

20 December 2024

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

Tēnā koe Tim,

Powerco's submission on Authority's Distribution Connection Pricing Consultation

Powerco Limited (**Powerco**) welcomes the opportunity to respond to the Electricity Authority's (**Authority**) consultation on distribution connection pricing reform. The Authority has previously signalled its intention to regulate connection pricing where it is a barrier to timely and efficient electrification as Aotearoa New Zealand, transitions to a low carbon economy.

Powerco is one of Aotearoa's largest gas and electricity distributors, supplying around 360,000 electricity and 114,000 gas connections to urban and rural homes and businesses across the North Island. Our energy networks provide essential services and will be core to New Zealand achieving a net-zero economy in 2050.

We agree with the Authority that there are opportunities to improve network connections, as current processes are creating barriers to connecting to networks and slowing down our progress towards a timely and efficient transition to a low carbon economy. We support regulatory interventions that assist the energy transition and protects our customers. Our key messages include:

- While we understand why the Authority has considered **price and non-price issues** separately, these *must* be considered **together as a package** to avoid duplication of interventions and limit the potential for any perverse outcomes.
- **Fewer interventions which deliver the same outcomes should be the Authority's objective**, especially at the fast-track stage, where the potential for unintended consequences is high due to the pace in which they are being rolled out. It is therefore important to carefully balance regulatory goals and tools with the practical realities of utility operations.
- When regulatory interventions are not **proportionate**, they can drive unnecessary complexity, administrative and compliance costs, into processes which ultimately come at a cost to consumers, the very people regulation is trying to protect. **Proposed interventions require a clear quantified cost-benefit analysis to ensure they are targeted to areas where there are clear net benefits to be achieved.**

We are committed to supporting the successful implementation of these regulations and working collaboratively to ensure they deliver value for customers. If you have any questions on this submission, please contact Emma Wilson (emma.wilson@powerco.co.nz)

Yours sincerely,



Emma Wilson
Head of Regulation and Markets
POWERCO



Powerco submission on Distribution Connection Pricing consultation

Electricity Authority

20 December 2024

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1 Executive summary

The Authority has evidenced genuine issues with EDB connection pricing and Powerco supports the intent

1. Powerco acknowledges the Electricity Authority (**Authority**)'s proposed Code amendments on distribution connection pricing. We recognise the amount of work that has gone into producing this consultation and to align its proposals with the Commerce Commission (**Commission**)'s regime for price-quality regulation of electricity distribution businesses (**EDBs**). We welcome the reform as the transition to a low-carbon economy is of vital importance to us as a nation, because timely electrification is a key lever to making this transition cheaper for customers in the long-run as we grow to zero.¹
2. The Authority has previously signalled its intention to regulate connection pricing where it is a barrier to timely and efficient electrification and has identified issues with distribution connection pricing which are barriers to this objective. Powerco supports regulation where it protects customers and supports a timely and efficient energy transition, so long as it is workable and doesn't result in any unintended consequences that may come at a cost to customers over the longer-term. Our key messages are set out in the following box.

Powerco has specific recommendations about how the Authority can meet its intent with tweaks to improve the workability of its connection pricing reforms, these include:

- **Quantifying and testing cost and benefits** of pricing (and non-price barrier) reforms by connection size, to ensure regulatory interventions are targeted and deliver net benefits without adding complexity and administration burden to the regime, a cost which is ultimately borne by customers.
- Setting **connection charges at the lower end of the efficient range** is better than setting them too high in a **period of growth**. Customers will get the wider benefits of timely electrification as well as lower costs over time by sharing the costs of the network across more people
- Given the state of knowledge on the connection pricing problem is limited, we **support disclosing** the extent EDBs connection prices expect customers to contribute **more than incremental cost** of connecting and serving the customer (**common costs**). But **disagree with the proposed measured reliance** limit and analysis as it's a **poor proxy** for whether the efficiency and/or equity of connection prices have changed.
- Ensure all **regulation is proportionate** and targeted to areas where it's net beneficial for different sizes of connection. Due to high transaction costs for small customers, we recommend that the following reforms only apply to the very **largest** customers (over 1MVA):
 - **Pioneer scheme**
 - **Network capacity costing requirements**
 - **Reconciliation methodology**
 - **Flexible minimum scheme.**
- EDBs are disincentivised to spend money on connections so the Authority should direct the Commission to establish a **mechanism to specifically address the incentive to connect**. For example, a non-fungible use-it-or-lose-it mechanism similar to Transpower or a connection capex fund, similar to Chorus, to support connection uptake for non-exempt EDBs.

¹ www.powerco.co.nz/-/media/project/powerco/powerco-documents/industry-insights/grow-to-zero-white-paper---updated-version.pdf

Benefits of connection pricing reform are wider than efficient network investment

3. The problem definition underpinning the reform is wider than just efficient network investment, it's about delivering timely electrification at the lowest costs to customers. While the Authority's analysis discusses this in its paper, its cost/benefit analysis is purely qualitative.
4. Quantifying the national economic benefits of removing barriers to timely electrification by connection type will enable the Authority to identify which regulatory option is an efficient and proportionate response to the barriers it has identified. This is critical to ensuring there are no unintended consequences as a result of these reforms which will ultimately come at a cost to customers in terms of both slower processes (due to heavy administration burden) and also higher costs driven into the service they receive. It's best to limit reforms to large customers only if this quantification cannot be undertaken.
5. The Authority's Code Amendment Principles require that the costs and benefits of change are summarised. Third party reports² have quantified the benefits of electrification to consumers and are resources that the Authority can build on to quantify the benefits of connection pricing reform. This, coupled with appropriate assessment of the costs would ensure measures are targeted to those which truly benefit customers.

Setting connection charges at the lower end of the efficient range, is better than setting them too high

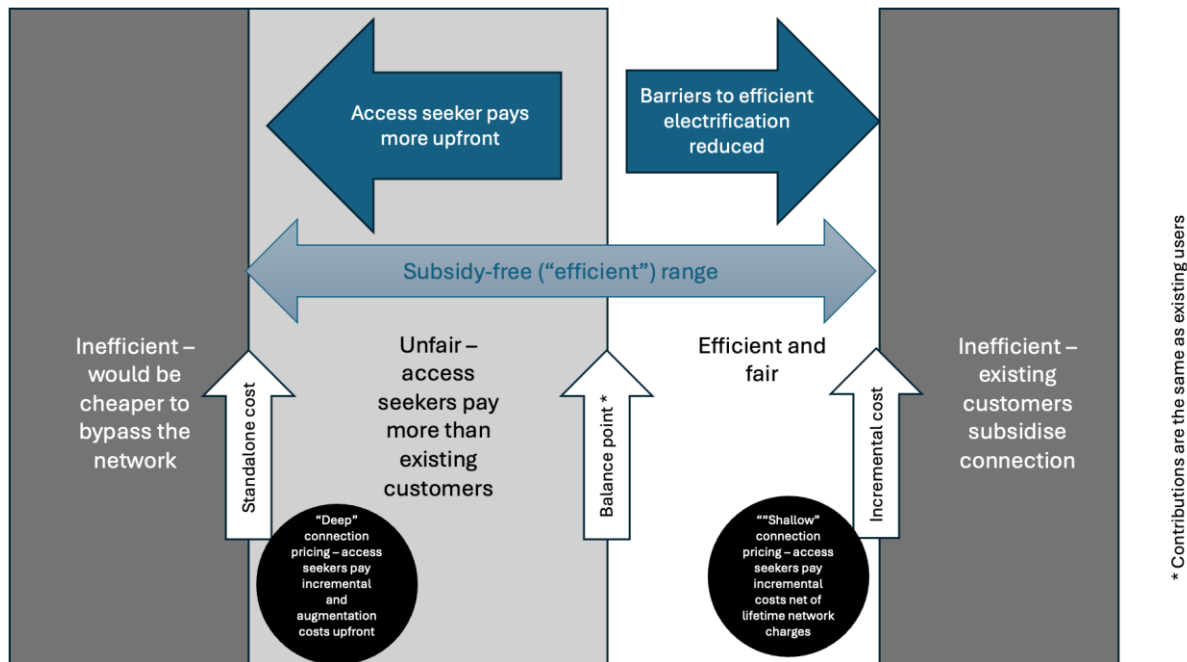
6. We support the Authority's intent to ensure connection prices are efficient and equitable. Because EDBs are monopoly providers in their areas, it's important they maintain open access networks, this ensures all customers can connect and have the same access rights to available network capacity resulting in lower costs to customers over time as infrastructure costs are shared, leading to more affordable services.
7. We want customers to connect to the network, and the purpose of customer contributions is to ensure that the cost of connecting new customers doesn't *unfairly* affect existing customers. While the Authority wants connection pricing to be efficient, the efficient range of connection pricing is wide, which means the decision of what price to set for a new connection must be informed by the wider decarbonisation and electrification benefits which are external to network pricing.
8. As noted by both the Authority³ and CEPA⁴ the disbenefits of pricing outside the efficient range is asymmetric because setting customer contributions too high disincentivises efficient electrification and risks the public benefits that go with it, whereas even setting them at zero can be economically beneficial as it removes barriers to connection in a period of growth.
9. The broader economic benefits of timely electrification and the asymmetric benefits of low customer contribution, points to regulation that encourages EDBs to price connections at the shallow (lower) end of the efficient range, this is illustrated in the figure below.

²Aotearoa NZ study by Sapere: <https://www.ena.org.nz/resources/electrification-of-nzs-energy-needs/document/1231> and Rewiring Aotearoa: Electric Homes - Rewiring Aotearoa - March 2024.pdf

³ *Network connections project: stage one amendments - Consultation paper*, Electricity Authority, October 2024.

⁴ *Regulation of distribution connection charges in New Zealand*, CEPA, October 2024

Figure 1. Fairness within the efficient range



10. In addition to the above, we do not think the proposed reliance measure provides a reliable indicator of the efficiency and equity of connection prices across time and across EDBs. This is because various factors may cause the “neutral point” price to change, and because this metric ignores vested assets, distorting the analysis.

11. Given the lack of knowledge in relation to the connection pricing problem, a better short-term measure to prevent a worsening in connection prices would be too:⁵

- Require existing methods not to materially change, expect where necessary to – i.e. refer directly to the EDBs published methods for setting connection prices.
- Build an understanding of connection pricing and benchmark EDBs, by collecting the necessary information on connection rates to allow it to determine whether the observed levels of contribution to network (common) costs have a material effect on connection rates. As this provides a more accurate indicator of how the efficiency and equity are changing over time.

Regulatory intervention needs to be proportionate and target to areas where it’s net beneficial

12. The Authority doesn’t consistently distinguish between small and large customers in its consultation, and we are concerned that some of the interventions proposed are not proportionate to the harm they are trying to fix.

13. A number of the Authority’s proposals make sense for large customers, but for high volume, low capacity/load customers, such as residential, these proposals will drive significant complexity, administrative burden and cost into the transactions, which will ultimately come at a cost to the customer. As we suggest in our submission on the Authority’s non-price barriers consultation, the threshold for “large customers” should be 1 MVA.

⁵ This is discussed in more detail in our expert report, Incenta, *Electricity Authority’s consultation of price and non-price aspects of customer connection – report for Powerco and Unison*, December 2024, pg 14-15.

14. Transaction and search costs are proportionately much higher for smaller customers. Therefore, to reduce potential heavy administration costs associated with progressing high volume small connection applications, we propose:

- **That standard capacity rates for smaller connections are based on the average group of connections with similar costs** – The Authority’s analysis of standard capacity rates and efficient price ranges point to the benefit of simple and standard prices for smaller connections.
- **Applying reconciliation methodology to standard (averaged) connection prices**, as opposed to for each individual connection – would further limit the administrative burden of compliance. Powerco is currently exploring options to standardise connection charges for small, similar jobs for exactly this reason.
- **Agree flexible minimum scheme is only for larger access seekers** – hosting capacity is dynamic, and the terms should be for a fixed number of years that relates to forecast network augmentation needs.
- **Threshold for the pioneer scheme should apply to the customer contribution towards the connection, not the gross cost of the connection** – to ensure the cost and complexity of administering the scheme is proportionate to the problem it’s addressing.

There is risk EDBs are disincentivised to spend money on connections

15. The Authority’s assessment of price and non-price barriers to distribution connections and the benefit of removing them, supports regulation. In its discussion of reducing reliance levels, the Authority suggests that EDBs could apply for an exemption based on the adequacy of their revenue allowances with the Commission.
16. We don’t think there needs to be an exemption for this. As the Authority notes, the Commission reviewed financeability as part of its DPP4 reset and concluded that it is not an obstacle to investment. EDBs should have enough capital to accommodate the lower levels of customer contribution that the Authority proposes.
17. While the Commission’s analysis suggests that financeability is not a barrier to EDB investment, the DPP as a “low-cost regulatory mechanism” is deliberately designed to be fungible. EDBs enjoy the discretion to direct expenditure within their expenditure allowances without further scrutiny or approval. EDBs can prioritise other types of capex over connection work, forcing EDBs to make trade-offs with prioritising connections over other types of expenditure e.g. resilience. This moves against the wider national economic benefits that go with electrification, which depend on timely and efficient connections to the network.
18. We suggest that the Authority work with the Commission to establish a mechanism to specifically address connections to remove the disincentive on EDBs to spend money on connections. For example, a non-fungible use-it-or-lose-it mechanism like Transpower or a ring-fenced connection capex allowance, like Chorus, to support connection uptake for non-exempt EDBs during a period of growth.
19. This submission details our observations about the Authority’s proposed reforms and our answers to the consultation questions are set out in appendix A below.

2 Quantifying benefits of connection pricing for different sized connections will ensure regulation is proportionate

Summary of our positions:

- The problem definition is broader than the efficiency of network connection costs, it's also about equity and decarbonisation.
- Regulatory intervention needs to be tested against quantified cost and benefits to confirm they are proportionate to the harm they are trying to address. If this quantification cannot be undertaken, reforms should be limited to large customers to ensure the Authority aligns with its Consultation Charter.
- Because transaction and administration costs are material for smaller connections, average connection charges for groups of smaller connections with similar costs are more efficient in aggregate than individual connection costs due to the high transaction and administration costs.

20. We agree with the importance of timely electrification as part of Aotearoa New Zealand's transition to a low-carbon economy. However, neither the Authority nor CEPA's supporting analysis quantify the benefits of timely electrification. This is fundamental to ensuring the Authority's pricing Code amendments align with Principle 3 of the Authority's Consultation Charter. In the absence of quantified cost benefit analysis for regulations, there is a risk of adverse unintended consequences where the cost of implementing the regulations are not proportionate to their benefits.

21. In order to effectivity quantify the cost and benefits of intervention, we believe the Authority can use reports such as the Sapere and Rewiring studies cited below to quantify the economy-wide benefits of electrification that their work on distribution connections is targeting and segment that quantification across different connection sizes. Without this piece of analysis, the Authority cannot give confidence to the sector that the benefits outweigh the costs of regulation – if there is any doubt, reforms should be limited to the largest customers.

22. It's clear there are benefits to be achieved, as the annual carbon budget report presented at COP29 makes the stark case that the global carbon budget to limit warming to 1.5C will be used up in six years.⁶ This imperative is also reflected in the Authority's needs case which goes beyond efficiency of network connections:⁷

We want regulations that encourage more investment in important infrastructure – like new housing developments, manufacturers and solar farms – and help larger energy users switch from fossil fuels to an electric alternative.

23. This means that the problem definition is broader than the efficiency of network connection costs, it's also about equity and decarbonisation, while the Authority identifies economy-wide benefits...⁸

Electrification unlocks significant benefits to consumers and the wider economy. Rapid and widespread electrification of transport, process heat, space and water heating, and urban housing development will lead to a significant increase in electricity demand and support a low-emissions future.

⁶ [Global carbon budget will be used up in six years - Newsroom](#)

⁷ Electricity Authority, *Distribution connection pricing proposed Code amendment consultation paper*, 25 October 2024, at 4.7

⁸ Electricity Authority, *Distribution connection pricing proposed Code amendment consultation paper*, 25 October 2024, at 4.10

25. Third party reports, including recent New Zealand studies by Sapere⁹ and Rewiring Aotearoa,¹⁰ have quantified the benefits of electrification to residential customers and are resources that the Authority can build on to quantify the benefits of connection pricing reform.
26. Sapere’s 2022 study for the ENA Total Household Energy Costs NZ,¹¹ which also draws on and models household energy costs and concludes that *from 2026, all electric households can expect the total annual electricity cost, including capital costs, to be lower than the combined petrol, gas and electricity bills (including the relevant capital costs) they would pay otherwise.*
27. Sapere’s analysis also draws on work from Rewiring America and Australia. Rewiring Aotearoa localised this work in 2024 as *Electric Homes*¹² which concludes that:

the average Aotearoa New Zealand home could save over \$1000 a year electrifying, and over \$4,000 a year if they can do so with low interest finance.

28. Both reports point to the benefits of decarbonisation through electrification being the lower lifetime costs of electrical “machines” over those powered by carbon-emitting fuels. Rewiring America’s analysis generalises this approach to the entire US economy (including industrial and commercial machines).¹³

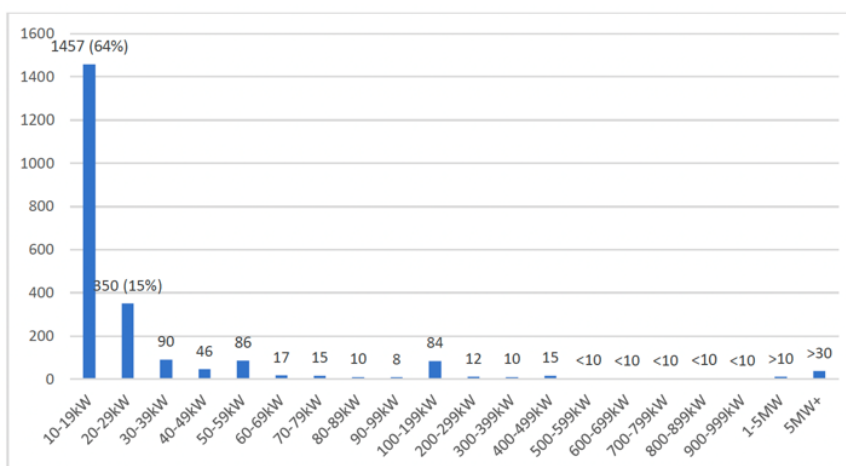
Regulation should be tested against quantified benefits for different sized connections

29. In its consultation of non-price barriers to efficient connection,¹⁴ the Authority limits its proposal to prescribe DG application processes to medium and large applications noting that

(l)ess complex applications could be processed more readily, with larger, more complex applications receiving the level of attention they require.

30. This should allow EDBs to be more efficient and reduce costs to consumers by reflecting that fact that ~80% DG applications are under 30kW (as illustrated by the figure below) and the costs of mandating a costly connection process for them would not outweigh its benefits.

Figure 2. The distribution of DG > 10kW applications by size (mid-2019 to mid-2022)



⁹ <https://www.ena.org.nz/resources/electrification-of-nzs-energy-needs/document/1231>

¹⁰ [Electric Homes - Rewiring Aotearoa - March 2024.pdf](#)

¹¹ <https://www.ena.org.nz/resources/electrification-of-nzs-energy-needs/document/1231>

¹² [Electric Homes - Rewiring Aotearoa - March 2024.pdf](#)

¹³ [One billion machines | Rewiring America](#)

¹⁴ *Network connections project: stage one amendments - Consultation paper*, Electricity Authority, October 2024 at 5.52

31. The same point applies to connection pricing reform, and we encourage the Authority to develop its own cost and benefit calculations for different sized connection access seekers to ensure reforms outweigh the costs of the proposed regulations. This is critical given the pace the Authority is rolling out these reforms (which we support), however, without an adequate assessment of the proposed reforms, the Authority needs to give confidence to the sector that reforms are proportionate and do not result in any unintended consequences.
32. Building on the Sapere and Rewiring studies could accelerate the process of calculating benefits for different sized connections.

3 Transaction costs are material for smaller connections therefore regulation needs to be proportionate

Summary of our positions:

- It is likely that costly regulatory obligations will not outweigh the benefits for smaller connections. To limit the administrative burden of compliance, we recommend standard capacity rates for smaller connections should be based on the average of a group of connections with similar costs and reconciliation methodology should be applied to standard (averaged) connection prices, as opposed to for each individual connection.
- We agree flexible minimum scheme is only for larger access seekers and terms should be fixed for a number of years that relates to forecast network augmentation.
- The threshold for the pioneer scheme should apply to the total customer contribution towards the connection, not the gross cost of the connection

33. The Authority identifies transaction costs as a problem with current connection pricing.¹⁵ Consistent with our assessment of the problem definition, regulations should be proportionate to the harm or market failure that they are addressing. It is likely that costly regulatory obligations will not outweigh their benefits for smaller connections.
34. We believe transaction costs for smaller connections could be reduce and/or limited by the following changes and clarification discussed in the following.

Average standard prices

35. Requiring EDBs to publish standard average prices for similar cost connections, would ensure transaction costs for smaller connections would be reduced.¹⁶ This would still be an efficient outcome while materially reducing the cost of preparing individual costs for most connections (high volume, small connections). Preparing and reconciling individual connection costs should be reserved for the largest connections only, to avoid costly administration burden.
36. Powerco is currently exploring options to standardise connection charges for small, similar jobs for exactly this reason. We believe this will deliver better outcomes for customers.
37. While cross-subsidisation may seem like an issue, it is only desirable to avoid cross-subsidisation between different *groups* of customers, as noted by CEPA.¹⁷ This is because doing so could overly deter connection for some groups of customers, while not providing the correct price signal for others. The result of this is that

¹⁵ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 4.8

¹⁶ At a similar service quality

¹⁷ CEPA, *Regulation of distribution connection charges in New Zealand NZEA*, 14 October 2024 pg 25

groups of customers with a relatively similar cost of connection could have standard (averaged) connection charges.

38. Expanding on this further, the Authority explains that the balance point depends on a range of network and consumer group-specific factors,¹⁸ including historical contribution policies, average incremental costs, network age, the residual revenue allocations used in tariff setting and relates to a consumer group average. Individual consumers within a consumer group would vary in how much they contribute to network costs because there are variations in connection assets and annual charges, among other factors. This suggests that consumer groups can typically be categorised as residential and small commercial, and large commercial/industrial customers.
39. In the context of connection charges however, defining customer groups in terms of technical connection characteristics (number of phases, capacity, distance from existing services etc) would allow EDBs to identify groups with a similar cost of connection that could then be standardised and therefore result in more efficient connections due to them being simpler and faster to processes with low administrative costs.
40. Importantly, the Authority concludes that the efficient range for connection charges defined by the balance and neutral points in terms of “consumers groups” is a narrower range,¹⁹ compared to individual connections which is typically wider. Efficient charges for technically similar connections can equally be set in terms of group averages.
41. In addition to defining the balance point as a customer group average the consultation paper proposes a similar requirement to Australian pricing methodologies²⁰ *where costs relating to the capacity of the shared network upstream of a connection are assessed and allocated using rates ... (which) reflect the average cost of adding capacity to the network at each of five network tiers.*
42. The corollary of this analysis of average costs is that transaction costs for smaller connections could be reduced by requiring EDBs to publish standard average prices for similar cost connections.²¹ This would be efficient but would also materially reduce the cost of preparing individual costs for most connection requests.

Flexible minimum scheme

43. We agree with the intent of the requirement to offer flexible minimum schemes for larger access seekers, however, consistent with the above, this should be reserved for the larger customers.
44. As flexible connection pricing is a function of available network capacity at a point in time, the incentive is to avoid the need for network augmentation by agreeing terms with the access seeker not to exceed the hosting capacity of the network when congested in return for a lower price.
45. The terms that an access seeker accepts for a minimum flexible scheme relate to the hosting capacity of the network at the time of the connection request and because hosting capacity is dynamic – it is a function of the injection and offtake of other customers on the network and increases when the EDB augments capacity. It is difficult to see how these terms could be grandfathered equitably or efficiently.
46. In 2021 we ran a tendering process for network support to the Coromandel Region.²² Several flexibility providers offered us a range of non-network solution options with different costs and capabilities. Based on the costs and benefits of these options relative to a traditional network solution (reconducting the Kopu-

¹⁸ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 7.68, footnote 55

¹⁹ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 7.63

²⁰ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 7.68, 7.18-7.19

²¹ At a similar service quality

²² [Network](http://www.powerco.co.nz/-/media/project/powerco/powerco-documents/community-partnerships/network-support-options.pdf) support options for the Coromandel region, www.powerco.co.nz/-/media/project/powerco/powerco-documents/community-partnerships/network-support-options.pdf

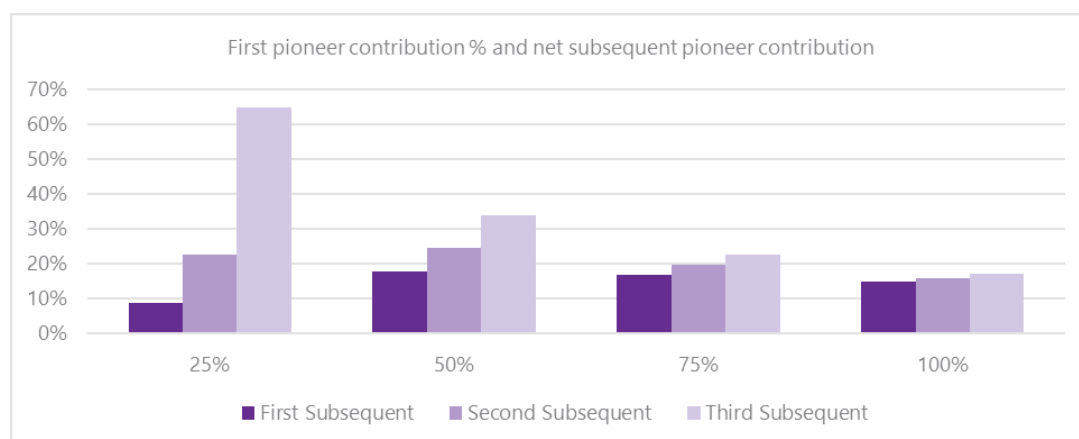
Tairua overhead line) and us investing in diesel generation at Whitianga, we awarded a contract to solarZero in December 2022²³ to provide 1MW of network support in the north Coromandel during peak consumption times.

- 47. Powerco’s contract with solarZero²⁴ has a fixed duration with extension rights that relate to the time horizon within the AMP envisages the need for a traditional network solution. We believe a similar principle should apply to the term for a minimum flexible scheme – a fixed number of years that relates to forecast network augmentation needs or augmentation and the establishment of a pioneer scheme by another access seeker.

Pioneer scheme

- 48. We agree with the intent and problem definition underpinning the pioneer scheme, which is to address the problems of the first mover disadvantage. However, consistent to the above, the cost of administering the scheme should be proportionate to the problem that it’s addressing.
- 49. Ideally the number of participants in the scheme will be limited to those connections with material customer contributions that are likely to be shared, in order to minimise the costs and complexity of administering it. Incenta’s report highlights this point and also suggests that the Authority has likely overstated the potential benefits of these schemes, based on the experience in Australia.²⁵ The thresholds proposed by the Authority only achieve this if the thresholds apply to the customer contribution towards the connection, not the gross cost of the connection.
- 50. The cost of administering the scheme should be proportionate to the problem that it’s addressing. Limiting it to connections where customers contribute more than \$30,000 has this effect. For clarity, the Code amendment should define “connection works cost” as “customer contribution towards connection works” to avoid the perverse result that the first subsequent pioneer pays proportionately less towards the connection than other applicants.
- 51. If it is the Authority’s intention that the entry threshold is the total cost of the works (rather than the pioneer’s contribution towards it), the mechanism proposed has the perverse outcome that the third subsequent pioneer pays more than the first two for the same connection. The histogram below shows resulting net contribution of subsequent pioneers at differing contribution percentages of the first pioneer. The 100% contribution category would be equivalent to defining the “cost” as the contribution value of the first pioneer.

Figure 3. Entry threshold definition could have adverse consequences



²³ www.powerco.co.nz/news/media/solarzero-to-supply-coromandel-network-support-to-powerco-using-virtual-power-plant-technology

²⁴ Now in liquidation [SolarZero in liquidation | Energy News](#)

²⁵ Incenta, *Electricity Authority’s consultation of price and non-price aspects of customer connection – report for Powerco and Unison*, December 2024, pg 13-15

4 Setting connection charges at the lower end of the efficient range is better than setting them too high

Summary of our positions:

- Open access to networks implies that access seekers share network capacity with existing connections, and connection charges are necessary to ensure access seekers don't unfairly burden existing connections with new costs
- Setting connection charges too high is less efficient than setting them too low, particularly in a period of growth therefore on an open access network, connection charges should tend to the shallow end of the efficient range, particularly for smaller connections.
- Given the lack of knowledge on the connection pricing problem, we support disclosing the extent EDBs' connection prices expect customers to contribute more than the incremental cost of connecting and serving the customer (common costs). But disagree with the proposed measured reliance limit and analysis as it's a poor proxy for whether the efficiency and/or equity of connection prices have changed.

52. EDBs in New Zealand offer open access to their networks. This means access seekers are free to connect on equal terms and share available network capacity. Unlike some access regimes in other jurisdictions, connected parties do not reserve network capacity to the exclusion of others.
53. EDBs anticipate future capacity needs and augment their networks to meet forecast demand for injection and offtake. All connected parties benefit from this and so wider network augmentation costs to meet network growth are socialised proportionately just like the sunk costs of the existing network. Cost reflective distribution pricing ensures that the proportionate allocation of sunk and augmentation costs is efficient.

Connection charges are necessary to ensure access seekers don't unfairly burden existing connections with new costs but should tend to the shallow end of the efficient range, particularly for smaller connections.

54. When access seekers connect to an existing network, the EDB incurs both the direct costs of the connection assets that are built to attach them to the rest of the network and the indirect costs of augmenting the rest of the network to host the new connection.
55. The access seeker will pay line charges, like existing customers but if these line charges won't be enough to recover the direct and indirect costs of the new connection over its life then existing customers cross-subsidise the new connections. It's possible that this cross-subsidy could be efficient however, the primary reason for connection charges is to ensure that new connections don't unfairly load costs onto existing customers. The Authority notes that this involves newcomers avoiding costs or underpaying for costs that are covered by existing users, which may be unpopular and unsustainable.²⁶
56. While fairness, popularity and sustainability aren't statutory objectives for the Authority, they are important considerations in network pricing, particularly in a time of growth.

²⁶ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 7.64

Setting connection charges too high is less efficient than setting them too low, particularly in a period of growth

57. We agree with the Authority that it's important that connection charges are efficient. Just like sunk cost network pricing, there is a wide range of efficient connection prices, and the efficient range is likely to be different for each individual EDB. The Authority discusses this in its consideration of connection charge reconciliation pricing methodologies. Both the Authority and CEPA's supporting analysis consider the disbenefits of pricing outside the efficient range, concluding that the inefficiencies are asymmetric.
58. CEPA concludes that the consequence of setting customer contributions (connection charges) too high disincentivises efficient electrification and risks the public benefits that go with it.²⁷ The Authority echoes this in observing that even setting contributions to zero can be economically beneficial.²⁸
59. Intuitively this is particularly relevant in a growing or new market because when building a network for the first time there are no existing customers so there's no risk of cross-subsidising new connections. As we decarbonise through electrification, and therefore in a growth phase, we're anticipating a 50-100%²⁹ increase in electricity demand over the next 25 years and orders of magnitude increases in the volumes of generation embedded on distribution networks.
60. The efficiency disbenefits are low if networks invest more to support electrification in the event that connection charges are too low, relative to the potential disbenefits if connection charges are too high. In a growing market, the connections and augmentation to support them will inevitably happen in aggregate. Setting connection charges too low may mean network costs to existing customers are slightly too high but customers will get the wider benefits of timely electrification discussed in the problem definition section as well as lower costs over time as they share the costs of network across more people. At a national economic level, this is still efficient over the long term.
61. We note that when rebuilding the Christchurch network after the earthquakes, Orion had low levels of customer contributions for exactly this reason.
62. Given the very wide range of efficient costs for connection pricing, the Authority and CEPA's analysis helpfully point to the importance of setting costs for smaller connections towards the shallow end of the efficient range – effectively each individual connection is just contributing towards network growth which is planned augmentation capex.
63. The timing of augmentation capex is unavoidable and uncertain. While predictable in aggregate, the decision about the optimal timing and location of augmentation capex is partly a function of customer behaviour – both using more electricity and investing in new appliances on existing and new connections. As a result, EDBs should recover these augmentation costs related to smaller new connections through posted-distribution prices which means connection charges should be shallow as a result.
64. This rationale is consistent with the Authority's proposals for pioneer schemes which should only apply to large connections. In these cases, it is easier to attribute specific augmentation costs to the connection application, some of which may be recovered through a customer contribution but rebated if subsequent access seekers connect below the same augmented assets.

²⁷ CEPA, *Regulation of distribution connection charges in New Zealand NZEA*, 14 October 2024 pg 20-21

²⁸ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 pg 82

²⁹ See, for example the Climate Change Commission's projections in <https://www.climatecommission.govt.nz/public/Inaia-tonu-nei-a-low-emissions-future-for-Aotearoa/Modelling-files/Electricity-market-modelling-datasets-2021-final-advice.xlsx> and BCG's scenarios in *The Future is Electric*

Reliance limit

65. It appears that there is limited knowledge about the scale of the connection problem in New Zealand and the Authority's proposal to disclose network (common) cost recovery that is implicit in connection prices is a great first step to building up knowledge and understanding. This will provide a more accurate indicator of how the efficiency and equity are changing over time.
66. Incenta explores why³⁰ an EDB's "reliance" on capital contributions may be a poor proxy for whether (and to what extent) connection charges have moved relative to the "neutral point" and therefore affect efficiency and/or equity. There are various reasons why the level of capital contributions as a proportion of capital expenditure can change materially, even where there has not been a change to the connection pricing method. Incenta also proposes alternative methods the Authority could use to prevent any further reduction in efficiency or equality in relation to connection charges:
- Require existing methods not to materially change, except where necessary to – i.e. refer directly to the EDBs published methods for setting connection prices.
 - Build an understanding of connection pricing and benchmark EDBs, by collecting the necessary information on connection rates to allow it to determine whether the observed levels of contribution to network (common) costs have a material effect on connection rates. As this provides a more accurate indicator of how the efficiency and equity are changing over time.

5 Electrification growth incentives would be stronger with a specific regulatory mechanism for funding connections

Summary of our positions:

- 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.
- 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). We encourage the Authority to direct the Commission to treat connection expenditure differently during a period of growth.

67. As mentioned above, we agree with the Authority that high connection charges deter efficient and timely electrification. Our experience has been that connection costs can be a multiple of the on-site electrification costs, all of which require upfront capital from access seekers.
68. EDBs are in the business of long-lived infrastructure asset ownership and while efficient pricing is important, it is counterintuitive that end-customers should have to source capital up front to pay for electrical connection and service augmentation rather than paying for the service over time. The Authority's analysis suggests that one of the reasons for EDBs requiring high levels of customer contributions is the incentive created by the Commission's price-quality regulation.³¹

For non-exempt distributors, increasing connection charges reduces net capital expenditure, which generates an incentive payoff. Because all regulated capex can be substituted, distributors can also increase connection charges to offset cost overruns in any part of their capex programme. At the

³⁰ Incenta, *Electricity Authority's consultation of price and non-price aspects of customer connection – report for Powerco and Unison*, December 2024, pg 15-16.

³¹ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at para 5.3 i

margin, this amounts to the same outcome, which is increasing connection charges improves incentive outturn.

69. Similarly, CEPA's supporting analysis³² suggests under the price path incentives (as modified by the IRIS mechanism) EDBs have an incentive to reduce their net connection capex ex post. While this is true within a 5 year regulatory/IRIS period, connection assets have a much longer economic life: EDBs should still be incentivised to invest in connections even when subject to IRIS.
70. Efficient capex that exceeds a non-exempt EDB's capex allowance over a regulatory period is subject to a retention factor which compensates customers for the EDB's share capex overspend over the following regulatory period through the IRIS mechanism. After this period, the return on the depreciated asset is the regulated WACC. Over the life of the asset, it is value accretive for the non-exempt EDB to make efficient connections above its regulated capex allowance.
71. The Commission makes this observation itself stating that although IRIS incentives are symmetrical between capex and opex within a 5 year period, the value accretion of capex subject to a retention factor means that if the supplier's actual cost of capital is below the allowed WACC, there will be lower incentives to control capex costs relative to opex.³³
72. As mentioned in the consultation paper,³⁴ the Commission applied a financeability check to their draft DPP4 determination and conclude that EDBs do not face financeability constraints as a result of the price-quality regulation in Part 4, but rather they require that:³⁵

Prudent businesses undertaking effective capital planning will manage their finances to ensure that over the course of investment cycles there is sufficient capital headroom to meet expenditure needs at any given point in time, while maintaining appropriate credit metrics. Maintaining capital headroom is likely to be particularly important for trust owned EDBs that prefer to maintain trust ownership.

73. The fact that several of the EDBs with high levels of customer contributions are exempt from price-quality regulation suggests that the constraint is not incentives created by Part 4 but may be other causes e.g. access to capital.³⁶
74. As the Authority notes, because capex allowances are fungible, non-exempt EDBs make decisions about how to spend their capex and how to manage any necessary overspend. While value accretive, any returns on connection capex that exceed the regulatory allowance are delayed until the end of the IRIS period and under-recover the regulated WACC in the long-term.
75. Connection growth has been predictable since the commencement of Part 4 - Powerco's connection capex has generally been within regulatory allowances. However, as New Zealand accelerates initiatives to decarbonise through electrification, we expect to see both an increase in the number of connection and enhancement requests and less predictability in the timing of those requests causing some EDBs to make trade-offs between types of expenditure if they want to stay within allowances.
76. We note that the Commission has made explicit provisions for this type of uncertain expenditure such as the use-it-or-lose-it fund in Transpower's price path, or specific funding such as that provided for Chorus' connection capex to incentivise connections to their networks as they transition through a period of growth.

³² CEPA, *Regulation of distribution connection charges in New Zealand NZEA*, 14 October pg 5

³³ *IRIS equivalence staff discussion paper*, Commerce Commission, 22 November 2022 at para 10

³⁴ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 4.16

³⁵ *DPP4 reset – Financeability of electricity distribution services in the default price-quality path - Issues paper*, Commerce Commission, 22 February 2022. 1.11

³⁶ Whether actual or perceived to maintain expenditure within cashflows

77. The Commission considered flexibility mechanisms to accommodate the changing operating environment and emerging uncertainty facing EDBs such as such as use-it-or lose-it allowances, contingent funding and quantity wash-up mechanisms as part of its decision on DPP4. But determined not to make further refinements to the flexibility mechanisms³⁷ noting

In setting capex limits we have been mindful of the availability of reopeners and CPPs, and the implications of increased use of these mechanisms.

78. We acknowledge the proactive work that the Authority initiated with the Commission to reconsider an EDB's price-quality path if requested by the Authority. In addition to accommodating specific reopener applications from non-exempt EDBs above the reliance limit, the Authority should also suggest a reopener specifically for a use-it-or-lose-it mechanism or connection capex fund for all non-exempt EDBs that is not fungible with other capex to accommodate an uncertain profile of connection expenditure and incentivise connections to the network.

³⁷ *Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft decision - Reasons paper, Commerce Commission, 29 May 2024. 2.71*

Appendix A. response to consultation questions

79. We address the Authority's specific questions below. Our answers reflect the high-level conclusions from the discussion above:

- that the costs of regulation must be quantified to be proportionate to the benefits they deliver,
- that shallower connection charges are efficient for smaller connections,
- that standard connection charges for groups of similar connections are efficient and
- that connection pricing should be consistent with sunk cost pricing.

Q1. Do you agree with the assessment of the current situation and context for connection pricing? What if any other significant factors should the Authority be considering? and Q2. Do you agree with the problem statement for connection pricing?

80. The Authority has provided evidence of wide variation between connection pricing across EDBs and examples of connection charges which are both above and below the efficient range.

81. We note the comments from access seekers quoted in the Authority's *Distribution Pricing Reform: Next steps paper*³⁸ and particularly their suggestion that connection pricing in New Zealand is a barrier to timely electrification.

82. Powerco is committed to contributing to Aotearoa New Zealand's net zero 2050 targets. Decarbonisation through electrification is a key strategy for achieving this.

83. We believe that our national emissions budgets are ambitious and feasible, however we need to be pursuing an emissions agenda which provides strong economic growth and co-benefits for economic wellbeing. We can grow the economy while meeting net zero 2050 target.³⁹

84. The Authority should consider the wider economic benefits of electrification in its problem definition. The case for connection pricing reform is wider than the efficiency of network connection costs, it is about maximising the benefits of electrifying the economy to access seekers.

85. We suggest several resources to assist the Authority in quantifying these benefits in section 2 above.

Q3. Do you have any comments on the Authority's proposed pathway to full reform?

86. While each element of the proposed reforms has a logic in isolation, together the full pathway is a substantial change for the sector. The *Code Amendment Principles* in section 4 of the Authority's *Consultation Charter*⁴⁰ include:

Principle 3 – Preference for small-scale 'trial and error' options: The Authority will prefer options that are initially small-scale, and flexible, scalable and relatively easily reversible with relatively low value transfers associated with doing so. The Authority will monitor the implemented option and reject, refine or expand that solution in accordance with the results from the monitoring.

87. Principle 3 is to be used *where analysis demonstrates a clear benefit to a Code amendment proposal, but there is no clear best option in terms of a solution*. This is the case with the proposed connection pricing Code Amendment – in the absence of quantified cost benefit analysis for regulations, there is a risk of adverse unintended consequences where regulations are not proportionate to benefits.

³⁸ *Distribution Pricing Reform: Next steps*, Electricity Authority, May 2024. pp.19-20

³⁹ <https://www.powerco.co.nz/news/industry-insights/grow-to-zero>

⁴⁰ https://www.ea.govt.nz/documents/482/Consultation_Charter_2024.pdf

88. The pathway to full reform should follow Principle 3: initially small-scale and focused on the largest connections where the benefits of reform are greatest. This will enable the Authority to monitor the implemented option and refine or expand that solution to smaller connections in accordance with the results from the monitoring

Q4. Do you consider the proposed connection enhancement cost requirements would improve connection pricing efficiency and deliver a net benefit?

89. We broadly agree with the principle that when customers apply for a connection, they should be able to evaluate how much it would cost and if they could reduce that cost by agreeing to a flexible service.

90. In our comments on the problem definition in section 19 above we have identified the importance of quantifying the benefits of connection pricing reform to different sizes of connection to inform the evaluation of regulatory interventions. Requiring individual costings for firm and flexible connections comes at a cost. For the largest connection requests, the benefits of complex bespoke pricing may outweigh the costs.

91. As the Authority notes, connection pricing is just a specific form of distribution pricing. Powerco, like all EDBs, has different pricing approaches for different tiers of customers: posted regional prices for residential and small commercial customers up to individual asset-based prices for the very largest loads and distributed generators. The same principles should apply to connection pricing.

Q5. Are there variations to the proposed connection enhancement cost requirements you consider would materially improve the proposed Code amendment?

92. Regulating a requirement on EDBs to price a minimum scheme for all access seekers is reasonable if the costs of meeting the regulation are proportionate to the benefits that would result from it, even if access seekers pay for the work in developing scheme costs.

Proportionality

93. A proportionate requirement to design and cost minimum connections and enhancements should be consistent with sunk cost pricing: minimum scheme pricing would be a posted average for groups of smaller access seekers with similar costs but asset-based for the largest applicants.

94. We agree with the opt-out provisions⁴¹ which would be relevant where the costs of developing minimum scheme costings outweigh their benefits and would only be relevant to large access seekers.

95. As we note in section 5 above, the implications of New Zealand's open access regime for distribution are that efficient connection pricing will tend to the shallower end of the efficient range.

96. We also note in section 4 that standardising connection charges to the average for groups of similar-cost connections is both efficient and minimises transaction costs which is particularly relevant for smaller connection requests.

97. The implication of these two conclusions is that minimum scheme costs will be shallow and standard for groups of smaller, similar cost connections.

Flexible Minimum Scheme

98. We agree with the intent of the requirement to offer flexible minimum schemes for larger access seekers. Flexible connection pricing is a function of available network capacity at a point in time. The incentive is to

⁴¹ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 7.10

avoid the need for network augmentation by agreeing terms with the access seeker not to exceed the hosting capacity of the network when congested in return for a lower price.

99. Hosting capacity is dynamic – it is a function of the injection and offtake of other customers on the network and increases when the EDB augments capacity.
100. The terms that an access seeker accepts for a minimum flexible scheme relate to the hosting capacity of the network at the time of the connection request. Therefore, terms should include a fixed number of years that relates to forecast network augmentation needs or augmentation and the establishment of a pioneer scheme by another access seeker.

Q6. Do you consider the proposed network capacity costing requirements would improve connection pricing efficiency and deliver a net benefit?

101. The Authority's proposal for network capacity costing is consistent with the standardisation of connection pricing across the sector.
102. Following our discussion in section 4, standard connection charges are efficient for smaller connections. These will be consistent with published network capacity costs but, following our discussion in section 5, shallower for mass-market connections.
103. Currently EDB sunk cost prices are regional and tiered by connection type, becoming more granular as they become more cost reflective. We note the Authority's proposal at 7.30 (a) that *a distributor may adopt a zero rate for one or more network tier if they do not foresee any need to increase capacity at that tier within their network planning horizon. Zero rates may apply network-wide, or for particular network costing zones.*
104. This is consistent with the evolution of cost-reflective sunk cost pricing and should be introduced at same pace.

Q7. Are there variations to the proposed network capacity costing requirements you consider would materially improve the proposed Code amendment?

105. The implications of our answer to Q6 are that network capacity costing requirements:
 - Should only apply to bespoke connection pricing for the very largest customers
 - Be set at the same regional granularity as sunk cost pricing and.
 - Become more granular at the same pace as sunk cost pricing.

Q8. Do you consider the pioneer scheme pricing methodology would improve connection pricing efficiency and deliver a net benefit?

106. As with Q6, our feedback on the pioneer scheme methodology reflects our high-level observations that the costs of regulation must be quantified to be proportionate to the benefits they deliver, shallower connection charges are efficient for smaller connections, standard connection charges for groups of similar connections are efficient and that connection pricing should be consistent with sunk cost pricing.
107. The implication of these observations for the pioneer scheme is that it should only apply to bespoke connection pricing for the very largest customers. As noted by Incenta⁴² the Authority is likely to have overstated the potential benefits of the pioneer scheme, given the experience in Australia. They also highlight that the significant cost to operate these schemes due to the *ad hoc* nature of the projects means

⁴² Incenta, *Electricity Authority's consultation of price and non-price aspects of customer connection – report for Powerco and Unison*, December 2024, at 7c.

that the administration burden is likely to involve largely manual processes, and the benefits are unlikely to exceed the costs.

Q9. Are there variations to the proposed pioneer scheme pricing methodology you consider would materially improve the proposed Code amendment?

Drafting clarity

108. We note the five key parameters on which the pioneer scheme has been calibrated:
- 10 year duration
 - 20 year depreciation life
 - \$30k entry threshold
 - \$10k entry threshold for contributions and
 - \$1k minimum contribution
109. The cost of administering the scheme should be proportionate to the problem that it's addressing. Limiting it to connections where customers contribute more than \$30,000 has this effect. For clarity, the Code amendment should define "connection works cost" as "customer contribution towards connection works" to avoid the perverse result that the first subsequent pioneer pays proportionately less towards the connection than other applicants. This is discussed above in section 3.
110. The definition of "connection works cost" in the Code Amendment should be consistent with the Australian regime where "cost" is the contribution for the purpose of subsequent contributions, so the Code amendment should be clarified to read:
- connection works cost** means *the first pioneer scheme contribution towards the cost of connection works*. Similarly the duration of the scheme should be 7 years to be consistent with in the Australian regime.

Entry threshold

111. We support the design intent of the pioneer scheme: to address the problems of first mover disadvantage but note the costs of administering the scheme and the complexity of communicating how it works to access seekers.
112. Ideally the number of participants in the scheme would be limited to those connections that are likely to be shared in order to minimise the costs and complexity of administering the scheme.
113. The \$30k entry threshold will attract opportunistic schemes from access seekers whose connections are unlikely or incapable of being shared. As noted in section 4 above, to avoid the inefficient cost of these schemes, the definition of "pioneering connection works" entry threshold should be clarified to read
- it is feasible in the reasonable opinion of the distributor that other parties may seek to connect to all or part of, or make use of, the connection works at a later date*
114. Access seekers can use a circuit breaker such as a dispute resolution process if they disagree with the EDB's opinion that other parties could make use of the connection works at a later date, but the modification would eliminate vexatious claims.

Q10. Do you consider the cost reconciliation methodology would improve connection pricing efficiency and deliver a net benefit?

115. Powerco calculates fees for larger connections using a similar methodology to that proposed by the Authority. However, to ensure that this does not drive unnecessary administrative cost into the process, for

smaller customers we recommend that this only required to be calculated on average for groups of customers, and not required to be calculated for each individual customer.

116. Limiting the requirement to 'on request' will still require us to calculate it in the event customers ask for it. Therefore, if required across all customer sizes on an individual basis it is unlikely to deliver a net benefit outcome.

Q11. Are there variations to the proposed cost reconciliation methodology you consider would materially improve the proposed Code amendment?

117. Cost reconciliation methodology should be applied to standard (averaged) connection prices, as opposed to for each individual connection.
118. Consistent with our broader observations in sections 4 and 5, that shallow and standard connection charges are efficient for smaller connections, the Authority's analysis supports a proposed connection charge reconciliation pricing methodology and suggests that EDBs should transition to shallow and standard connection charges for groups of similar connections. Applying the cost reconciliation methodology to standard fees would further limit the administrative burden of compliance.

Q12. Do you consider the reliance limits would improve connection pricing efficiency and deliver a net benefit?

119. Powerco is unlikely to be affected by the application of the reliance limits methodology.
120. We agree with the Authority's problem definition⁴³ and we agree with the framework the Authority has applied to assess the merits of different connection prices, in particular the concepts of the "neutral" price and "balance point" are a useful way of thinking about how changes to the connection pricing method may affect efficiency and equity.
121. However, we do not think that changes in the proportion of connections and system growth capital expenditure that is funded via capital contributions provides a reliable indicator of the efficiency and equity of connection prices across time and across EDBs. This is elaborated on in Q13 below.

Q13. Are there any variations to the proposed reliance limits you consider would materially improve the proposed Code amendment?

122. A number of factors may cause the "neutral" point to change over time and across EDBs and because the reliance limit metric ignores vested assets that many EDBs require, distorts the analysis. There is material risk that the Authority's "reliance" indicator will diagnose a reduction in efficiency and equity when these have not changed, or fail to diagnose a reduction in efficiency and/or equity that has actually occurred.
123. We encourage the Authority to consider Incenta's alternative methods:⁴⁴
- Require EDBs to not change their capital contribution policies in a way that leads to material increase in connection prices – this can be implemented immediately without transition or administration costs.

⁴³ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 4.13

⁴⁴ Incenta, *Electricity Authority's consultation of price and non-price aspects of customer connection – report for Powerco and Unison*, December 2024, pg 15-16.

- A longer-term solution is to require the aggregate contribution to network costs not to increase materially and a requirement to benchmark the network contribution over time and across EDBs – this could be expressed in terms of \$/connected customer, or as a percentage of the RAB.
- Collect necessary information on connection rates to allow it to determine whether the observed levels of contribution to network (common) costs have material effect on connection rates. This will inform the Authority's future work in this space.

Q14. Do you consider the exemption application process (together with guidelines) can be used to achieve the right balance between improving connection pricing efficiency and managing transitional impacts on non-exempt distributors?

124. We agree that an exemption application process provides an avenue to avoid Code Breaches that are out of the control of an EDB such as a very large connection to a small EDB's network with a higher contribution than the reliance limit.
125. We note the work the Authority has done to align its connection pricing reforms with the new uncertainty mechanisms, particularly reopeners, proposed by the Commerce Commission. Ideally it is this link, rather than the exemption application process which should accommodate exceptional circumstances to avoid the drawbacks mentioned in the Consultation⁴⁵ (less efficient connection pricing continuing, slower progress towards nationwide consistency and perverse incentives for access seekers to delay applications anticipating more favourable pricing).

Q15. Do you consider the dispute resolution arrangements proposed (for both participants and non-participants) will provide the right incentives on distributors and connection applicants to resolve disputes about the application of pricing methodologies to connection charges and improve connection pricing efficiency and deliver a net benefit?

126. It is inevitable that regulatory tightening will lead to more disputes. The backstop of a codified disputes resolution process has worked for distributed generation access seekers under Part 6 and a proportionate circuit breaker mechanism might be expected to work equally well for load connections, noting the risk of vexatious applications for pioneer schemes in our answer to Q9.

Q16. Are there variations to the proposed dispute resolution arrangements you consider would materially improve the proposed Code amendment? and Q17. Do you consider the alternative contractual terms option would be better than the approach in the proposed drafting attached to this paper? Please give reasons.

127. We note the option for an alternative contractual term approach proposed by the Authority.⁴⁶ In principle a contractual mechanism for dispute resolution would be lower cost and more flexible than relying on Code.
128. The Authority states⁴⁷ that an alternative contractual approach would not change the substance of the proposals so it is unlikely to reduce the number of disputes which depend on the detail of the proposals themselves rather than the dispute resolution mechanism proposed. We also point to Incenta's suggestions that:

⁴⁵ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 7.1115

⁴⁶ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 7.127-7.135

⁴⁷ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 at 7.128

- The proposal to allow an independent party to determine connection prices appears inconsistent with the Authority’s proposal to rely principally upon disclosure in relation to the extent of network (common) cost that is included in connection prices.
- The guidance rulings panel (should a dispute occur) is incomplete, but also includes guidance that is irrelevant (i.e. the “reliance limit”, which is not intended to apply at the level of individual connections).

Q18. Do you think a sinking lid approach to reliance limits would be preferable to the proposed static limits approach described in sections 7.80 – 7.105?

129. We note above that electrification growth incentives would be stronger with if the Authority worked with the Commission to establish a specific regulatory mechanism for funding connections. Without it, these changes will likely increase the number of reopener applications, the Commission’s process for reviewing reopeners is intended to be quick and predictable – evidenced by the speed with which they have approved reopener applications for EDBs on DPPs this year.
130. We recommend the Authority benchmark the network contribution over time and across EDBs expressed in terms of \$/connected customer, or as a percentage of the RAB in order to correctly “diagnose” a change in efficiency and equity. Refer to our response in Q13 and Q14 above for more information.

Q19. Do you think any element of the fast-track package should be omitted, or should begin later than the rest of the package?

131. We have suggested that the Authority focuses on fewer more effective measures in the fast-track stage. To do this, we encourage the Authority to quantify reform costs and benefits by connection type and design regulations whose costs are proportionate to those benefits. Prioritising the reform programme in this way will avoid adverse unintended consequences.

Q20. Are there other parameters you think the Authority should consider for the proposed connection pricing methodologies? If so, which ones and why?

132. In our answer to Q3 above we note the relevance of the Authority’s Code Amendment Principle 3 to the longer-term reform of connection pricing and the importance of fast tracked regulations being small-scale and focused on the largest connections where the benefits of reform are greatest. This will enable the Authority to monitor the implemented option and refine or expand that solution to smaller connections in accordance with the results from the monitoring.

Q21. Do you agree pricing methodologies should apply to LCC contracts? If not, please explain your rationale.

133. LCCs are an alternative optional mechanism to a reopener for large new customer-initiated and funded connections that meet certain criteria. LCCs can address connection forecast uncertainty in situations where the EDB and connecting party agree in writing that the terms and conditions of the contract between them are reasonable and can apply where a large new connection project has not been provided for in DPP/PPP allowances and meets the required thresholds.⁴⁸
134. The regulatory intent behind LCCs is precisely to avoid regulation where both parties agree. We do not anticipate many instances where EDBs will enter into them but where they do there should be no need to constrain how they chose to – parties can agree regulated terms if they can’t agree bilaterally.

⁴⁸ Commerce Commission, *Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft decision Reasons paper*, May 2024. 1.13

Q22. Do you agree the proposed requirements, other than reliance limits, can be applied satisfactorily to connections with vested assets? If not, please explain your rationale.

135. Vested assets are essentially connections with a 100% customer contribution. Powerco has agreed terms to take on vested assets in this way before – mechanically calculating prices for them is no different from any other connection assets.

Q23. Do you have any comments on the impact of reliance limits on incentives to increase prevalence of asset vesting?

136. In our answer to Q14, we note the importance of the exemption application process to deal with situations outside an EDB's control – vesting a large asset would effectively skew contributions away from the reliance limit.

Q24. Do you agree the proposed methodologies are compatible with contestable connection works? If not, please explain your rationale.

137. The Authority raises questions⁴⁹ about contestability and the benefits of access seekers using 3rd parties to complete connection work.
138. Powerco's current model is to encourage access seekers to tender their connection work to "Powerco Approved Contractors", consistent with this 'contestable connection works' model. Currently, Powerco has approximately 30 contractors that are approved to carry out customer-initiated works on our network. Customers contact one or more contractors from Powerco's list of approved contractors. Those contractors prepare a design for the work and submit them to Powerco for approval, then issue a quote to the customer for the work. If the customer accepts one of the quotes, the contractor that issued that quote will schedule and carry out the work. The customer pays the contractor for the work, less a contribution from Powerco, and Powerco owns the resulting network assets.
139. Our experience with the current model is that contractors factor the cost of unsuccessful bids into the prices that they quote. After a series of customer complaints about connection timeframes and complexity, as well as concerns about design quality, we reviewed our model.
140. At the end of September, we announced that for the first time in more than a decade, we are going to tender Powerco's Electricity Field Services Agreements.⁵⁰ As part of retendering these agreements, we are asking applicants to propose terms for customer-initiated connection and enhancement work as we move to a new model. Customers will engage Powerco to design and build customer-initiated works. Powerco will in turn issue the work to contractors and pay the contractor for its work. Powerco will own the resulting assets.
141. We expect to see lower like-for-like prices for access seekers by leveraging our bargaining power to secure competitive pricing for our customers through the tender process (rather than that bargaining power being diluted by being devolved to each customer negotiating individually on a project-by-project basis, as occurs currently).
142. We have also found that where customers can seek multiple quotes, there are often duplication and inefficiencies in the commercial process, and inconsistencies between what each contractor offers which often causes confusion for customers. Our emerging thinking is that, rather than considering each customer-initiated work request in isolation, it is more efficient for us to consider each job in the context of

⁴⁹ Electricity Authority, *Distribution connection pricing proposed Code amendment*, October 2024 pg 68-69

⁵⁰ <https://www.powerco.co.nz/news/media/powerco-electricity-contracts-going-to-tender>

the best approach for the network (all customers) and other work planned in the area, both customer and network driven.

143. We don't anticipate that the Authority's proposals would create barriers to contestability but note the merits of group bidding over customer-initiated tendering.

Q25. Do you agree that fast-track methodologies should not apply to embedded networks? If not, please explain your rationale.

144. Yes

Q26. Do you have any comments on the Authority's anticipated solution for longer-term reform?

145. In our answer to Q3 above we note the relevance of the Authority's Code Amendment Principle 3 to the longer-term reform of connection pricing and the importance of fast tracked regulations being small-scale and focused on the largest connections where the benefits of reform are greatest. This will enable the Authority to monitor the implemented option and refine or expand that solution to smaller connections in accordance with the results from the monitoring.

Q27. Are there other alternative means of achieving the objective you think the Authority should consider?

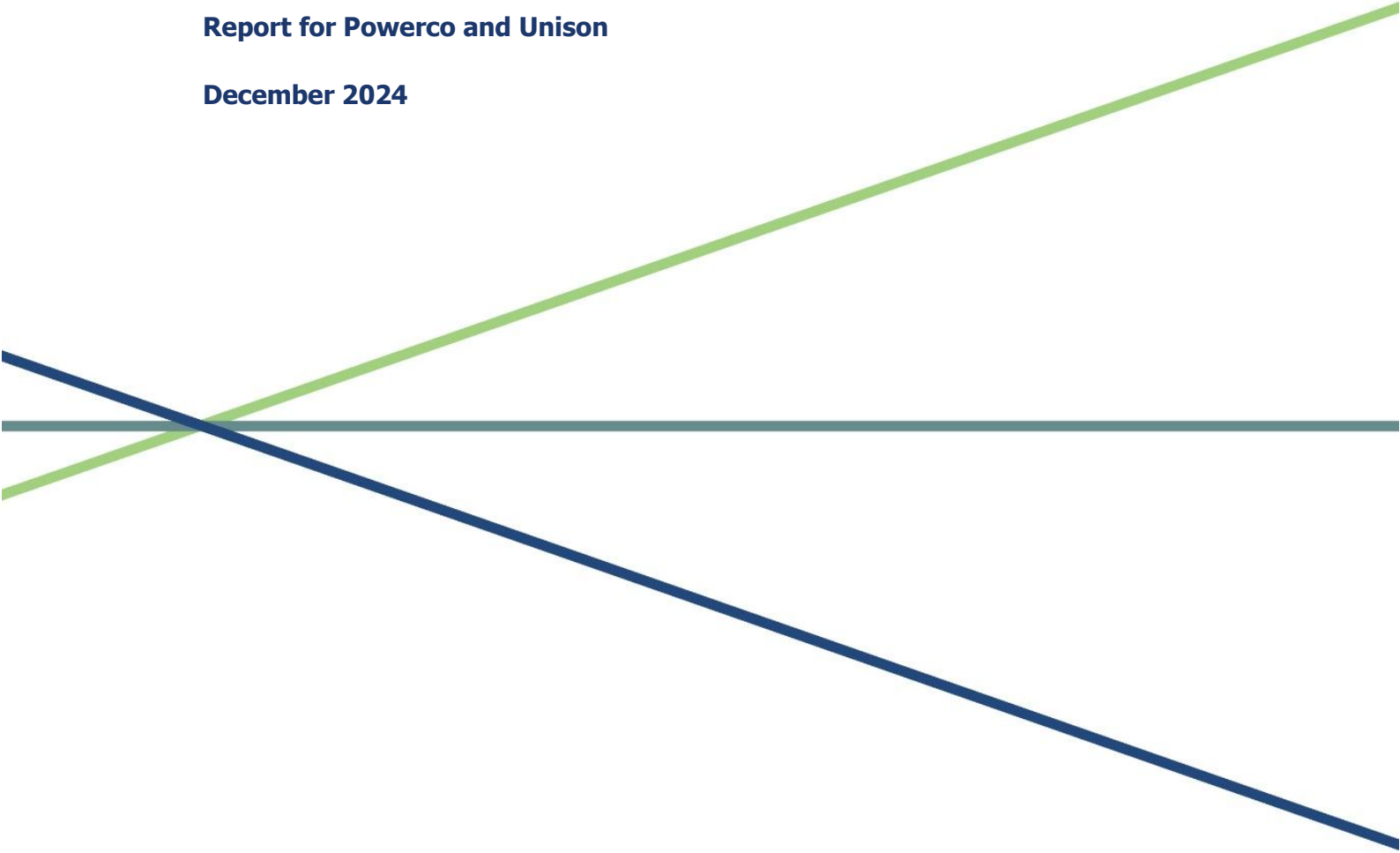
146. We have suggested that the Authority quantifies reform benefits by connection type and designs regulations whose costs are proportionate to those benefits. Prioritising the reform programme in this way will avoid adverse unintended consequences.



Electricity Authority's consultation on price and non-price aspects of customer connection

Report for Powerco and Unison

December 2024



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1. Introduction and summary of conclusions

1.1 Our brief

1. Incenta Economic Consulting (“Incenta” “us” or “we”) has been engaged by Powerco and Unison to comment on the Electricity Authority’s (the Authority) proposals in relation to connections for load. Our focus is on the pricing elements of connections,¹ although we have been asked specifically to consider whether there may be overlap or similar issues with the broader set of pricing and non-pricing measures that the Authority is proposing.²

1.2 Authorship

2. This report has been prepared by Jeff Balchin, with quality assurance provided by Dr Ray Challen. Jeff is the Managing Director of Incenta and has more than 30 years of experience advising on economic regulation issues across a range of infrastructure sectors in Australia and New Zealand. Relevant to the current matter, Jeff was involved in the reforms introduced to connection charges in Victoria in the late 1990s and early 2000s, which became the model that was subsequently applied across the eastern Australian states for energy. Ray also has several decades of experience with infrastructure regulation issues, including most recently as a member of the governing body of the Western Australian Economic Regulation Authority.

1.3 Summary of conclusions

1.3.1 The Electricity Authority’s proposals

3. The background to the Electricity Authority’s proposals is an expectation that a significant increase in connection activity will occur over the coming decades as more of the energy load electrifies as part of New Zealand’s effort to meet carbon emission targets. Also, the Authority has observed that the electricity distribution businesses (EDBs) appear to have substantially increased their reliance on connection charges as a means of financing capital expenditure since 2013, although different behaviours can be observed across EDBs.
4. In relation to pricing for connection to the network (including for changes to connections), the Authority has proposed:

¹ The Authority’s proposals in relation to the pricing elements of connections are contained in the consultation paper entitled: Electricity Authority, 2024, Distribution connection pricing proposed Code amendment, October.

² The Authority’s proposals in relation to the non-pricing elements of connections are contained in the separate consultation paper entitled: Electricity Authority, 2024, Network connections project: stage one amendments – Consultation paper, October.

- a. implementing several mandatory requirements for how connection prices are determined (requiring offers to reflect minimum requirements; precluding “last straw”³ pricing for shared network augmentations and requiring a “pioneer scheme”⁴)
 - b. requiring disclosure (to customers on request and to the Authority) of the extent to which connection prices involve the customer making a contribution to network (common) costs
 - c. placing limits on the ability for EDBs to increase further their reliance on connection charges, and
 - d. introducing a dispute resolution process in relation to load connections.
5. The Authority has also proposed (in relation to load connections) to introduce a prescribed process for connection applications, and to require transparency about the extent of spare network capacity for load, and the pipeline of load applicants.

1.3.2 Our findings

Analytical framework and problem definition

6. We agree with the analytical framework the Authority has applied to assess the merits of different connection prices. In particular, the concepts of the “neutral point” price⁵ and “balancing point” price⁶ are a useful way of thinking about how changes to the connection pricing method may affect efficiency and/or equity (and we also agree with the prominence the Authority has given to equity issues).
- a. However, we do not think that changes in the proportion of connections and system growth capital expenditure that is funded via capital contributions (the “reliance”) provides a reliable indicator of the efficiency and equity of connection prices across time and across EDBs.
 - b. This is because a number of factors may cause the neutral point price to change over time and across EDBs, and because this metric ignores the in-kind contributions that many EDBs require (referred to in NZ as vested assets), which distorts the analysis.

³ “Last straw pricing” refers to the whole cost of any upstream augmentation that is required to serve a customer (i.e., where that customer causes load to exceed network capacity) being charged to that customer, even though preceding customer connections, and subsequent customer connections and general load growth contributed, and will contribute, equally to the need for network augmentation.

⁴ A “pioneer scheme” refers to a scheme where subsequent users of a network extension that was paid for by an initial (pioneer) customer(s) are required to share the cost of that extension, with any amounts collected returned to the pioneer customer(s).

⁵ The “neutral point” connection price is the minimum level of connection charges that would result in existing customers being made no worse off by connecting the new customer (i.e., the sum of the connection charge and additional revenue attributable to the new customer equates with the incremental cost of connecting and serving that new customer).

⁶ The “balancing point” price is the price where customers receiving the same service are being asked to make the same contribution to common costs.

Mandatory elements of connection charging methods

7. In terms of the mandatory elements of connection pricing the Authority proposes:
 - a. we think the requirement for connection offers to reflect minimum requirements (and for any party seeking a higher investment to pay for it) is well justified
 - b. we also think the requirement for contributions to network (common) costs to reflect the use of capacity (and so ruling out last straw pricing) is also sensible, and
 - c. in relation to pioneer schemes, whilst the Authority's proposals mirror in large part the arrangements in Australia, we think the Authority's discussion has overstated the importance of this mechanism, and we urge the Authority to seek to minimise the compliance costs.

Disclosure of contributions for network (common) costs

8. We also agree with the Authority's proposal to require EDBs to disclose the extent to which their connection prices result in a customer expecting to contribute more than the incremental cost of connecting and serving the customer, and so making a contribution to network common costs. Requiring disclosure is proportionate given the state of knowledge in relation to the connection pricing problem. This information will provide insight into how connection prices compare to the neutral point, and whether the contribution to common costs may be changing over time (and so moving from the balancing point).

Limits on reliance on capital contributions

9. We disagree with the proposal to place limits on the extent to which EDBs may rely on capital contributions to fund connections and system growth capital expenditure. This is because this measured reliance is a poor proxy for whether the efficiency and/or equity of connection prices have changed. A better short-term measure to prevent a worsening of the efficiency and/or equity outcomes of connection prices would be to:
 - a. refer directly to the EDBs' published methods for setting connection prices (i.e., require existing methods not to change, except where necessary to comply with the measures the Authority implements), and
 - b. over time, refer to the extent of network (common) cost contributions that the EDBs will be required to calculate and disclose.

Dispute resolution processes

10. We also think the Authority's proposed dispute resolution process requires review, and specifically that:
 - a. the proposal to allow an independent party to determine connection prices appears inconsistent with the Authority's proposal to rely principally upon disclosure of the extent of network (common) costs included in connection prices, and

- b. in any event, the guidance to the rulings panel (should a dispute occur) is incomplete, but also includes guidance that is irrelevant (i.e., the “reliance” limit,⁷ which is not intended to apply at the level of individual connections).

Non-pricing measures

11. Lastly, in relation to the non-price aspects of connections, we note that the proposed measures are broad (especially when considered alongside the pricing measures), and we question whether the mandatory measures in relation to the process of connections is consistent with the proposal to rely principally upon disclosure in the short term to discipline price. We would urge the Authority to seek simpler, lower-cost interventions where possible. Moreover, we do not think the requirements for EDBs to disclose system capacity and the pipeline of connection applicants in relation to load should be a priority. This is because the Authority’s proposed connection pricing changes (discussed above) aim to reduce the importance of a customer’s position in the queue for connection pricing.

⁷ The “reliance limit” is the proposed limit on capital contributions as a proportion of total capital expenditure in relation to connection and system growth.

2. Elaboration

2.1 Overview of the Electricity Authority's proposals

12. The principal features of the Electricity Authority's analytical framework and views on the "problem" were as follows.
 - a. The Electricity Authority's review of connection charges is motivated largely by the view that the efficiency of the process for connecting customers – or changing existing connections – is becoming increasingly important because of New Zealand's policies to meet its climate change commitments. Meeting these commitments is expected to be achieved through the electrification of many existing and new energy loads that otherwise would have been met via other energy sources, spanning use at the industrial level (e.g., conversion of coal or gas process heat to electricity), commercial level (e.g., conversion of gas heating and commercial cooking to electricity and creation of charging stations for electric vehicles (EVs)) and residential level (changes to connections to facilitate conversion of gas appliances to electricity and charging of EVs).
 - b. The Electricity Authority observed that connection charges, and the process for connection charges, may have impacts on economic efficiency (principally via potentially encouraging inefficient connection if charges are too low and potentially dissuading efficient connections if too high) and that changes in connection charges may have equity issues (with new generations of customers either paying more or less than previous generations, depending on the direction of changes).
 - c. The Authority formed the view that the EDBs' "reliance" on connection charges (defined as the connection charges as a proportion of the capital expenditure that has been tagged under the categories of "customer connection" and "system demand" in Information Disclosure (ID) accounts):
 - i. has increased materially over the period since 2013, which may be leading to efficiency and equity issues, and
 - ii. varies substantially across the EDBs, which may also signal efficiency issues, with the potential for connection charges for some EDBs to be inefficiently high, and others to be inefficiently low, and with this inconsistency also potentially dissuading connections and so being a source of inefficiency.
 - d. The Authority also considered that certain possible methods for determining connection charges may encourage other forms of inefficiency, namely:
 - i. Setting charges that attribute the whole cost of any upstream augmentation that is required to serve a customer to the customer that causes it (last straw pricing) may cause strategic behaviour by customers (e.g., submitting a premature application in order to avoid being the last straw), and may also adversely affect how EDBs plan and develop their networks.

- ii. Where one customer pays for a network extension that could then be used by a subsequently connecting customer, there may be an incentive to delay a connection application as an attempt to “free ride” on an extension asset that is constructed by the initial customer.
 - e. The Authority perceived a lack of consistency in the principles that different EDBs applied to determine connection charges, as well as a lack of consistency in the process and timelines for connection applications, which the Authority considered may also dissuade or delay connections.
 - f. The absence of any formal mechanism to settle disputes about connection under the current regime may cause the inefficient deferral of connection applications.
13. The Authority’s proposals in relation to the pricing of connections to address these problems in the short term comprise the following elements:
- a. *Mandating certain aspects of the connection price method* – namely:
 - i. Minimum scheme: requiring connection price offers to be based on the least cost technically acceptable method of providing the connection, and where a party asks for additional investment (e.g., the EDB seeks additional capacity to be installed to serve future growth) the requestor pays (in this case, the EDB would fund the capital expenditure via the RAB)
 - ii. Costs caused on the shared network: where a connection price is based in part on costs incurred in the shared network, that price must reflect the use of the headroom in network capacity (i.e., based on an average incremental cost), rather than for specific projects where augmentation is actually required to serve the connection (i.e., last straw pricing is to be precluded)
 - iii. Pioneer schemes: subsequent users of a network extension that was paid for by a initial (pioneer) customer may be required to share the cost of that extension with any amounts collected to be returned to the pioneer customer.
 - b. *Transparency about the make-up of connection charges* – under which the EDBs will need to disclose to connection applications (if requested) the extent to which the connection charge exceeds the amount that would bridge the gap between the incremental revenue expected from the customer and the incremental cost of connecting and serving the customer over the life of its connection, which the Authority refers to as the contribution to “network costs”. These calculations are to be undertaken using the method the Authority proposes to prescribe. This information is also to be provided to the Authority on an aggregated basis (i.e., the aggregate contribution to network costs that is made via connection charges).
 - c. *Limits on any further loss of efficiency and equity* – the Authority proposes to place a strict limit on the overall “reliance” of EDBs on capital contributions for funding connection and augmentation expenditure, which is intended to prevent any further deterioration in efficiency and equity in the short term. The limit is to be set at the recent average reliance level across all EDBs, except for the EDBs whose reliance

was above the average, in which case the limit would reflect the recent experience. The Authority also notes that the EDB's whose "reliance" is very low may be encouraged to raise their connection charges, which it expects may reduce the potential for inefficiently low connection charges.

- d. *Dispute resolution* – the Authority is proposing to extend the dispute resolution powers that the rulings panel currently has in relation to distributed generation to load connections, which would allow the panel ultimately to determine the connection price if there is a disagreement.
14. In parallel, the Authority is also proposing to introduce a range of non-price requirements in relation load connections, which include:
- a. mandating certain elements of the process for negotiation of new connections, including timeframes for key parts of the process, and
 - b. requiring EDBs to publish information about the extent of capacity that is available in different areas of their networks, as well as the queue of load applicants that are seeking that capacity.
15. The Authority has also signalled that it is considering further reforms for connection charging over the longer term, which may include placing bounds around the extent of contribution to network costs that can be included in connection charges. While our focus is on the short-term measures, some of our comments are relevant to the longer term measures being considered.

2.2 Comment

2.2.1 We agree with the principles the Authority has applied

16. The Electricity Authority and its advisers, CEPA, present a very good discussion of the relevant economic and other principles in relation to the appropriate levels of connection charges. Some of the key economic principles – which we endorse – contained in this analysis are that:
- a. when analysing the effect on allocative efficiency,⁸ the upfront charge for connecting to the network needs to be considered in combination with the (expected) ongoing network charges for the use of the network once connected
 - b. the efficient lower-bound for connection charges is achieved where the sum of the connection charge and the revenue from (expected) ongoing network charges equates to the incremental cost of connecting and serving the customer, which implies a connection charge that is set equal to the difference between the incremental cost of

⁸ Allocative efficiency is achieved when the service is provided (but only provided) where the benefit to the customer exceeds the incremental cost of supply. Having prices that are not lower than incremental cost is one means of generating comfort that the service is unlikely to be provided where it would be inefficient to do so.

connecting and serving the customer, and the revenue from (expected) ongoing network charges

- c. the efficient upper-bound for connection charges is achieved where the charge is at a level where customers choose not to connect (or not to change their connection), even though they would do so with a connection charge at the lower bound, and
 - d. where connection charges are between the lower and upper bounds, is unlikely to be a material effect on allocative efficiency the customer will be making a contribution to the common costs of the network.
17. We also agree with how the Authority has sought to summarise key equity outcomes of a particular connection charging method, where it noted that:
- a. connection charges that are at the lower bound imply that existing customers are made no worse off by connecting the new customer – it termed this point for charges as the “neutral point”, and
 - b. a key indicator of whether different vintages of customers are being treated in a similar manner with respect to connection charges is whether customers are being asked to make the same contribution to common costs – it termed this point for charges the “balance point”.
18. Implicit in the Authority’s analysis is that an equitable outcome between successive vintages of customers would be one where each customer contributes the incremental cost it causes and then makes a similar contribution to the common costs of the network. Whilst the concept of equity is much broader than economic efficiency, and so a number of different perspectives may exist as to what is equitable outcome in relation to connection charges, we would expect the Authority’s analysis to be broadly acceptable. Moreover, achieving outcomes that are broadly equitable between vintages of customers is typically seen as a key design principle of utility pricing – and connection prices in particular – and so the Authority should be given credit for the prominence it has provided to equity issues.⁹
19. Given the above principles, it can be inferred that:
- a. connection charges that are very low may encourage inefficient connections and burden existing customers
 - b. a change to the method for calculating connection charges that results in connection charges increasing relative to the neutral point may be inefficient (i.e., if the increase is sufficient for efficient connection requests not to occur) and inequitable (as new customers may be making a higher contribution to common costs when connecting than existing customers), and

⁹ The Authority’s governing legislation includes an additional objective of protecting the interests of domestic and small business consumers in their dealings with industry participants, which we would read as a permitting the Authority to consider whether measures generate equitable outcomes in relation to these groups of customers.

- c. equally, a change to the method for calculating connection charges that results in the gap between the connection charges and the neutral point reducing materially may increase efficiency (i.e., if this resulted in fewer efficient connections being deterred, assuming charges remained above the lower bound), although it may also be viewed as inequitable (i.e., as new customers may be making a lower contribution to common costs when connecting than existing customers).¹⁰
20. In its discussion, CEPA observed that the level of connection charges may influence the incentive for EDBs to respond to connection requests in a timely manner. This issue arises because any change in capital expenditure by the EDBs regulated under a “default price path” (DPP) is treated as a change in efficiency and rewarded or penalised under the “incremental rolling incentive scheme” (IRIS), which means that timely connections are penalised. CEPA showed that, with sufficiently high capital contributions, a financial incentive for timely connections could be restored.¹¹
21. In our view, however, whilst we agree that it is desirable for the EDBs to have a financial incentive to process connection requests and connect customers in a timely manner, a better mechanism to achieve this is to refine the DPP regime. The two options for aligning the EDBs incentives in this manner would be to have the capital expenditure allowances that are used in the IRIS adjusting with the level of connection activity, or to apply a revenue-driver (i.e., an adjustment to the revenue cap) that again relates to the level of connection activity.
- a. To this end we note that during the Commerce Commission’s recent review of the Input Methodologies for the EDBs, several stakeholders proposed that the capital expenditure allowances used in the IRIS should adjust with the level of connection activity, and so address the incentive issue noted earlier.¹²
- b. While the Commission adopted this suggestion as an option where a customised price path is applied, it did not adopt it for the DPP regime. However, the Commission’s decision for not applying it in the latter case stemmed from the greater difficulty of devising an appropriate adjustment in the context of a DPP,¹³ and the Commission has

¹⁰ It is assumed here that the reduction in connection charges referred to here is relative to the level that had applied for an extended historical period. A reduction in connection charges relative to a level that had recently been increased relative to history may mean that new customers would be treated in a similar manner to customers to most of the past vintages of customers, although the recent vintage of customers would have suffered a higher burden.

¹¹ CEPA’s analysis suggest that this incentive issue would be remedied by setting connection charges equal to the incremental cost of connecting the customer, which could be a high connection charge (noting that this refers to the incremental cost, rather than to the amount required to bridge the gap between incremental revenue and cost).

¹² See, for example, Commerce Commission, 2023, Part 4 Input Methodologies Review 2023 – Final decision: Financing and incentivising efficient expenditure during the energy transition topic paper, December, para.3.224.

¹³ The Commission noted that, where a CPP is applied, forecasts of capital expenditure would factor in assumptions about unit connection costs, and so devising an adjustment to the IRIS for connection volumes is straight-forward. However, where a DPP is applied, the capital expenditure forecasts are derived using a high-level (i.e., low-cost) forecasting method, which (in the past at least) has not been a function of transparent (and verified) assumption of unit connection costs: see Commerce Commission, 2023, Part 4 Input Methodologies Review 2023 – Final decision: Financing and incentivising efficient expenditure during the energy transition topic paper, December, para.3.232.

committed to gather more information in relation to the relevant characteristics of customer connections that may allow it to reconsidering this matter in the future.¹⁴ Accordingly, it is reasonable for the Authority to assume that any material incentive issues for the EDBs with respect to connecting customers will be remedied via changes to the DPP regime, and hence not something that should be factored into the method for deriving connection charges.

2.2.2 However, reliance is not a good indicator of changes of efficiency or equity

22. We disagree, with the Authority’s use of “reliance” – being the ratio of capital contributions to connection and system growth capital expenditure – as an indicator of whether capital contributions may have changed in a manner that is detrimental to efficiency and/or equity. As noted above, the Authority has used time series and cross-sectional trends in reliance to infer that:
- a. connection charges have increased in a manner that is likely injurious to efficiency and equity, and
 - b. there is substantial inconsistency in the methods that are applied across the EDBs to derive connection charges, which may:
 - i. indicate that some EDBs are charging inefficiently low connection charges, and
 - ii. of itself cause inefficiency.
23. Recall, however, that the Authority’s discussion of efficiency and equity indicates that it is movements in connection charges contributions relative to the neutral point that is relevant, rather than the movement in the connection charges per se. There are two problems with applying measured reliance as an indicator of the underlying connection charging method.
- a. First, the same capital contribution method may generate materially different capital contributions across EDBs and across time.
 - i. Looking across EDBs, the neutral point for connection charges will be influenced by the history of the network (and hence the incremental revenue a new connection may generate) and nature of new connection projects (e.g., whether extensions are being made into higher cost areas than the existing customer base). There are myriad reasons as to why the gap between incremental of connection may vary across networks.
 - ii. In terms of the time series, the strong real growth of capital input prices over the last decade means that an increase in connection charges would be expected over time, even before considering the potential that networks may be being

¹⁴ Commerce Commission, 2023, Part 4 Input Methodologies Review 2023 – Final decision: Financing and incentivising efficient expenditure during the energy transition topic paper, December, para.3.268.

extended into higher cost areas as well as the potential for distributed generation to be a larger share of the mix.¹⁵

- b. Secondly, the measured reliance of the EDBs on capital contributions only covers the assets the EDBs have installed themselves, and ignores any assets that are installed on behalf of customers that amount to in-kind (rather than cash) connection charge (these are referred to in New Zealand as “vested assets”, and in Australia as “gifted assets”). Thus, the reliance statistic will understate the connection charges for the EDBs that make use of in-kind contributions, and any difference in the presence of in-kind contributions across EDBs will mean that the inconsistency of method across EDBs will be overstated.
24. A more reliable means of assessing the degree of consistency of connection methods across EDBs and across time is to review the connection methods themselves, noting that these are required to be disclosed under the Commission’s ID requirements. In the time available to make submissions it has not been possible to undertake an exhaustive review of the connection pricing methods; however, some observations that we would draw from the small sample of methods that we reviewed is as follows.
- a. There is likely to be a greater degree of consistency in method across the EDBs than the reliance figures would suggest. For example, we observe that many of the methods we reviewed are based on incremental revenue and cost calculations that are not dissimilar to the calculation the EA’s consultation paper proposes. In addition, we also observe that where connection charges are based (in part) on costs caused on the shared network, this tends to reflect the use of headroom in capacity rather than charging a last straw contribution charge for a project that is caused (we did not find any examples where last straw pricing is applied, except in cases where connections are very large).
 - b. Having said that, whilst not intending to pass judgement on the merits, the large increase in reliance on customer contributions does appear to be based, in part, on a change in method for determining connection charges by at least one EDB.
 - c. The omission of information on vested assets from the calculation of reliance is likely to substantially understate the extent of contributions by some EDBs, and also to overstate the variation in connection charges across EDBs. As an example, the capital contribution policies for the two non-exempt EDBs that forecast no capital contributions (Nelson Electricity and Network Tasman) for the next DPP includes the following statement in relation to extension assets (emphasis added):¹⁶

¹⁵ Distributed generation would be expected to incur higher connection charges as there is no incremental revenue generated to offset the incremental connection costs.

¹⁶ The proposition that in-kind contributions may be material for some EDBs would not surprise us, as they typically are for the Australian EDBs (in contrast to NZ, information is collected by the AER in relation to gifted assets, and the value of gifted assets is included both in the capital expenditure forecast and in capital contributions). As an example, the revenue cap for South Australian Power Network’s current regulatory period (2020 to 2025) assumed that 38 per cent of total capital contributions would come in the form of gifted assets (this can be calculated from the information on

Network Extensions are new “Works” necessary to achieve connection between the distribution network and the Customers Connection Assets. In some circumstances Network Extensions will have to be located within private property boundaries and be secured by easements in favour of NEL. Network Extensions assets include the customer service (NCP) fuse. Network Extensions are normally designed and built by independent line contractors, funded directly by the New Load and are then vested with NEL on completion, prior to connection and livening.

25. Accordingly, whilst the Authority’s perception that there has been a change to connection charges that has led to their increase overall has foundation, the concerns the Authority has identified are most likely less substantial than may appear at first sight. In particular, we think the Authority’s view that there is substantial inconsistency across EDBs is likely an overstatement, and we also think that it is unlikely that there will be many EDBs that are found to be requiring inefficiently low connection charges once vested assets are taken into account.
26. Our finding that measured reliance is not a reliable indicator of whether connection charges have changed in the past in an inefficient or inequitable manner also means that we do not think the Authority’s proposal to require EDBs to not change their reliance in the future is not well founded, and that there are better mechanisms for preserving the status quo as the Authority intends. We return to this issue in section 2.2.5 below.

2.2.3 Mandatory measures – use of shared system capacity and pioneer schemes

Cost to reflect use of capacity on the shared network

27. We think the Authority’s proposal to require any cost ascribed to the use of the shared network when calculating charges be based on the use of the headroom in capacity is appropriate. We agree with the Authority that the alternative – where the connection application that causes an upgrade is saddled with the entire cost (the last straw charging method) has a number of undesirable characteristics, including that it is likely to vastly exceed a proper estimate of incremental cost and encourage strategic behaviour by connection applications (as this rule means that very different connection charges may be applied depending on the position of an applicant in the queue). Our review of the capital contribution methods of the EDBs suggest that many EDBs already derive the allowances for costs caused on the shared network on the basis of the “use of capacity”, and so the changes required to comply with the Authority’s proposal may be modest. This practice is also consistent with how allowances for upstream costs are determined in Australia.
28. We also agree with the Authority’s proposal to permit departures from the “average” allowance where (i) the customer is very large, and (ii) the augmentation cost for the area served by a particular connection in question is materially higher than the average that is

the “RIN 2.1.1” worksheet in *AER - Final Decision - SAPN distribution determination 2020-25 - Capex Model - June 2020.xls*, available at: <https://www.aer.gov.au/documents/aer-final-decision-sapn-distribution-determination-2020-25-capex-model-june-2020>).

assumed for the relevant posted price. We also agree with the Authority’s suggestion that EDBs should consider making a nil allowance for costs caused on the shared network where there is substantial excess capacity – in these circumstances, the incremental cost caused on the shared network by a connection will negligible, and it is appropriate that EDBs be able to signal this to customers via connection charges (and so encourage more connections in uncongested parts of the network).

Costs to reflect the minimum scheme, unless agreed otherwise

29. Similarly, we agree with the Authority’s proposal that connection charges be based on the applicable minimum scheme, and note that this is also a feature of the existing capital contribution policies of the EDBs that we reviewed and part of the Australian arrangements.
30. We also agree with the concept that customers should have options to lower their connection costs by agreeing to demand response measures where this is efficient. We note, however, that EDBs would need to retain some control over the circumstances or conditions under which such options are offered. We have had examples in Australia where real estate developers have reduced connection costs by implementing demand side measures (in this case, limits to household demand), but not properly communicated these measures to subsequent purchases, and the EDB in question has had to subsequently augment the network.

Pioneer schemes

31. In relation to pioneer schemes, however, we think the Authority may have overstated the potential benefits of these schemes. Whilst the Authority is correct that pioneer schemes are part of the standard arrangements in Australia, their purpose would better be described as creating a more equitable outcome, noting that for many EDBs the number of rebates provided to pioneer customers is very low.¹⁷ One reason for the typically limited scope of pioneer schemes is that many Australian EDBs (although practice varies) do not apply pioneer schemes in relation to new residential subdivision developments.¹⁸ Rather, where it is efficient to install additional shared network capacity at the time of the first development, this is paid for by the EDB, and the different stages of the development are attributed an amount equal to the average incremental cost. For example, the capital contribution policy of South Australian Power Networks (which I discussed previously) states as follows:

Real estate developers total cost for connection will include pioneer scheme upstream refunds. However, neither retail customers connected to the real

¹⁷ We asked South Australian Power Networks (approximately 900,000 ICPs) about its experience with pioneer schemes, and were informed that the number of pioneer rebates it makes annually has averaged at approximately 13 over the 6 years spanning 2018 to 2024 (but excluding 2020 as materially lower due to covid 19), with the annual number of rebates ranging between 10 and 18. Pro-rated to the New Zealand context, this is equivalent to approximately 30 pioneer rebates annually across all of New Zealand.

¹⁸ The original focus of pioneer schemes in Australia was in relation to electrification in rural areas, where the first customer may have paid for a series of poles to their property, and those poles were subsequently able to be used to serve a neighbour. However, it is likely that stand-alone power systems would be a lower cost means of supplying electricity in similar situations today.

estate developer’s network nor real estate developers will be eligible to receive a refund towards future connections to the pioneer scheme, as real estate developers participate in an equalisation payment scheme (if applicable). The total electricity maximum demand expected for the real estate development will be used in calculating the rebate to upstream customers.

32. It describes the “equalisation payment scheme” as follows:

Where SA Power Networks requests the infrastructure to be installed to a greater capacity than that required for an entire development or stage of a development, the real estate developer will only be required to fund the infrastructure required for their development. This will typically occur where future development is likely beyond the boundaries of the current development by another entity and SA Power Networks believes it to be prudent to install larger cables, switching cubicles or additional conduits in anticipation.

In such cases (i.e., where SA Power Networks requires works above the least cost technically acceptable standard), if SA Power Networks is to perform both contestable and non-contestable works, the real estate developer will be charged for least cost technically acceptable standard and the additional costs accommodated by SA Power Networks. Charges will be detailed in the connection offer.

33. The investment in spare capacity is then included in the cost estimate for the subsequently connecting subdivision developments.¹⁹
34. In addition, pioneer schemes are likely to have a non-trivial cost to operate, as the *ad hoc* nature of the projects to which they apply means that administration is likely to involve largely manual processes. In addition, pioneer schemes change the nature of the connection transaction from a transaction that occurs at a single point in time to one that must be monitored, executed and enforced over an extended period.
35. In view of the above, the Authority should reconsider whether the benefits from a mandated pioneer scheme are likely to exceed the costs and, if retained, should ensure that there are reasonable measures that permit the administrative cost to be minimised. In this regard, we offer the following comments:
- a. *Duration of the scheme* – the Authority’s proposed scheme would preserve pioneer funds for 10 years, whereas the same schemes in Australia operate for 7 years. We recommend adopting the shorter scheme duration that applies in Australia.
 - b. *Calculation of the residual pioneer asset value* – the Authority proposes CPI indexation to the pioneer fund amounts, which will add an unnecessary degree of complication to the scheme. Moreover, whilst in Australia the pioneer schemes now

¹⁹ CEPA also expresses a preference for assets that are expected to be shared to be financed via the RAB rather than customer funded and treated as a pioneer asset: CEPA, p.24.

apply depreciation to the fund amounts (with a 20 year life), the original pioneer schemes simply carried forward the original cost of the assets in question without any adjustment in order to make administration as simple as possible. In our view, simply carrying forward the undepreciated and unindexed values would be valuable in minimising the cost of the scheme, whilst still creating a more equitable outcome in situations where the schemes apply.

- c. *Other constraints on the schemes* – the proposed minimum amount of payment under the scheme of \$1,000 (in 2025 dollars) is lower than applies in Australia, where the equivalent lower limit is currently approximately \$1,500.²⁰ We would note, however, that even with the lower payment limit at \$1,500 there may be little net benefit if there is a high level of manual operation required for the scheme (as should be envisaged).

2.2.4 Disclosure of network contribution

36. In our view, the Authority’s proposal to require disclosure of the network (common) cost recovery that is implicit in connection prices is well-measured given what is currently known at the present about the scale of the connection pricing problem in New Zealand. In particular, compared to the EDBs’ reliance on capital contributions, the extent of the connection charges that are attributable to network (common) costs will provide a more accurate indicator of how the efficiency and equity are changing over time, and a more reliable basis for benchmarking the outcomes of connection pricing methods across EDBs. In particular, one of the most significant problems with benchmarking the reliance on capital contributions – that the cost of vested assets is omitted – is removed if the network common cost contribution is benchmarked.²¹ The disclosure of the magnitude of contributions to network (common) cost sought by each EDB via connection prices may also encourage changes by any outlier EDBs, and so avoid the need for the Authority to impose the longer-term measures it is considering.
37. We also think the Authority’s proposal to apply a simplified calculation of incremental cost and revenue is a sensible means of reducing the compliance cost for the EDBs that do not already do a calculation of incremental revenue and cost when deriving connection prices. One suggestion the Authority could consider is to permit those firms that already calculate connection prices based on incremental revenue and cost to apply their existing assumptions and methods where they represent a more accurate estimate than would occur under the Authority’s proposed simplified method. This would have the benefit of avoiding those firms from running two parallel calculations of essentially the same thing, and so help to minimise compliance cost, whilst also providing a more accurate estimate of the contribution to network (common) costs. As an example, we would expect that EDBs would apply an effective life that shorter than the benchmark of 15 years the Authority proposes for some industries (e.g., a participant in a high-risk

²⁰ The AER guideline for connection charges specifies the lower payment limit as \$A1,000 in 2012 dollars, which translates to approximately \$A1,400 today, which is equivalent to \$1,500 if converted to New Zealand dollars using the market exchange rates, and approximately \$1,450 using PPP exchange rates.

²¹ This is because the cost of vested assets would be omitted from both the incremental cost and capital contribution, and so in most cases leave the network cost contribution unchanged.

industry), whereas a longer life may be applied where the longevity of the industry is more assured (charge point operators may fall into this category).

2.2.5 Mandated limit to reliance on capital contributions

38. As discussed earlier, an EDB’s “reliance” on capital contributions may be a poor indicator of whether (and to what extent) connection charges have moved relative to the neutral point, and so potentially affect efficiency and/or equity. This is because the level of capital contributions as a proportion of capital expenditure can change materially even where there has not been a change to the connection pricing method (i.e., the gap between incremental cost and revenue can change).²² Thus, there is a material risk that the Authority’s reliance indicator will diagnose a reduction in efficiency and equity when these have not changed, or fail to diagnose a reduction in efficiency and/or equity that has actually occurred.
39. There are alternative methods the Authority could use to prevent any further reduction in efficiency or equity in relation to connection charges.
- a. First, the Authority could simply require EDBs to not change their capital contribution policies in a way that leads to a material increase in connection prices, except where this has been done to implement the measures implemented by the Authority. This measure could be applied immediately without a transition.
 - b. Secondly, an alternative the Authority could pursue over the longer term is to require the aggregate contribution to network costs (i.e., the amount that the EDBs will be required to disclose under the transparency measure discussed below) not to increase materially. A basis would be required to benchmark the network contribution over time and across EDBs (for example, it could be expressed in terms of \$/connected customer, or as a percentage of the RAB).
40. The Authority has noted that it is considering whether to provide further guidance about the extent of contribution to network (common) costs that EDBs will be allowed to include in their connection prices. A key driver of whether this further direction should be provided is whether the observed levels of contribution to network (common) costs has a material effect on the rate of connections. We recommend that the Authority collect the necessary information on connection rates to allow it to determine whether the observed levels of contribution to network (common) costs has a material effect on connection rates.

²² As discussed earlier (see paragraph 23), an increase in capital contributions may be caused by an increase in incremental cost (for example, connecting new areas that require longer network extensions or where the same efficiency of use of transformers is not possible), but incremental cost increasing over time at a faster rate than incremental revenue (e.g., where capital costs increase at a faster rate than CPI) and/or where there is a change in the mix of connections to those where higher capital contributions arise (e.g., this would occur if there was an increase in the proportion of DG in new connections).

2.2.6 Dispute resolution process

41. We question whether creating a formal dispute resolution process in relation to connection charges at this stage is consistent with the Authority’s proposed short-term measures. As discussed earlier, while the Authority proposes to mandate certain aspects of connection pricing, its short-term proposals would otherwise leave the existing connection pricing methods intact, but with disclosure of the extent of the charge that represents a contribution to network (common) costs. It seems inconsistent with the proposal to principally commence with disclosure in the short-term (and consider whether further rules about connection prices are required in the longer-term) and at the same time to permit an independent party to set connection prices.²³
42. Moreover, if the dispute resolution process is retained, then the guidance that is provided to the rulings panel (if it is called to settle a dispute) needs refinement. Currently, the proposed drafting for the dispute resolution process requires the rulings panel to apply the new principles that are to be included in chapter 6B of the Code, but these principles are incomplete (i.e., they purport only to displace certain elements of the existing methodologies) and includes the reliance limit even though this limit is not intended to be applied at the level of an individual connection. Guidance that is more in line with the Authority’s proposals would comprise:
 - a. requiring that the EDB’s connection charging methodologies as they exist from time to time be applied by the rulings panel, except to the extent that they are inconsistent with one of the changes included in the Code, and
 - b. specifying that the reliance limit is to be ignored by the rulings panel when determining a dispute.

2.2.7 Non-pricing measures

43. As well as the measures relating to connection pricing discussed above, the Electricity Authority has also proposed a wide range of non-price measures in relation to both load and distributed generation connections.
44. In relation to load connections, we observe that the measures the Authority proposes may require substantial effort to implement, and be required at the same time that material effort by the EDBs in relation to connection pricing may be required.
45. We would recommend the Authority review whether pursuit of the non-pricing measures in relation to load connections may be deferred in order to facilitate the efficient implementation of the pricing measures. We also recommend the Authority reconsider whether it is consistent with the intention to rely principally on information disclosure in relation to connection pricing whilst at the same time implementing a large number of mandatory measures in relation to the non-pricing elements of connection. The Authority should also consider whether it is possible to address the concerns about the non-price

²³ CEPA comments (p.24) that the dispute resolution body should be able to review the EDB’s view on the efficient sharing of costs; however, this is not consistent with the Authority’s intention to apply disclosure only in the short-term in respect of cost sharing.

elements of connection through more directed and lower-cost measures, and to make more use of information disclosure as a tool for encouraging efficient behaviour.

46. As an example, rather than mandating a detailed process for negotiating connection (including timelines), the main concerns of connecting parties may be met through a requirement for EDBs to disclose their process (including target timelines) for assessing connection applications, and a requirement to keep applicants informed as to how connection applications are advancing through the EDB's process. This could be supplemented with disclosure in relation to the time taken to negotiate different types of connections, which would provide pressure for EDBs to improve their performance. Moreover, if disclosure was considered insufficient to motivate all EDBs to respond to connection requests in a timely manner (and essentially where an EDB does not comply with its own process), then a narrowly-focussed circuit-breaker process (e.g., a role for a rulings panel to consider the reasonableness of the delay, with potential sanctions for a Code breach available) may be a more proportionate measure.
47. Lastly, the Authority should also review whether there may be overlap between the non-pricing measures and the pricing measures. To this end, one of the key measures the Authority proposes in relation to load connections is to require the EDBs to publish information on available network capacity and to create (and provide information on) "queues" of load customers in relation to that capacity. However, the Authority's proposal to require changes to connection prices that remove first mover advantages (i.e., eliminate last straw pricing for network augmentation) and disadvantages (i.e., implement a pioneer scheme and require EDBs to fund any efficient over-build of capacity) means that load customers should be relatively indifferent to their position in a queue. Accordingly, we would recommend withdrawing or de-prioritising these measures.