

24 January 2025

Distribution connection price and non-price reforms

Electricity Authority

By email: connection.feedback@ea.govt.nz

Tēnā koe,

Cross submission: interventions need to be limited in the fast track stage

The sheer number of submissions on both the Electricity Authority (**Authority**)'s *Network connections project – stage one* and *Distribution connection pricing proposed Code amendment* consultations highlights the importance stakeholders give connection reform. This is now in a difficult position because we feel that insufficient engagement on option assessment has been done for a constructive consultation to be able to take place and we sympathise with submitters who have expressed strong and diverse positions on the Authority's proposals.

Our approach to reviewing the submissions has been to find common ground between submitters, starting with the problem definition and directly addressing concerns with it. Our cross submission develops a pragmatic way forward that uses ideas from the range of submissions to build on the Authority's initial proposals to achieve its policy intent without undesirable adverse consequences. Given this, we strongly advise the Authority to limit its interventions in the fast-track stage, to allow time to develop its thinking, evidence and sector engagement to be in a better position for the full reform.

The two Authority consultations, the submissions on them, and our thinking in response, are strongly linked. As a result, this cross-submission addresses both consultation papers.

We are committed to working with the Authority and other organisations on the reform of price and non-price aspects of distribution connection policy to ensure a timely least-cost transition to a low-carbon energy future and so optimise outcomes for consumers. Our summary observations are:

Connection growth justifies reform

- The electricity sector in New Zealand is moving from a steady state into a period of sustained growth
- The frequency and number of connection requests is accelerating
- Past practices will frustrate a timely and low cost transition
- Part 4 incentives need to be addressed to encourage connections

Unintended consequences can be avoided

- Efficient pricing will ensure that small customers do not subsidise new connections by large, commercial access seekers
- Commercial mechanisms can manage some of the risk that stranded asset costs will be borne by small customers
- If EDBs can't finance large connections, third parties can invest without requiring access seekers to source capital up-front

Proportionate fast track reforms are achievable

- Load connection requests are more numerous and less complex than generation so can be delivered by less costly regulation
- The primary barriers and policy objective for connection reform relate to *large* generation and load requests so more onerous regulation can be focused on them initially
- Obligation to connect can be reconciled with capital constraints, by limiting the obligation to small customers only

What this means for the Authority's fast-track proposed measures is summarised in the figure below.

Key Proposals	Fast track stage	Explanation
Pipeline for DG and load	Only apply to DG	Confidentiality concerns need more time to resolve. Other parts of the EA package (regulated processes, disputes mechanisms or mutually agreed alternatives) will act as a regulatory backstop.
Obligation to connect	Only apply to small connections. For large connections, restrict to an obligation to augment the existing network to host the new connection.	Where the access seeker is unwilling to fund the connection up front with a capital contribution, the access seeker can agree terms for the connection asset with a 3 rd party.
Pioneer scheme	Only apply to large connections physically possible for the connection to be shared in the future	Balances the risk of cost and complexity whilst addressing first mover disadvantage. This also needs to exclude sub divisions.
Reliance limit	Cap EDBs reliance on capital contributions at current levels excl large customers – i.e. they can't go up but can come down	Meets policy intent to stop EDBs increasing customer contributions, while giving the EA time to develop an economically robust understanding of the efficient level. Must excluded large customers from calculation as these distort the calculation.
LCC	Excluded from regulations	The regulatory intent behind LCCs is precisely to avoid regulation where both parties agree, and should not be constrained. This ensures EDBs have flexibility to respond to unique circumstances, that customers want.

We would be keen to meet with the Authority to develop the ideas in our original submissions and this cross-submission. In the meantime, if you have any questions regarding this submission or would like to talk further on the points we have raised, please contact Emma Wilson (Emma.Wilson@powerco.co.nz).

Nāku noa, nā,



Emma Wilson

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POWERCO

1. A problem definition focused on removing barriers to efficient electrification

While many submitters support the Authority's problem definition, some question the existence of a problem with connections, suggesting that they have not seen examples of access seekers being frustrated by the cost or process for connection.

Rather than focusing on the past, it may be helpful for the Authority to emphasise that the need for connection reform is to ensure a least-cost, timely transition to a low-carbon energy system to build support for change in a period of growth and an acceptance that current pricing and processes will interfere with this.

We note that Electricity Networks Aotearoa and many of its members are direct¹ signatories to the *Sector and Government Energy Transition Framework (Framework)*. As such they have already committed to target:

energy transition concerns specific to the electricity system ... to ensure a resilient, reliable and affordable transition. (e)nabling investment incentives and appropriate regulatory funding to networks to support the transition via necessary network enhancement, expansion, or and non-network alternatives, in a manner that fosters affordability.

Focusing the problem definition on the imperative for least-cost, timely decarbonisation and maximising the role of decarbonisation through electrification will build consensus across the sector about the need for change.

In addition to the above, access seekers have indicated they are frustrated by connection pricing and process, and we note Transpower's observation² that they:

have at times received inefficient requests to connect directly to the grid instead of to a distribution network, where the connection pricing was placing too much cost onto the applicant or developer who wanted to connect to the network.

Transpower's observation, alongside the broad support that access seekers face barriers, does signal some connection reform is needed. The problem definition is forward-looking and is about growth, not about the status quo. As Sapere note in their report for Drive Electric:³

our intention is to describe a future state, rather than be constrained by what can practically be delivered today. Regulators should also be future focused, setting requirements that improve the efficiency of the industry rather than accommodating the weakest performers under the status quo.

1.1 Submissions raise the full range of experiences

Beyond the general claims from others that there is no problem to address, several submitters provide specific case studies to both support or reject the case for change, we summarise these below.

¹ Alpine Energy, Aurora Energy, Clarus, Horizon Energy Group, MainPower, Northpower, Orion, Powerco, Powernet (for Electricity Invercargill, The Power Company and Otagonet), Top Energy, Unison, Vector, Wellington Electricity and WEL Networks

² Transpower submission on Distribution connection pricing proposed Code amendment. p. 1

³ Sapere, Review of the Electricity Authority's proposed amendments to Part 6. Report for Drive Electric. p. 2

Springs Junction EV fast charging – highlights the need for flexibility when there are unique circumstances

Network Tasman helpfully provide a specific case study of their Maruia Feeder and EV Charging at Springs Junction where their deep-connection pricing approach has resulted in efficient outcomes which would not have been achieved if the Authority's initial proposals were in place.⁴

The specifics of the example are that an 80 km single-line radial feeder runs from the Murchison GXP through to Springs Junction. The feeder is operating at full capacity and load growth on the feeder has been static for over a decade. The feeder ends at the northern base of the Lewis Pass, where several charge point operators have expressed interest in installing fast EV chargers but have been deterred by fully funding the network upgrade costs of \$3 million to \$4 million under Network Tasman's existing connection charge policy.

Rather than upgrading the line, Meridian deployed EV chargers supported by three 120 kWh battery energy storage systems which charges during the feeder's off-peak periods, when there is spare capacity, and discharges to power EV chargers during the day.

This project received \$540,000 in co-funding—substantially less than the upgrade cost—and avoided imposing costs on existing consumers. Under the Authority's proposed methodology, this innovation would likely not have occurred, and consumers would instead bear the \$3 million in unrecovered costs.

The specifics of the case study are important, it's a remote feeder with no surplus hosting capacity at peak and no forecast growth where a non-network solution was funded by central government – like the way that the government's rural mobile programme provides funds to remove coverage blackspots.⁵

While it's a great result, it's not generalisable as battery investments of a million dollars are not efficient on other, less remote, networks with future growth, even if their hosting capacity is not capable of accommodating the charging at peak. These scenarios will be common in the future as the electricity system in New Zealand expands by 50 to 100% in the years to 2050. In these cases, it would be more efficient to bring forward growth augmentation to accommodate new load, rather than to allocate all the costs of the upgrade to the first mover.

Diesel being cheaper than electrification – reform shouldn't support uneconomic connections

Similarly Rewiring Aotearoa provide examples of problems with connection pricing to support the case for reform,⁶ including:

An Otago orchard wanting to electrify their irrigation system. However, due to the current connection pricing scheme it is much cheaper for them to continue to burn diesel.

The specifics of this case are equally important, if the lifetime costs of a like-for-like new diesel solution are lower than an efficiently-priced electrical solution, then replacement should be delayed until the electrified alternative has a lower lifetime cost will lower the cost of the transition and ensure that capital is allocated to higher value emissions-reduction schemes. It is not the role of the EDB to cross-subsidise uneconomic connections.

This is consistent with the government's explicit policy for decarbonisation and instructions to the Authority:⁷

⁴ Joint submission from Network Tasman and the Network Tasman Trust on the distribution connection pricing consultation, p. 3

⁵ <https://nationalinfrastructure.govt.nz/rural-mobile/>

⁶ Rewiring Aotearoa Submission to the Electricity Authority: Network connections project: stage one amendments. p. 1

⁷ Statement of Government Policy to the Electricity Authority under section 17 of the Electricity Industry Act 2010: New Zealand electricity industry, October 2024. 31 (c) and (d)

Carbon pricing rules are the primary tool to drive decarbonisation decisions within the electricity system and most sectors of the wider economy. To the extent that thermal generation (including applicable carbon charges) is lower cost than renewable alternatives, it will continue to be selected for use by the wholesale market.

It is not the Authority's role to prefer one form of supply over any other.

The problem that justifies connection reform is not about efficiency alone, just as it is not only about decarbonisation and fairness. It is about enabling a least-cost equitable energy transition in as efficient way as possible.

Clarifying that the problem is removing barriers to efficient electrification rather than tilting the playing field will build consensus and support in the industry that connection reform is necessary and urgent.

2. Unintended consequences are managed by existing tools

Many industry participants point to the risk of adverse unintended consequences from connection reform, some suggesting that these consequences will actually stand in the way of a timely transition to a low carbon economy.

There are 3 principal concerns, that:

1. small customers will subsidise connections for large commercial access seekers against their will;
2. existing customers will carry the risk of asset stranding if large access seekers default before their assets are paid off; and
3. existing customers will suffer if EDBs are required to connect new customers and unable to pay for routine asset management as a result.

These concerns are manageable, and the Authority can refine its proposals to avoid these adverse unintended consequences but still remove barriers to timely, least-cost decarbonisation-through-electrification.

2.1 Cross subsidy

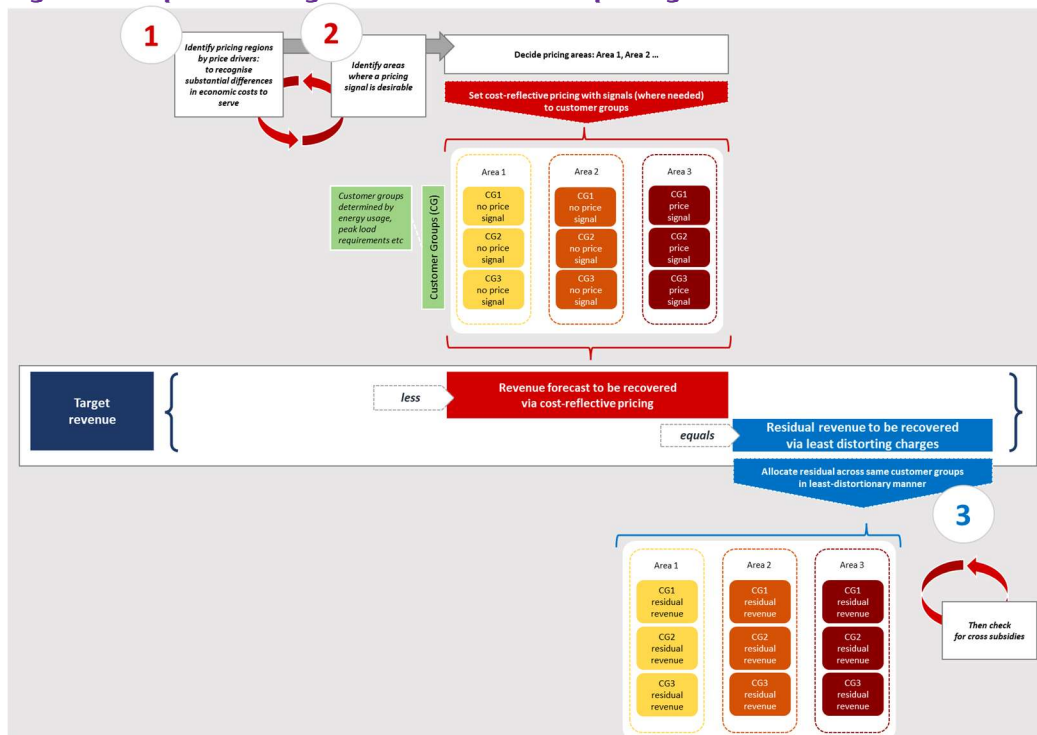
While small customers understandably don't want to pay for large commercial access seekers' connections, there is no need for this to occur. The Authority's distribution pricing principles are explicit that distribution prices should be subsidy free.⁸

The Authority's Distribution Pricing Practice note⁹ demonstrates how cost recovery can be restricted to different geographic areas and then allocated proportionately to different customer groups *determined by energy usage, peak load requirements etc.* Small customers in the same geographic area as a large new connection will be in a different customer group. Concerns about small customers cross-subsidising large connections can be addressed by applying the EA's pricing principles, ensuring this doesn't happen. This is illustrated by the figure below, from the Authority's practice note.

⁸ <https://www.ea.govt.nz/industry/distribution/distribution-pricing/>

⁹ Electricity Authority, *Distribution Pricing: Practice Note Second Edition v 2.2*, October 2022

Figure 1. Steps to setting efficient distribution pricing¹⁰



When EDBs augment their networks to accommodate growth, they size the augmentation to meet growth efficiently and take advantage of economies of scale so that growth meets the hosting capacity of the network when it reaches the end of its economic life, ensuring it doesn't have to be augmented twice. All customers pay for the unused future proofing of the network, in proportion to their usage, as which is just part of running a network efficiently.

2.2 EDBs have mechanisms for dealing with stranding risk

Under Part 4 of the Commerce Act, non-exempt EDBs socialise the recovery of stranded asset costs. This has always been the case and is the trade-off for customers enjoying the economies of scale on electricity networks. Importantly, the Commerce Commission (**Commission**) framework allows EDBs to recover reasonable and prudent costs so the risk that EDBs will connect risky access seekers without protecting existing customers from the risk of default can be well managed. These protection mechanisms include accelerated depreciation of the connection asset, bonds and other prudential mechanisms.

Unlike smaller customers, most large access seekers are on a bespoke (asset based) tariff – which allows the EDB to implement these types of protections against stranding. In Powerco's case, we have bespoke tariffs / pricing for load customers with a maximum demand of ≥ 300 kW – with the size and number of EV fast charges per new connection increasing rapidly it's likely most of these will be on bespoke tariffs in the near term.

Exempt EDBs are exempt because they are owned by their customers, so they naturally have the same prudence and efficiency incentives that are imposed on price-quality regulated companies and use the same commercial mechanisms to manage stranding risk.

EDBs can (and do) apply different contract terms to large access seekers that reflect the risk of them defaulting to protect their existing customers from stranding risk.

¹⁰ Electricity Authority, *Distribution Pricing: Practice Note Second Edition v 2.2 2022*, October 2022, pg 5.

2.3 Decarbonisation through electrification is important and urgent

Several submitters suggest that the combination of an obligation to connect combined with reliance limits to prevent EDBs increasing customer contributions will result in them not being able to finance routine asset management activities, to the detriment of their existing customers.

In our initial submission, we clarify that Part 4 IRIS incentives do not deter efficient connections however, EDBs are having to make trade-offs between connection and other types of expenditure (e.g. resilience) to stay within allowances. We also maintain that EDB incentives for electrification growth would be stronger with a specific regulatory mechanism for funding connections like we have seen in other areas (Transpower, and Fibre for example) and encourage the Authority to encourage the Commission to treat connection expenditure differently during a period of growth.¹¹

Financeability constraints are likely to be limited to large connection requests. If an EDB really isn't in a position¹² to invest in a connection asset for a large access seeker who also couldn't fund it upfront via a capital contribution, then a third party could make the investment and operate an embedded network with bespoke (asset based) pricing to recover the cost of the asset over time. The incumbent EDB would then be limited to facing the cost of any upstream network augmentation.

3. Regulatory implications can be addressed through refined proposals

We recommend below some adjustments to the Authority's fast track proposals to:

- Address concerns of submitters
- Minimise risks of unintended consequences
- Focus reforms on the key barriers to efficient electrification.

These have also been summarised in a table in the covering letter.

3.1 Pipeline management only applies to DG

Transpower's pipeline only applies to generation at present, although they have indicated that they would like to extend it to load connection applications in time. The majority of generators who responded to the Authority's consultation were supportive of the pipeline proposals while several load connection access seekers, in particular EV charge point operators, highlighted that the existence, size and location of a connection application is commercially confidential. Aurora noted:

We have concerns about maintaining access seekers confidentiality if we are required to publish a pipeline. While customer names could be withheld, it is often possible to infer the connecting customer by the location and size of the connection.¹³

¹¹ Powerco's submission on Authority's Distribution Connection Pricing Consultation. Section 5

¹² For example, Network Waitaki has valid reasons for current capital constraints, Network Waitaki, Distribution Connection Pricing Consultation submission. p. 1

¹³ Aurora Energy, Network connections project & distribution connection pricing. Submission on the Electricity Authority's Consultation Papers. p. 9

Given these concerns, connection pipeline obligations should be restricted to generation applications in the first instance to avoid delay but leave time for these important confidentiality issues to be resolved. We note MEUG's concerns about power imbalance in load access seekers' negotiations with EDBs¹⁴ but other parts of the Authority's package, in particular regulated processes and dispute mechanisms or mutually agreed alternatives with a regulatory backstop can address these.

We note several submitters¹⁵ support the good faith requirement on EDBs in the proposed dispute resolution process and their preference for using draft contractual terms over Code in support of this flexible, commercial approach as outlined in our initial submission.¹⁶

3.2 Obligation to connect should be limited to small customers

The genuine concern that some parties likely face capital constraints as a result from the combination of an obligation to connect with a reliance limit could be relieved by restricting the obligation to connect to small connections only.

For large connections where the access seeker is unwilling to fund the connection up front with a capital contribution, the EDB's obligation to connect can be restricted to an obligation to augment the existing network in order to host the new connection, allowing the access seeker to agree terms for the connection asset with a third party as an embedded network. A key theme in our submission,¹⁷ is that small and large customers need to be thought about differently to ensure proportionate regulation.

3.3 Pioneer scheme only apply to large connections, excluding sub-divisions

As we suggest in our initial submission,¹⁸ pioneer schemes usefully solve the problems of first movers but at the risk of cost, confusion and complexity. Several submissions support pioneer schemes if used appropriately alongside efficient pricing.¹⁹ Most EDB submitters were concerned about the low threshold in the proposal. Restricting pioneer schemes to large connections where it is physically possible for the connection to be shared in future, and excluding subdivisions would address the risks identified in submissions.

3.4 Reliance limit capped at current levels, excluding large customers

Most submitters, including Powerco, questioned the economic rationale behind the 47% reliance limit. Given that the policy intent for the mechanism is to prevent EDBs from continuing to increase customer contributions, it would be less controversial for the fast track proposals to cap EDBs reliance of capital contributions at current levels instead (i.e. no change from current practices) while the Authority develops an economically robust mechanism to deal with connection pricing efficiency.

Consistent with the differentiated treatment of large connections above, large connections should be excluded from the calculation of any reliance limit. Individual large customer connections can be highly distortionary within one reporting period and have customer-specific characteristics. For example, we had a large customer request a dedicated line that would never benefit other customers. They would have preferred to own it themselves but couldn't because it was in a road corridor. Powerco offered to build and own it as a regulated asset but with 100% customer contribution (\$0 value in the regulated asset base) because:

¹⁴ MEUG, Distribution connection pricing submission. 12

¹⁵ ChargeNet, Z Energy, and Meridian

¹⁶ ChargeNet, Submission Response on Proposed Part 6 Code Amendments Q 15 and 17

¹⁷ Powerco's submission on Authority's Distribution Connection Pricing Consultation. p.1 and Powerco submission on network connections project stage one amendments p.10

¹⁸ Powerco submission on network connections project stage one amendments p.17

¹⁹ For example: Meridian, Drive Electric, MEUG

- As a dedicated site, potential for early closure due to environmental and commercial reasons, it had a higher stranding risk than other connections
- It had no value to any other customer
- Customer preference to pay up-front with lower on-going costs.

We made the connection on these terms because that's what the customer wanted but it was so big it could have resulted in us breaching our reliance limit if the Authority's proposals were in place. Regulation should not prevent access seekers from paying more for their connections up front if they want to, therefore, it's important that large connections must be excluded from reliance calculations.

In addition to the above, reliance calculations need to include vested assets, as noted in Incenta's advice to Powerco and Unison.²⁰ We note Horizon's submission helpfully explains how vested assets are no different from 100% customer contributions:

*the Electricity Authority's assumption that Horizon Networks has a very low reliance on capital contributions is incorrect. Almost 100% of customer connection CAPEX is funded by the customer that is connecting.*²¹

3.5 Pricing and network information needs to be practical

We note that many access seekers emphasised the importance of practicality in the way that EDBs provide information. In particular many submitters called for information in digital and geospatial form. Sapere note:

*Digital availability of price for different capacity options and location not materially improved by Authority's fast track proposals*²²

This is consistent with our initial submission that we do not support capacity information requirements down to the level proposed without geospatial presentation, as this would be extremely difficult for customers to use and interpret. The Authority should instead focus on the outcome to provide tools the customer can use, to encourage innovation in this space.

4. Process implications can be addressed by differentiating connection types

The implications of our submissions analysis and reconciling industry input are to differentiate the process regulation by connection type to reflect the differences between the costs, needs and complexity of access seekers – whether generation or load and large or small.

There are significantly more load connection applications than generation. As Sapere note for Drive Electric:

*The timeframes proposed for Process 4 and Process 5 appear to be mirrored from the existing Part 6 requirements for distributed generation. This is based on the Authority's assessment that "the processing of DG and load applications is similar." We are unsure if the Authority undertook any assessment of whether the same timeframes made sense for load customers.*²³

²⁰ Incenta Economic Consulting, Electricity Authority's consultation on price and non-price aspects of customer connection. Report for Powerco and Unison. December 2024

²¹ Horizon Energy Distribution Limited (Horizon Networks) submission on Distribution Connection Pricing Consultation. 89

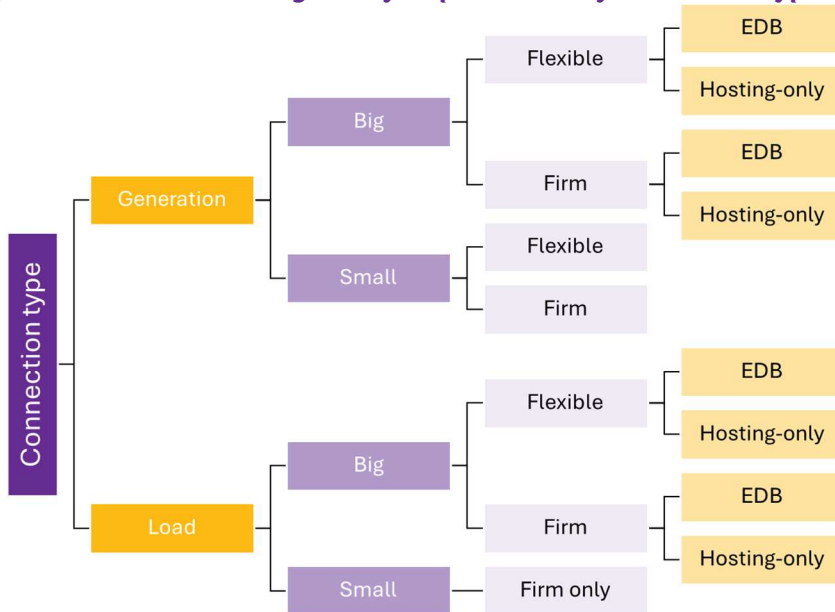
²² Sapere, Review of the Electricity Authority's proposed amendments to Part 6. Report for Drive Electric. p. v

²³ Sapere, Review of the Electricity Authority's proposed amendments to Part 6. Report for Drive Electric. p. 10

Rather than using the same processes for generation and load connection requests, the Authority can minimise the risk of adverse unintended consequences by imposing less costly regulation on load connection requests.

Pictorially, this would mean 11 different regulatory requirements for connection application processes – as set out in the figure below. This categorisation assists to identify where the current barriers are, and where to focus the fast track reform. Conversely, it also shows where the lower priority categories can be deferred to Stage 2. The proposed one-size-fits all process does not reflect these differences or priorities.

Figure 2. Differentiated regulatory requirements by connection type



4.1 Differences between big and small connection requests

Similarly, there are significantly more small connection requests than big ones. The primary policy objective for connection reform relates to large generation and load requests so burdensome regulation should be focused on larger connections only, at least initially.

Counties Energy note

Counties are concerned about the obligation to connect large-scale loads where we are expected to help fund the connection under the proposed pricing changes. Particularly if substation upgrades are required. Large load such as data centres and hydrogen plants that ideally would connect to Transpower can now insist on a distribution connection as this would be part funded, whereas if they connected to Transpower this would be fully customer funded. We suggest the obligation to connect should not be compulsory above 2MW.²⁴

This suggests that 2MW may be a sensible boundary for “large” load connections although the Commission’s threshold for Large Customer Contracts is 5MW. We suggested a 1MW threshold for large load and 300kVA for large generation in our initial submission.

²⁴ Counties Energy, Network connections project: Stage one amendments. p. 3

4.2 Differences between flexible and firm connection offers

Given the policy priority for removing barriers to large generation and load requests, the obligation to offer flexible terms makes most sense for large connection applications. It could be limited in the fast track stage and progressively introduced to smaller applications.

Clarifying that the problem requiring reform is to address barriers to timely and efficient connection in the context of a growing electricity industry suggests that it may not make sense to place an obligation to offer terms for a minimum flexible scheme on small load connection requests as these really just affect the timing of growth-related augmentation.