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

Report for Powerco and Unison

December 2024

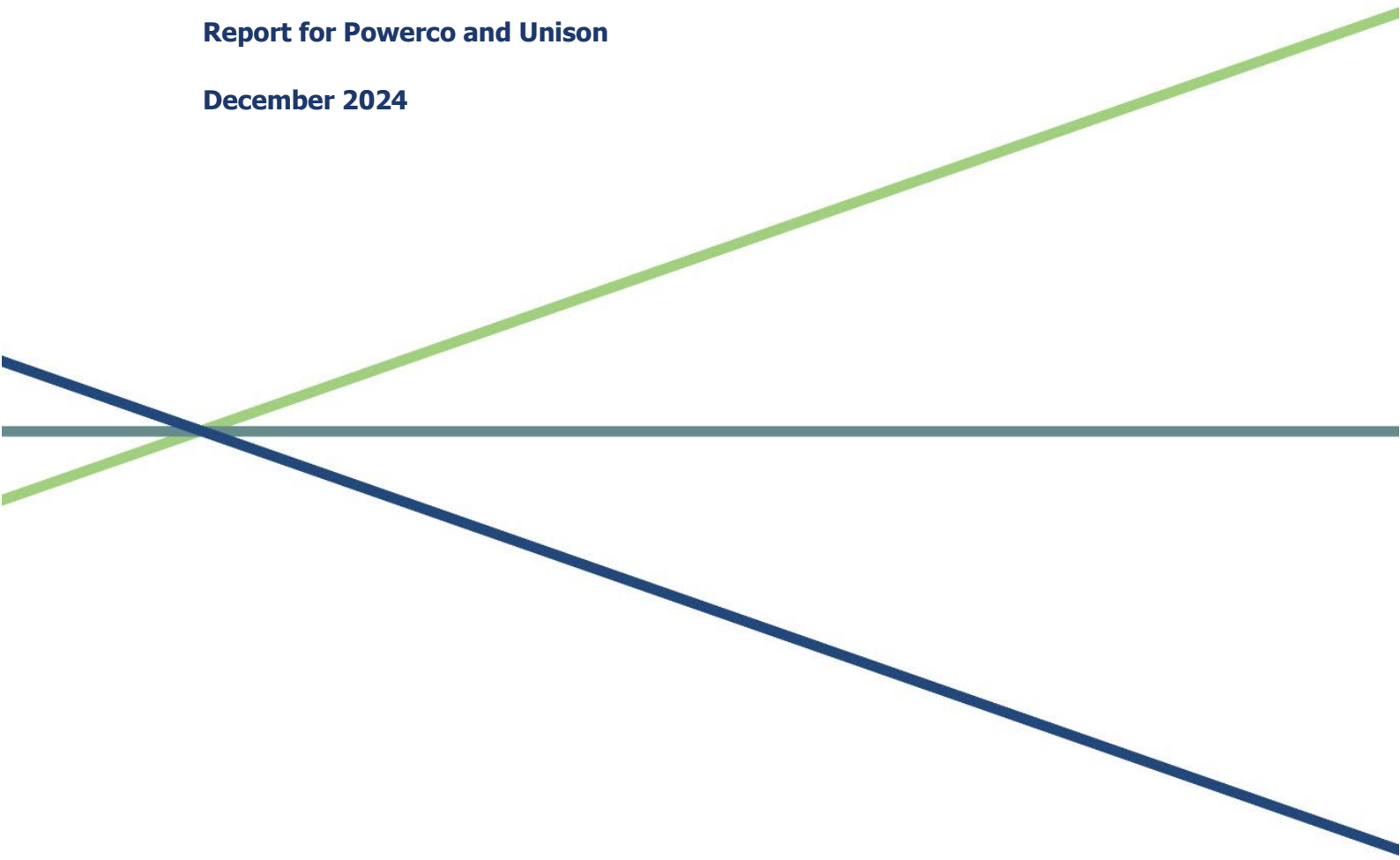

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Table of Contents

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" price[5] and "balancing point" price [6] 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.

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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, whist 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

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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]

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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

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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*

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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 disclosure 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.

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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.