

Submission on:

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

<https://www.ea.govt.nz/news/press-release/consultation-on-plug-in-generation-and-distributed-generation-connection-improvements/>

Considering issues for plug-in generation

We are seeking feedback on whether:

- *plug-in generation might impact network power quality, and what could be done to mitigate any risks*

This should use first principles and require evidence not opinions. In our experience with the sector, there is a wave of institutional bias and institutional inexperience on distributed energy in general, despite the evidence and data being openly available from around the world for years. There is a strong tendency to avoid finding solutions to problems and default to restricting consumer participation in the energy system. On top of this there is a distinct lack of effort applied to integrate consumer energy into the electricity system, as there is no foreseeable benefit to the energy companies from doing so. As an organisation with over 30 different community groups around the country, and an energy expert team that has deep engagement with industry, we cannot emphasise this enough.

These biases should be thought through thoroughly to understand the ramifications of plug in solar on network power quality and safety. Both of these are incredibly important, and a problem solving mindset towards them is equally important which we do not have faith will be undertaken if the direction of this is controlled by energy companies rather than evidence based rules and regulation.

We recommend:

- Understanding the problem using direct evidence and first principles
- Evaluate opinions of energy companies with rigour, requiring evidence for claims and sense checking opinions against that (and other) evidence.

- *a register of plug-in generation devices is needed and how to inform consumers about their obligations*

Should consumers register their toasters too? We say this in jest, but also as an example of institutional biases in the system. Electricity networks are built around diversity, they are built around not knowing when someone might turn on a toaster or

a kettle even though collectively those loads could exceed (briefly) the after-diversity maximum demand of networks. Networks have in previous submissions (See Taskforce 2A,B,C,¹ gone to the extreme of disingenuously stating that batteries are not useful unless controlled by them.

This is, and has always been, obviously false from first principles. The Australian regulator has now realised this in its own to some degree backtracking on the idea of needing VPPs, which is a direction we support which is likely to lead to better outcomes to consumers and more value of flex reaching them.^{2 3}

We raise these examples to convey that there is often a clear difference between what is “needed” and what is “desired by energy companies with vested interests”.

A register of plug-in systems could be useful to have, but only if doing so does not inconvenience consumers or put unnecessary barriers in the way. As with all regulation, the experience of and fairness for consumers must be prioritised.

Therefore we recommend finding ways to do this that is simple and does not get in the way, and if there is no way to do it where it does not get in the way, fundamentally evaluate if it is truly needed or just desired by energy companies. To our original point, consumers do not need to register their kettles even though their power draw will be higher (in consumption) than a plug-in solar or plug-in battery system. We have historically and can today design for diversity that makes the lives of consumers easier.

- *users of plug-in generation will have sufficient information to make informed decisions about exporting electricity, understand the implications of doing so, and how export arrangements could work in practice.*

It is our view that the energy sector in general fails to provide sufficient information to make a fairly competitive and information rich consumer choice environment on energy plans. Improving this across the board could have significant positive impacts for consumers. Doing the same for plug-in solar is a good idea, though should not be used as a reason to delay or make the process of getting systems for consumers more difficult.

¹ <https://drive.google.com/file/d/1a1JHkFhR0FsMAVDU-KVJwgrS-uufsMvq/view>

²

<https://reneweconomy.com.au/passive-home-batteries-deliver-enormous-benefit-to-the-grid-says-aem-o-even-if-not-orchestrated-in-vpps/>

³

<https://www.abc.net.au/news/2026-08-06/virtual-power-plants-uptake-solar-renewable-energy-batteries/106998112>

Consultation on Code change proposals for more efficient connection of distributed generation

Proposal 1:

Expand the 10kW default export limit to include the Part 1 DG application process. This would ensure applicants using the Code's Part 1 process, whose DG does not meet the requirements to use the streamlined Part 1A process for small-scale DG, will still get the financial benefit of being able to export at 10kW. This is providing their installation control point is not shown to be subject to congestion by a network study.

We agree with this.

Proposal 2:

Prevent distributors limiting their approved inverter list to only smart communicating Inverters, or requiring only dynamic or flexible export limits (and therefore by implication, smart communicating inverters), under their connection and operation standards. This would protect consumer choice to retain a static export limit at this stage, rather than being required to accept communicating inverters in anticipation of flexible/dynamic limits in the future.

Dynamic exports are a smart direction for the future

Dynamic export limits, to enable more people to have access to solar exports in exchange for occasional summer curtailment, are generally a good idea that we support. They will be useful to enable more solar on networks, and to help make sure the benefits of solar do not bias towards first movers from a physical network perspective. Encouraging inverters to be installed that can have this capability in future is a direction we support, though creating artificial punishments for a physical environment that does not exist today we do not support.

A 2.5kW limit idea for people without smart inverters is clearly unfair and designed with a bias, regulation to prevent this type of behaviour by EDBs is supported by Rewiring Aotearoa, with some caveats.

First of all, a 2.5kW limit because that is the “after diversity maximum demand” makes no sense because it assumes two things:

- a) that 100% of connections get solar
- b) that 100% of connections do not consume any of the solar they generate

Both of these are ridiculous assumptions. In practice, it is highly unlikely, especially in the coming decade or more, that 100% of buildings will install solar. It is also demonstrably false already today that connections do not consume the solar they generate. Because connections consume some of the solar they generate, the net effect of a 2.5kW inverter on the network is (almost always) less than 2.5kW.

Therefore if this was designed in the first place to be a fair approach, it would start with a higher default limit than 2.5kW. Considering networks spend much of their existence understanding the diversity of electricity patterns, you would think they might know this. There seems to be a clear bias against CER.

Even for a 5kW limit, breaching that would require 50% of homes having solar and also zero consumption. Not something likely this decade or even further out, therefore a clear bias against consumers today without clear justification.

How network capacity for solar is allocated over time is an important equity consideration, for example:

- Do those getting solar systems later (like renters) get less network capacity to export their solar into?
- If a 3 person house installs 5kW, and another 3 person house installs 10kW, does curtailment happen at equal levels to both?
- Is that equal level an equal kW (e.g. minus 2kW off both), or equal percentages (-20% off both).
- If one of those households is 6 people, do they get a higher kW allocation before curtailment than the 3 person home?

We think this allocation consideration should be done by the regulator and not left to distributors to describe. Over time, there may be edge cases where upgrading the network to handle more solar makes economic sense because of the additional bill saving opportunities it will give to consumers on the network, but this will be uncommon. Vital to all of this, is understanding the ramifications on actual bills paid by consumers. When we say this we mean the precise bills paid, not broad statements around “this might increase consumer bills” if the evidence does not support it. Many EDBs (see task force submissions mentioned above) make these statements without providing reconcilable evidence and data to back them up. Consumers should not be biased against based on loosely held unchecked opinions of EDBs.

Proposal 3:

Allowing distributors to include a buffer of 10% extra DG penetration, when performing a network study to assess the hosting capacity of an installation control point or group of installation control points, to determine if a DG export limit lower than 10kW should apply. This would reduce how often distributors need to reassess network hosting capacity.

This seems reasonable if it is 10% of current installations, not 10% of network capacity. For example, for a 400kW transformer, with 20kW of solar installed underneath it, being able to assume 22kW is reasonable, being able to add 20% of the transformer size is not reasonable (80kW). In the same way, assuming 10% higher solar adoption than forecast (e.g. if 20kW is forecast and that equates to 5% of households, buffering for 22kW, makes sense, buffering for 10% of transformer capacity (40kW) or an additional 10% of ICPs (20kW + 40kW) does not make sense.

Proposal 4:

Clarifying that DG applicants must have access to both Part 1A and Part 1 application processes. This would ensure that distributors must offer DG applicants both the streamlined Part1A process as well as the more involved Part 1 process, as appropriate.

We agree with this.

Proposal 5:

Clarifying that distributors cannot request timeframe extensions for Part 1A applications, but that the timeframe 'clock' stops when the distributor is waiting for additional information from an applicant to complete an application. This would ensure notifications from distributors for Part 1A DG applications do not go beyond the 10 business-day Code requirement, and the distributor is not penalised for an applicant taking time to remedy an incomplete application.

We agree with this.