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Energy Efficiency & Conservation Authority (EECA)
Te Tari Tiaki Pūngao

By email to STAR@eeca.govt.nz



Tēnā koutou

UNLOCKING THE POTENTIAL OF DEMAND FLEXIBILITY – A RESIDENTIAL PRODUCT PERSPECTIVE GREEN PAPER

Unison Networks Limited (**Unison**) is an electricity distribution business operating in Hawke's Bay, Taupō, and Rotorua. Centralines Limited (**Centralines**) operates in Central Hawke's Bay. As consumer-owned electricity distribution companies, we operate in trust for the enduring benefit of our communities. Strategic planning focuses on delivering sustainable, reliable, and efficient network services, while maintaining a balance between affordability and responsible investment. These initiatives prioritise consumer interests, ensure compliance with regulatory requirements, and support New Zealand's transition to new energy solutions.

Introduction

1. Unison Networks and Centralines appreciate the opportunity to comment on EECA's Green Paper Unlocking the potential of demand flexibility – a residential product perspective.
2. As consumer-owned electricity distribution businesses, we are committed to supporting affordable, reliable, and sustainable energy outcomes for the communities we serve. We recognise that improving residential demand flexibility will play a central role in enabling greater renewable energy penetration, reducing peak demand, and deferring costly network and generation investments.
3. We commend EECA for taking a product-level approach to demand flexibility that complements broader system and market reforms. By focusing on residential devices, such as EV chargers, heat pumps, hot water systems, inverters, and home energy management systems (**HEMS**), EECA is addressing a critical enabler of New Zealand's transition to a low-carbon, consumer-centric energy system.
4. Unison and Centralines support EECA's objectives and believe this work can help create a consistent national framework for flexible device capability, consumer participation, and efficient network operation.

Support for EECA's Approach

5. We strongly endorse the Green Paper's key messages and priorities:
 - a. Product-level focus: Targeting device capability, communications, and operational information is a pragmatic foundation for scaling flexibility.
 - b. Voluntary specifications and approved lists: We support EECA's proposal to build on the successful EV Smart Charger Approved List model to encourage capable devices without imposing unnecessary regulatory burden.

- c. Pilots and trials: EECA's emphasis on learning through practical pilots and consumer research is essential to build trust and identify workable delivery models.
6. These initiatives are well aligned with the direction advocated by Electricity Networks Aotearoa (**ENA**), particularly:
 - a. focusing on flexibility where it addresses clear network needs;
 - b. improving visibility of low-voltage network conditions; and
 - c. applying an attribute-based approach to define flexible devices (e.g., controllability, duration, load impact) rather than prescriptive product lists.

Recommendations

7. Experience from Australia, the UK, and the USA shows that strong early coordination between regulators, system operators, and equipment manufacturers is vital to achieving reliable and scalable demand flexibility. Drawing on those lessons, Unison and Centralines recommend the following actions to strengthen EECA's approach.
8. **I:** Publish voluntary approved device lists for priority products. EECA should expand its approved list model for EV chargers to include hot water systems and inverters. This provides procurement clarity and accelerates the availability of compliant, interoperable products.
9. **II:** Introduce a light mandatory interoperability and fallback requirement for new devices and future-proof new installations by requiring:
 - a. at least one open or widely adopted communication protocol (or published Application Programming Interface - API);
 - b. three essential response modes (shed, shift, export); and
 - c. a local/manual fallback mode if cloud control fails.
10. This mirrors the UK's smart-charger regulations and Australian state DER standards, both of which ensure device controllability and avoid vendor lock-in.
11. **III:** Require devices to expose basic efficiency and operational metadata. Devices should report simple efficiency and state data (e.g. temperature, state of charge, availability window) so aggregators and HEMS can optimise energy use without undermining device performance or consumer savings.
12. **IV:** Strengthen low-voltage network visibility. Building on ENA's submission, we encourage EECA to work with MBIE, the Electricity Authority, and distributors to improve access to meter and LV telemetry data. Visibility is essential to target flexibility to where it delivers the most value.
13. **V:** Embed consumer protection and cybersecurity baselines early. Overseas experience, particularly the UK's Demand Flexibility Service, shows that vulnerable or pre-payment consumers can be disadvantaged if protections are not established from the outset. EECA should publish baseline requirements for data security, privacy, and clear opt-in/opt-out processes.
14. **VI:** Co-design and test market participation models. EECA should coordinate with the Electricity Authority and system operator to ensure aggregators and flexible devices can access both local network and wholesale markets without regulatory duplication. Lessons from California's V2X and demand response pilots demonstrate the importance of clear market participation rules and revenue-sharing arrangements.
15. **VII:** Continue pilot programs to explore value stacking and consumer experience. We encourage expansion of EECA's FlexTalk and upcoming residential flexibility pilots to explicitly test:
 - a. network procurement use cases,
 - b. consumer experience and equity outcomes, and
 - c. revenue-stacking models (retail, network, wholesale).

Implementation Considerations

16. From international experience and aligned with ENA's analysis, EECA should remain alert to several common pitfalls:
 - a. **Over-specification:** Prescribing one protocol too early risks stifling innovation; interoperability and fallback capability are sufficient.
 - b. **Equity risks:** Programs must not exclude low-income or vulnerable households. Targeted protections and clear communication will maintain public confidence.
 - c. **Data fragmentation:** Shared, open metadata standards help ensure EDBs, retailers, and aggregators can all access consistent device information.

Conclusion

17. Unison and Centralines commend EECA for its forward-looking and collaborative approach to unlocking residential demand flexibility. We see strong alignment between EECA's proposals and network objectives for affordability, reliability, and decarbonisation.
18. By combining EECA's product-level work with the practical recommendations outlined above — voluntary approved lists, light interoperability standards, improved visibility, consumer protections, and co-designed pilot programs — New Zealand can accelerate demand flexibility in a way that is secure, equitable, and efficient.
19. We welcome further engagement with EECA and other stakeholders to help develop an implementation roadmap and to participate in pilot initiatives where distribution networks can provide direct value.

Nā māua noa, nā

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Appendix: Summary of Recommendations

#	Recommendation	Rationale	Proposed Action for EECA
1	Publish voluntary approved device lists for priority products (EV chargers, hot water systems, inverters)	Builds on EECA's successful EV Smart Charger Approved List; provides procurement clarity and encourages capable products without regulation.	Expand approved list framework to cover other high-impact product classes.
2	Introduce a light mandatory interoperability and fallback requirement for new devices	<i>UK:</i> Smart Charge Point Regulations ensure controllable, secure devices by default. <i>Australia:</i> AEMO and state standards highlight the risks of uncontrolled DER behaviour.	Require new devices to support one open/widely adopted communication protocol (or API), three response modes (shed/shift/export), and a manual fallback mode.
3	Require devices to expose basic efficiency and operational metadata	Prevents scheduling that increases total energy use. Enables smarter orchestration by HEMS and aggregators.	Mandate that flexible devices provide minimal data points (e.g. state-of-charge, temperature, available duration, efficiency indicator).
4	Improve low-voltage visibility and data access for EDBs	LV visibility is essential to identify constrained feeders and target flexibility where it adds most value.	Work with MBIE and the Electricity Authority to enable safe access to smart meter and LV telemetry data for planning and flexibility procurement.
5	Embed consumer protection, security, and privacy baselines from the outset	<i>UK:</i> Demand Flexibility Service trials show risks to vulnerable and pre-payment consumers. Early inclusion of protections maintains public trust.	Develop baseline guidance for device cybersecurity, data privacy, and consumer disclosure (opt-in/opt-out rights, service guarantees).
6	Co-design aggregator access and market participation pathways	<i>USA/California:</i> Clear rules for aggregator participation and revenue sharing support scale and reliability.	Coordinate with the Electricity Authority and system operator to align aggregator and flexibility market access pathways.
7	Expand and align residential flexibility pilots	Practical pilots test technical, consumer, and commercial aspects before large-scale roll-out. <i>UK and US</i> pilots show value in testing revenue stacking and inclusion.	Extend EECA's FlexTalk and upcoming pilots to explicitly test aggregator models, consumer experience, and equity outcomes.
8	Maintain flexibility and avoid over-specification of standards	Overly rigid standards can slow innovation; interoperability is more important than prescribing a single technology.	Use performance-based requirements and allow multiple compliant protocols or interfaces.