



Exploring plug-in generation and Code improvements for export limits and connection processes

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1 Submission and contact details

Consultation	Exploring plug-in generation and Code improvements for export limits and connection processes
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2 Executive Summary

Wellington Electricity supports the development of regulation for plug-in generation and the changes to connection and export limit requirements. Reducing unnecessary barriers to small-scale distributed generation will support customer choice and the uptake of renewable energy technologies. However, these changes must be implemented without compromising safety, security of electricity supply, or the reliable operation of the distribution network. Appropriate inverter standards, anti-islanding protection, disconnection settings, and notification requirements remain essential, particularly where generation can be connected without a conventional pre-approval process.

We generally support the proposed changes and clarifications relating to export limits for distributed generation connection processes. WELL have specific requirements for applying the 10 kW default export limit consistently, allowing reasonable provision for future distributed generation uptake in network studies. Distributors already offer both Part 1 and Part 1A application pathways and clarify application assessment timeframes. Distributors must retain the ability to apply lower export limits where these are justified by local network conditions and supported by appropriate engineering assessment.

We do not support Proposal 2, which would prevent distributors from limiting approved equipment to communicating smart inverters or requiring smart inverters and flexible export arrangements through their connection and operation standards. Communicating inverters are an important enabler of greater distributed generation uptake because they allow exports to be managed dynamically rather than maintain static limits. While they can curtail generation during constrained periods, they can also operate in the opposite direction to raise export when there is network capacity available. Dynamic operating envelopes can allow customers

to export above a static limit when additional network capacity is available. This improves customer value, makes more efficient use of existing network capacity, and may help defer or avoid unnecessary network investment.

The Electricity Authority should therefore actively support the adoption of communicating inverters along with platform registration and customer permissions so there are adequate responses to congestion through signals through the development of dynamic operating envelopes. The regulatory framework should remain technology-neutral and include appropriate customer protections, but it should not prevent distributors from using communications-enabled technologies where requirements are transparent, proportionate, and justified by network needs. A framework that combines appropriate safety protections with flexible export capability will better support customers and networks.

Questions	Comments
Q1. Do you have any views on our characterisation of plug-in generation?	
Q2. What network performance requirements should apply to plug-in inverters in New Zealand, and why?	WE* agree with the network performance requirements that the EA has listed. (Anti-islanding, disconnection settings, sustained operation, power quality modes, and ramp rates).
Q3. What do you think of the Authority excluding plug-in generation standards from the Code?	WE* agree that plug-in generation standards should be excluded from the Code. The main issues that need to be solved to allow plug-in solar, are predominantly safety related, not a market issue.
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?	WE* agree that it would be challenging to obtain device registration from a plug-in generation customer. Across other countries where plug-in DG is growing, they are experiencing around 60-80% compliance with registration. The portability of the device also means that the actual location of the device may not be accurate. Enduring these challenges, registration of devices should still be a requirement and regulation should encourage compliance.

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?	WE* agree that a form of application process is required. We encourage a register of size and location of devices.
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?	WE* do not agree that EDBs need to approve all plug-in generation device applications subject to meeting performance requirements. There is likely to be minimal impact on the network (even with an aggregation of devices) unless there are ten 800W plug-in inverters located at one ICP. But until we have some projection of the penetration level, and which areas, it would be difficult to predict the impact on the network.
Q7. What information should be required if a registration or application for a plug-in generation unit is to be implemented?	Retailers would be the best industry participant to determine what information they would require from their customers who choose to use plug-in generation. EDBs would benefit from having visibility of size and location.
Q8. Would participants benefit from a registry that captures information about plug-in generation? Why, why not?	
Q9. Should the existing registry be used? Why, why not?	The existing registry is quite complex and registering of these devices would require a more simple solution due to the passive use of the product/appliance.
Q10. Should entering information about plug-in generation be a requirement only after export has been identified at an ICP? Why, why not?	
Q11. Would the type of information able to be collected at point of sale be sufficient to meet industry needs? Why, why not?	WE* agree that collecting information at point of sale would mean a higher degree of compliance with device registration. Although, this would create a large administrative burden on the retailers (vendors) supplying these devices, who are not directly engaged with the electricity market/Code.

Q12. Should the MEPs reverse power indicator be leveraged in identifying potential plug-in generation export? Why, why not?	Yes. Export should require registration of the inverter as DG and require an application as a Part 1 or Part 1A DG unit.
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?	Yes. WE* agree that retailers should be the primary customer interface. Plug-in generation is a mass market product, that, when compared to solar installations, do not require an engaged customer to participate. Retailers are also able to use the presence of plug-in generation to produce offers, that would directly affect the way customers will use the product. There should be an obligation on retailers to share information about plug-in generation with EDBs.
Q14. Do you have any other suggestions on how consumers could be informed of Code requirements for plug-in generation?	
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?	Yes. WE* agree that any payments for export of generation should be predicated by an application. This would create a greater incentive for customers to register their devices and encourage compliance with this requirement. The intended use of these devices should reduce the import rather than exporting to the network. If the intention of the regulator is to export from these devices then technical requirements will need to be tightened, and devices should comply with Part 6.
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?	
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. It is vital for consumers to be informed of potential for plug-in generation export. The retailer is the best party to undertake this role, as they have the commercial relationship with the customer, and be able to provide generation verification through the MEP file data.

Q18. What issues do you see with more UFE in the reconciliation system as a result of more export from plug-in generation?	
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?	
Q20. If gifting documentation were to be required by a plug-in generation consumer, how could this be facilitated?	
Q21. Are there other genuine issues identified by the reverse power indicator?	
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?	
Q23. Is there a way for a MEP to filter out plug-in generation related reverse power indicators?	
Q24. Should Part 10 include an exclusion for requiring import/export metering for plug-in generation? Why, why not?	
Q25. Should Part 6 clarify requirements for a plug-in generation system being connected alongside approved permanently-fixed DG?	
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. WE* agree that there should be a limit to the amount of plug-in generation at an ICP. The intention of these products is to subsidize customers electricity usage, not to completely offset it. The higher the number of units, the more likelihood that power could be exported and cause voltage issues on the network. Conversely, the higher plug-in devices in one residence could overload the internal

	circuit of the house and cause damage. It would be worth the EA gathering opinions from insurance companies, due to the impact of improper use of multiple devices. Education would allow consumers to plug appliances directly to Plug-in Solar unit(s) similar to EV limits where devices plug into the EV rather than the EV plugging into the home.
Q27. What sources of information could the Authority use to monitor uptake of plug-in generation and/or any issues that may arise?	The Authority could use retail data notice where export occurs without DG registration.
Q28. Do you agree with our overall characterisation of the challenges of plug-in generation? Why, why not?	Yes. WE* agree with the challenges outlined in the consultation.
Q29. Which of the challenges outlined in this paper present the most pressing issue for the Authority to address?	WE* believe that the biggest challenge will be consumer or manufacturer compliance with specific regulations on registration, performance, and limits of export or devices. The inactive consumer market that these products target, and the portability of the devices themselves will mean a large amount of consumer education will be required and administrative burden to monitoring the compliance. Imports from overseas may not meet inverter standards and therefore cause electrical hazards unless only used directly with household appliances.

Questions	Comments
Q30. Do you agree the Code should be amended so the 10kW default export limit also applies to Part 1 applications? Please explain your views.	Yes. WE* support applying a consistent default export limit framework across Part 1 and Part 1A applications. With the widespread use of export limit assessment methodology and bespoke assessment methodologies, any network areas that have network constraints can be highlighted and alternate limits applied. Part 1 application process still gives an alternate route for complex complications that do not meet the fast track requirements.
Q31. Do you agree the Code should be amended so that distributors cannot limit their approved inverter lists to only communicating smart inverters or use their COPS to mandate smart inverters or flexible/dynamic export limits? Please explain your views.	No. Communicating inverters represent the most practical pathway to enabling higher levels of distributed generation while maintaining network security and safety. Preventing distributors from requiring communicating inverters would remove a key tool for efficiently integrating distributed energy resources. This has occurred in overseas jurisdictions. Communicating inverters provide benefits beyond export curtailment during periods of network constraint. They also enable dynamic operating envelopes, allowing customers to export above static export limits when network capacity is available. This can increase customer value from distributed generation while making more efficient use of existing network infrastructure. The Code should be technology-neutral but should not prevent distributors from using modern communications-enabled technologies where these demonstrably improve network outcomes and customer benefits. Restricting distributors' ability to require communicating inverters risks locking the industry into less efficient static export arrangements.
Q32. Do you agree the Code should be amended to allow distributors to 'build in' an extra 10% DG penetration when doing a network study, that may lead to parts of	Yes. WE* support this proposal as a pragmatic approach to account for future distributed generation growth and reduce the frequency of reassessment.

networks qualifying for export limits below 10kW? Please explain your views.	Network studies should reflect realistic expectations of future distributed generation uptake rather than relying solely on currently connected generation. This supports more sustainable network operation and reduces the risk of approving exports which subsequently create thermal or voltage constraints.
Q33. Do you agree that a 10% allowance (as an interim measure) reduces the need for frequent network assessment. If not, what alternative level of allowance or approach should the Authority consider and why?	Yes. A 10% allowance is a reasonable interim approach. It provides a balance between accommodating future growth and avoiding excessive conservatism. While the exact percentage may require review as customer uptake patterns become clearer, the concept of allowing distributors to account for future generation growth is appropriate and should reduce the frequency of reassessments and administrative burden.
Q34. Do you agree the Code should be amended to explicitly require distributors to offer both Part 1A and Part 1 DG application processes? Please explain your views.	Yes. WE* support this clarification. Customers and installers should have access to both pathways where applicable, with clear guidance on eligibility criteria. Explicitly requiring both processes promotes consistency across distributors and improves customer experience.
Q35. Do you agree the Code should be amended to make it clear distributors cannot extend timeframes for Part 1A applications, but should not be penalised by the time taken by the applicant to remedy a deficient application? Please explain your views.	Yes. WE* support this clarification. Timeframes should remain predictable for applicants, while distributors should not be disadvantaged where delays are caused by incomplete or inaccurate information provided by applicants. Our intention is to have an automated approval process for Part 1A and therefore there should be no delays from us or the customer if the application is complete.
Q36. Do you agree with the objectives of the proposed amendments? If not, why not?	Yes, with one exception. WE* support the Authority's objectives of improving consistency, transparency, and efficiency in the distributed generation connection process while facilitating increased uptake of customer-owned generation.

	However, WE* do not support proposals that restrict distributors from requiring communicating inverters or implementing flexible export arrangements. These technologies are likely to be increasingly important in enabling greater distributed generation penetration while maintaining network performance and safety.
Q37. Do you agree the benefits of the proposed amendments outweigh their costs?	Yes. Overall, the proposed amendments are expected to reduce administrative burden, improve consistency of application processes, and provide greater certainty for customers and installers. These benefits are likely to outweigh implementation costs.
Q38. Do you have any feedback on the Authority's assessment of the costs and benefits and the balancing of these as set out in this paper, including any evidence of quantified costs and benefits?	The assessment should consider the benefits of communicating inverters and dynamic export management. Much of the discussion focuses on the ability to curtail exports during constrained periods. However, communicating inverters also enable exports above static limits during periods when network capacity is available. This capability can improve customer outcomes, increase utilisation of distributed generation, and defer network investment. These benefits should be recognised alongside the more commonly cited network management and constraint-management benefits.
Q39. Do you agree the proposed amendments are preferable to the other options? If you disagree, please explain your preferred option in terms consistent with the Authority's statutory objective in section 15 of the Electricity Industry Act 2010.	
Q40. Do you agree the Authority's proposed amendments comply with section 32(1) of the Act?	The proposals are broadly consistent with promoting efficient participation in the electricity industry and facilitating distributed generation uptake.

	However, WE* encourage the Authority to further consider whether limiting the use of communicating inverter technologies is consistent with long-term efficiency objectives, particularly given the increasing role these technologies are likely to play in enabling greater levels of distributed energy resources.
Q41. Do you have any comments on the drafting of the proposed amendments?	