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Electricity Authority
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Via email: connection.feedback@ea.govt.nz

Issues Paper – Exploring plug-in generation

WEL Networks appreciates the opportunity to provide feedback on the above issues paper.

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 supports the development and uptake of plug-in generation, recognising its potential to make distributed energy resources more accessible to consumers. We also consider it important that the framework recognises the cumulative network impacts that could emerge as uptake increases, including impacts on voltage management, reverse power flow, protection coordination and network hosting capacity. We therefore support appropriate technical performance standards, clear capacity and aggregate export limits, and requirements that maintain network and electrical safety without imposing unnecessary barriers on small-scale systems.

WEL also believes there is the need for simple, reliable and timely visibility of plug-in generation connected to networks. We favour a streamlined notification or registration process for systems below an appropriate capacity threshold (rather than requiring full distributor approval in every case), with additional approval requirements applying where aggregate capacity, existing generation or network constraints warrant greater scrutiny. We consider that registration should occur at or before installation and should use the existing Electricity Registry where practicable. Point-of-sale information, reverse-power indicators and other data sources can complement this process but should not substitute for an effective registration framework. This visibility will become increasingly important for network planning, assessing hosting capacity and managing reconciliation and operational impacts as penetration grows.

Overall our preference is for a nationally consistent, simple for consumers, and proportionate to network risk approach to plug-in generation. Consumer obligations should be communicated clearly through coordinated channels involving retailers, distributors, product suppliers and EECA, while requirements for metering, export payments and compliance should reflect the relatively small scale of individual plug-in systems. In our view, the priority for the Authority is to establish a practical visibility and registration framework that gives distributors sufficient information to safely and efficiently manage increasing levels of plug-in generation, while preserving the accessibility and simplicity that make this technology attractive to consumers.

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



Questions on issues regarding plug-in generation

Questions	Comments
Q1. Do you have any views on our characterisation of plug-in generation?	WEL generally agrees with the Authority's characterisation. Plug-in generation has the potential to improve accessibility to distributed energy resources for consumers who cannot readily install conventional rooftop solar. However, the paper may understate the cumulative network impacts that could arise from high uptake, particularly where multiple devices are connected at a single ICP or where penetration becomes concentrated within a neighbourhood. While individual devices are small, aggregate impacts on voltage management, reverse power flow, protection coordination and hosting capacity should be considered.
Q2. What network performance requirements should apply to plug-in inverters in New Zealand, and why?	At a minimum, plug-in inverters should be required to provide: • Anti-islanding functionality. • Voltage and frequency ride-through capability. • Volt-var and volt-watt response modes. • Harmonic emission limits. • Rapid disconnection outside allowable operating envelopes. • Compliance with recognised international inverter standards. These functions are already considered industry best practice and assist in maintaining power quality and network security. The performance requirements should be proportionate to inverter size while maintaining consistency with requirements applied to conventional DER.
Q3. What do you think of the Authority excluding plug-in generation standards from the Code?	WEL supports avoiding unnecessary duplication where equivalent technical standards already exist under the Electricity (Safety) Regulations. However, the Code should retain the ability to reference mandatory technical standards where compliance materially affects network operation and power quality. Complete exclusion may create uncertainty regarding enforceability of network-related performance requirements.
Q4. Do you agree that in the absence of a professional intermediary, it will be challenging to obtain a Part 6-type application from a plug-in generation consumer? Why, why not?	Yes. Unlike conventional solar installations, plug-in generation is likely to be purchased and installed directly by consumers. Consumer awareness of electricity industry obligations is expected to be low, resulting in poor compliance if full Part 6 processes are required.
Q5. For a consumer to connect plug-in generation to their premises, should some form of Part 6-type application process be required? Why, why not?	Yes, but it should be significantly simplified. The process should be proportionate to the network risk presented by small plug-in generation systems and avoid creating barriers that discourage uptake.

Q6. If a form of Part 6-type application process should be implemented for plug-in generation, do you see that is a notification/registration, or an application that requires distributor approval? Why?	For devices below a defined capacity threshold, WEL favours a notification or registration process rather than distributor approval. Distributor approval should only be required where: • Aggregate installed capacity exceeds defined thresholds. • Existing distributed generation is already present. • Network constraints have been identified.
Q7. What information should be required if a registration or application for a plug-in generation unit is to be implemented?	Minimum information should include: • ICP number. • Device make and model. • Inverter make and model. • Maximum AC export rating. • Installation address. • Date of installation. • Consumer contact details. This information should be sufficient for network planning and registry purposes.
Q8. Would participants benefit from a registry that captures information about plug-in generation? Why, why not?	Yes. A registry would improve visibility of DER deployment, support network planning, facilitate future flexibility markets and improve understanding of aggregate hosting capacity risks.
Q9. Should the existing registry be used? Why, why not?	Yes. The existing registry provides a nationally consistent platform and avoids development of additional systems.
Q10. Should entering information about plug-in generation be a requirement only after export has been identified at an ICP? Why, why not?	No. This would create significant visibility gaps and provide retrospective rather than proactive information. Registration should occur at, or before, installation.
Q11. Would the type of information able to be collected at point of sale be sufficient to meet industry needs? Why, why not?	Not by itself. Point-of-sale data provides useful information but does not confirm installation, commissioning or location. It should supplement rather than replace a registration process.
Q12. Should the MEPs reverse power indicator be leveraged in identifying potential plug-in generation export? Why, why not?	Yes. It provides a useful mechanism for identifying unregistered generation and supporting compliance monitoring.
Q13. Do you agree there is merit in considering whether retailers should be the primary customer interface for plug-in generation registration/notification? Why, why not?	Potentially. Retailers typically have the strongest direct customer relationship. However, any approach should ensure distributors receive reliable information regarding DER deployment.
Q14. Do you have any other suggestions on how consumers could be informed of Code requirements for plug-in generation?	Consumer obligations should be communicated through: • Retailers. • Product packaging. • Manufacturers. • Online registration portals. • EECA information campaigns. The messaging should be simple and consistent nationally.

Q15. Should an ability for plug-in generation consumers to receive payment for export be predicated by some form of Part 6 application and approval process? Why, why not?	Partially. Receipt of export payments should require basic registration and compliance with applicable standards. However, a full approval process may be unnecessary for small plug-in systems.
Q16. What measures could be implemented to inform consumers of electricity export at their ICP that is potentially associated with plug-in generation, and what information should this include?	Consumers should be informed about: • Potential exports. • Availability of export tariffs. • Metering requirements. • Registration obligations. • Safety requirements. Retailers and product suppliers are likely to be most effective channels.
Q17. Should consumers be proactively informed of the potential for plug-in generation to export to a network. If so, which party is best placed to undertake this education role?	Yes. The most effective delivery would likely involve a coordinated framework involving retailers, distributors, EECA and product suppliers.
Q18. What issues do you see with more UFE in the reconciliation system as a result of more export from plug-in generation?	Potential impacts include: • Distortion of reconciliation outcomes. • Reduced visibility of actual losses. • Difficulty identifying metering issues. • Increased uncertainty in network planning. Initially these impacts are likely to be minor but may become material under high uptake scenarios.
Q19. Do you agree with our view that plug-in generation export with no measurement enabled can be treated as UFE in reconciliation processes, with no need for formal gifting documentation? Would your view change as plug-in generation increases?	As an interim measure, yes. For small export volumes the administrative burden of formal gifting arrangements is unlikely to be justified. This position should be periodically reviewed as penetration increases.
Q20. If gifting documentation were to be required by a plug-in generation consumer, how could this be facilitated?	It should be facilitated through a simple online process linked to product registration.
Q21. Are there other genuine issues identified by the reverse power indicator?	Yes, including: • Meter wiring errors. • Meter faults. • Unauthorized generation. • Incorrect metering configurations.
Q22. Should the requirement on the MEP to notify the retailer via a reverse power indicator be reconsidered, if more plug-in generation is used? Why, why not?	The requirement should be retained but refined to reduce unnecessary notifications and focus on exceptions requiring investigation.
Q23. Is there a way for a MEP to filter out plug-in generation related reverse power indicators?	Potentially. Advanced meter analytics may allow distinction between small intermittent exports and larger generation installations. Further industry investigation would be warranted.

Q24. Should Part 10 include an exclusion for requiring import/export metering for plug-in generation? Why, why not?	For small plug-in generation systems, yes. Mandatory import/export metering may impose costs disproportionate to expected exports. However import/export metering is likely to be needed if consumer is to receive payment for export volumes.
Q25. Should Part 6 clarify requirements for a plug-in generation system being connected alongside approved permanently fixed DG?	Yes. Export limits should apply to aggregate site export capability, irrespective of generation technology.
Q26. Should the Code clarify limits on the amount of plug-in generation capacity that can be connected at an ICP (noting any standards developed may define limits)?	Yes. Capacity limits would help manage aggregate network impacts and align with hosting capacity assumptions. While also managing the electrical risks the household would experience by not accidentally overloading a outlet circuit as traditional outlet protection is designed for 1 way energy flow if set below a traditional outlet maximum.
Q27. What sources of information could the Authority use to monitor uptake of plug-in generation and/or any issues that may arise?	Potential sources include: • Electricity Registry. • Retailer records. • Product sales data. • Customs/import data. • MEP reverse-power reporting. • Consumer surveys.
Q28. Do you agree with our overall characterisation of the challenges of plug-in generation? Why, why not?	Generally, yes. The paper appropriately identifies the main regulatory, operational and customer-related issues associated with plug-in generation.
Q29. Which of the challenges outlined in this paper present the most pressing issue for the Authority to address?	The most pressing issue is establishing an effective visibility and registration framework that provides distributors with sufficient information to safely manage network impacts while avoiding excessive compliance burdens for consumers.