation@ea.govt

Consultation Paper – Our Future is Digital

The WEL Networks appreciates the opportunity to provide feedback on the Electricity Authority's digital future vision.

WEL Networks (WEL) is New Zealand's sixth largest electricity distribution company and is 100% owned by our community through our sole shareholder WEL Energy Trust. Our guiding statement of strategic intent is to be leading Waikato's energy future, and we work to ensure that our customers have access to reliable, affordable, and environmentally sustainable energy.

WEL believes that successful digitalisation will require updated regulations, cost-effective solutions, and integration of new technologies. Real-time data visibility from smart meters is crucial for network monitoring, DER integration, and consumer empowerment. However, efficiency of data flows and affordability of automated systems remain concerns. Interoperability is essential, particularly for coordinating DER at the low-voltage level, and requires standardised data models and protocols.

WEL is already actively working to enhance visibility and interoperability through smart metering and data analytics. We are also pursuing a DSO model deploying data visualisation platforms and developing a DER integration protocol.

Our responses to the specific questions sought by the Authority are attached, and should you require clarification on any part of this submission, please do not hesitate to contact me.

Yours sincerely



Andrew Maseyk
Regulatory Specialist



Submitter	WEL Networks, Industry participant
-----------	------------------------------------

Questions	Comments
Q1. What could stop or slow digitalisation of the electricity system? What would make it successful? How far should digitalisation go?	One of the biggest threats to digitisation is the lengthy timeframes required to change rules and regulations. The rules and regulations were created in a context of the 1980s and 1990s industry structure and technologies (e.g. a centralised approach to producing, distributing and retailing electricity) and have not kept up with new technologies and approaches. There is also the potential high cost of digital system development and an implementation risk due to limited competency. New platform embedding process within businesses may also slow successful adoption.
Q2. Do you agree with how we have defined 'data' and 'information', especially in the context of making data more visible?	While we agree on the flavour of the types of data to include, the definition is incomplete. As knowledge interprets and applies information, a time or relevancy factor should be added e.g. Historic ICP meter data from 10 years ago has little value or usefulness whereas a real-time last gasp signals from a meter are of great value to consumers and distributors.
Q3. What data do you think needs to be more visible?	<p>Real-time data from smart meters at an ICP level should be available to the distributor. This visibility enables enhanced monitoring of the network resulting in faster restoration and proactive identification of problems (e.g. broken neutral wires). It also enables the ability to determine if the voltage at the ICP is in the acceptable range and to monitor DER on the network (including identification of undeclared distributed energy resources, and ensuring correct operational parameters are maintained).</p> <p>Some data such as state of charge of a BESS or electric vehicle should only be provided on a voluntary basis where the DER is providing a service to another party.</p>



<p>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?</p>	<p>Consumers need more visibility of real-time network conditions (e.g. constraints, prices) preferably in a format that allows an automated response (e.g. demand reduction, BESS charging and discharging).</p> <p>Most consumers will lack the capability to manually process signals or ability to afford automated systems to provide a response, so a very low-cost solution is required.</p> <p>As generally there is only a single source of metering data, operational data like voltage, current and phase angle can be quite costly to procure further adding the challenge of visibility to end users.</p>
<p>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?</p>	<p>WEL Networks has made significant investments in smart metering infrastructure to enhance voltage management across its distribution network.</p> <p>Since late 2022, WEL began collecting five-minute interval voltage data from our SmartBoxes, enabling a shift from traditional static modelling to data-driven decision-making. Despite these advancements, around 30% of ICPs and 25% of transformers on the network lack visibility, primarily due to the inability to install a SmartBox.</p> <p>Addressing this data gap is a priority, with proposals to purchase third-party metering data to improve situational awareness and support DER integration, fault analysis, and voltage compliance.</p>
<p>Q6. What challenges do you think we might face in increasing interoperability? What other opportunities do you think greater interoperability will bring?</p>	<p>The coordination of DER on LV networks requires a different approach to the coordination of grid connected generation on the transmission grid where it can be efficiently centrally dispatched.</p> <p>Dispatch of LV DER will most likely to have multiple levels of control. Localised control to meet local asset operating requirements, but also a centralised control may still be required for upstream network and system flexibility coordination. LV DER coordination is likely to be regionally decentralised with automated coordination of individual LV networks by controllers that operate independently but</p>



	<p>in a coordinated manner with other LV network controllers.</p> <p>Revising the ownership/access of revenue meter data especially the real-time measurements of voltages, currents and status will give benefits. Distributors can improve network performance by getting greater LV visibility from this data.</p>
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?	<p>Smart meter data collected by WEL has become central to identifying voltage excursions and compliance breaches, supporting the development of a digital twin for the network, and informing transformer tap adjustments and phase balancing. And there is further enhancement of visibility in areas with high DER penetration and EV load variability.</p> <p>Interoperability in New Zealand requires that a common information model of data sharing and equipment protocol is defined. e.g. Australia uses CSIP AUS, America an IEEE based protocol, and UK an API based system.</p>
Q8. What challenges do you think we might face in simplification? How could simplifying create more opportunities?	<p>WEL does not believe that simply exposing more meter data will significantly improve the consumers' ability or desire to compare and switch plans. Fundamental changes in the flow of data are required so that relevant data does not need to flow through the existing retailer to third parties who are looking to offer advanced comparison services to consumers.</p> <p>Also changes to market design are required to enable consumers to effectively participate in the electricity product markets. These changes include; the ability to have multiple trading arrangements (including the appropriate integration and coordination) for DER at an ICP.</p>
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?	<p>WEL's work in use of data has been focussed on network solutions to improve the electricity system for all. In early 2024, a data visualisation platform was deployed within WEL to analyse and present smart meter data aligned with network topology. This platform applies statistical</p>



	<p>analytics to identify voltage performance issues at the Zone Substation (ZS), Distribution Transformer (DTX), and Installation Control Point (ICP) levels.</p> <p>We are also delivering on a DSO Roadmap utilising meter data and IoT sensor data collection to digitise our connectivity model. Included in our roadmap is development of a DER integration protocol.</p>
Q10. Do you have any other comments on this paper?	<p>WEL believes that voluntary (opt-in) processes to provide DER flexibility services are superior to compulsory processes.</p> <p>The pace of evolution of Artificial Intelligence (AI) suggests that new products such as AI agents specifically trained to manage ICP energy usage and communicate /respond other AI agents (including DNO AI agents) will create the possibility of a highly decentralised DER environment where local issues are managed locally and information including forecasts, offers etc. are communicated up to other parties. Thus consideration of a highly decentralised future should be included.</p> <p>While not discussed in this paper, any future digitisation solutions are going to need to accommodate current data and cyber security requirements which may create tensions with 'open' and 'simple' solutions.</p>

