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Joint submission from Network Tasman and the Network Tasman Trust on the distribution connection pricing consultation

Network Tasman Limited and the Network Tasman Trust (we) welcome the opportunity to make a submission to the Electricity Authority (the Authority) on its consultation paper on distribution connection pricing proposed Code amendment.

Network Tasman Limited (Network Tasman) has consulted with its shareholder Trust, the Network Tasman Trust which represents 43,000 households, and this submission represents the views of both organisations.

Network Tasman has also participated in preparing an industry response via Electricity Networks Aotearoa (ENA). The ENA submission is a considered and collaborative effort among the membership, seeking to provide reasoned and balanced feedback on the Authority's proposal. We endorse and support the views presented in that submission, subject to the points and emphasis raised in our submission below.

Executive Summary

We agree that setting prices below incremental costs and above standalone costs is inefficient. We also support greater transparency by using standard language to show connecting parties how the pricing decisions made by Electricity Distribution Businesses (EDBs) reflect efficient pricing that serves the long-term interests of consumers.

However, aspects of the Authority's proposals are not consistent with good regulatory principles, and their implications will create outcomes that are not in the long-term best interest of consumers.

A particular concern is that there may be situations in which large commercial loads are not required to fund the full cost of connecting them to the network.

In summary, we submit:

- The Authority may not have sufficiently explained its proposal. Interested parties cannot provide informed submissions if they do not fully understand the changes being proposed. This diminishes the value of the consultation being undertaken. We encourage the Authority to be conscious of this when reviewing submissions and consider a second round of consultation if it is evident that its proposals have not been fully understood.

- The capacity costing requirements assume that all incremental network capacity upgrades will be used. If material amounts of upgraded network capacity remain unused, the costs of those unused increments of capacity will be socialised across all consumers on the network. In these circumstances, existing consumers will bear incremental costs associated with new connections rather than the new connections themselves. These costs can be significant and introduce material inefficiencies to the connection process.
- Setting charges at the neutral point raises fundamental concerns about equity and sustainability. Pricing new connections at the neutral point would effectively shift shared network costs onto existing users, creating a two-tiered system where existing consumers disproportionately bear the burden of maintaining the network. Over time, this approach could lead to nearly half of all connections contributing only to incremental costs at any point in time, a clearly perverse outcome that would also create competitive distortions.
- The Connection Charge Reconciliation (the Reconciliation) will not achieve the outcomes the Authority anticipates. The Reconciliation aims to improve transparency on the connection charges being levied by EDBs and help the Authority monitor connection charges. Connecting parties are unlikely to understand the specifics that sit behind the Reconciliation which is likely to add, rather than remove, uncertainty. The Reconciliation will also not provide the information required for the Authority to identify how far the charge is from the neutral point.

The Authority should consider further consultation on the proposed changes

We recommend that the Authority consider conducting additional consultation on the proposed changes after reviewing submissions.

The Authority has outlined a series of detailed changes to how electricity distribution businesses (EDBs) should set connection charges. Network Tasman has found these proposals challenging to interpret, particularly regarding their practical implementation and potential business impacts.

Discussions with other EDBs indicate similar difficulties in understanding the proposals. These conversations also revealed significant differences in how EDBs have interpreted certain aspects of the proposed changes, suggesting the Authority may not have provided sufficient clarity about its intentions.

While it is likely that submitters' understanding of the proposals will evolve as the submission deadline approaches, the Authority should remain mindful of the risk that its proposals may not be widely understood. If this becomes evident during its review of submissions, we strongly encourage the Authority to undertake further consultation to ensure the proposals are clearly explained and comprehensively understood.

The capacity costing method is inefficient when extra capacity is not fully used

The Authority's objective is to achieve a connection pricing methodology that ensures new connections at least cover their (average) incremental costs, thereby avoiding costs being imposed on existing consumers. While this principle is sound, we submit that the Authority's capacity costing method fails to achieve this objective in situations where incremental network capacity is underutilised.

Under the proposed methodology, electricity distribution businesses (EDBs) must calculate the net incremental revenue and cost of a connection based on prescribed formulas. Incremental costs include extension costs of the minimum scheme, customer-selected enhancement costs, network capacity costs, and incremental transmission costs. The network capacity cost is intended to allocate the cost of both existing and additional capacity to new loads in proportion to their use, removing the "first-mover disadvantage."

However, this approach implicitly assumes all new capacity will be fully used. If capacity upgrades are underutilised, the cost of unused capacity will be socialised across existing consumers. This creates inefficiencies and violates the principle that new connections should not impose costs on existing users.

Material Inefficiencies from Underutilised Capacity

The inefficiency of this approach is difficult to quantify but is likely significant. Network demand rarely matches capacity exactly, leaving unused capacity in many incremental upgrades. This results in cumulative costs from underused capacity being socialised across existing consumers.

Additionally, individual scenarios can result in significant inefficiencies. For example, a new load may trigger an expensive network upgrade in an area with little to no load growth. If the new load uses only a fraction of the new capacity, the unrecovered costs are transferred to existing consumers.

This mismatch has two key consequences:

1. Existing consumers are unfairly burdened with costs arising from new connections, violating the principle of cost neutrality.
2. New loads face weaker incentives to explore innovative, lower-cost solutions that could avoid expensive upgrades.

Case Study: Maruia Feeder and EV Charging at Springs Junction

Network Tasman's experience with the Maruia feeder highlights the inefficiencies of the proposed methodology. The feeder, an 80 km single-line radial feeder that runs from the Murchison GXP through to Springs Junction, is operating at full capacity. Load growth on the feeder has been static for over a decade.

Springs Junction is a significant node on the highway network between the top of the South Island, Canterbury and the West Coast, being at the junction of SH7 and SH65 and sitting at the northern base of the Lewis Pass. It is a natural location for EV chargers, and several operators (CPOs) have expressed interest in installations. However, the high cost of upgrading the feeder—estimated at \$3 million to \$4 million—has been a significant barrier. Under Network Tasman's existing connection charge policy, new loads must fully fund network upgrade costs triggered by their connection.

Had the Authority's proposed methodology been in place, CPOs would have only been required to a portion of the upgrade costs to connect to the network and likely triggered a feeder upgrade. With load growth flat, most of the upgrade costs would have been passed on to existing

consumers. For example, if a CPO required only 15% of the new capacity added to supply them, the remaining 85%—about \$3 million (based on a project cost of \$3.5m)—would have fallen on existing consumers, equating to approximately \$70 per connection on our network. This is a significant cost for existing consumers to pay.

For context, the annual distribution charge for a typical residential consumer on our network is \$460. It is neither economically efficient nor socially equitable for a pensioner in Richmond to bear the cost of infrastructure primarily benefiting a commercial business, especially when many users of the EV chargers would be travellers from outside the network who do not contribute to the line charges that is funding the upgrade.

Encouraging Innovation and Efficient Outcomes

By maintaining a policy where new loads fully fund incremental upgrades, Network Tasman achieved a more efficient solution. Working with EECA and Meridian Energy, we developed a solution that will enable EV chargers to be installed at Springs Junction, whilst avoiding a costly feeder upgrade.

Network Tasman introduced a new profiled connection. A profiled connection has a variable connection capacity that depends on network conditions. In this case, the profiled connection is unable to draw load from the network during the feeder's peak periods, but has access to the network outside of these times.

This new connection category allowed Meridian to deploy an innovative system of EV chargers supported by three 120 kWh battery energy storage systems (BESS), funded partially through the GIDI fund. The BESS charges during the feeder's off-peak periods, when there is spare capacity, and discharges to power EV chargers during the day. These chargers are expected to be commissioned early in 2025.

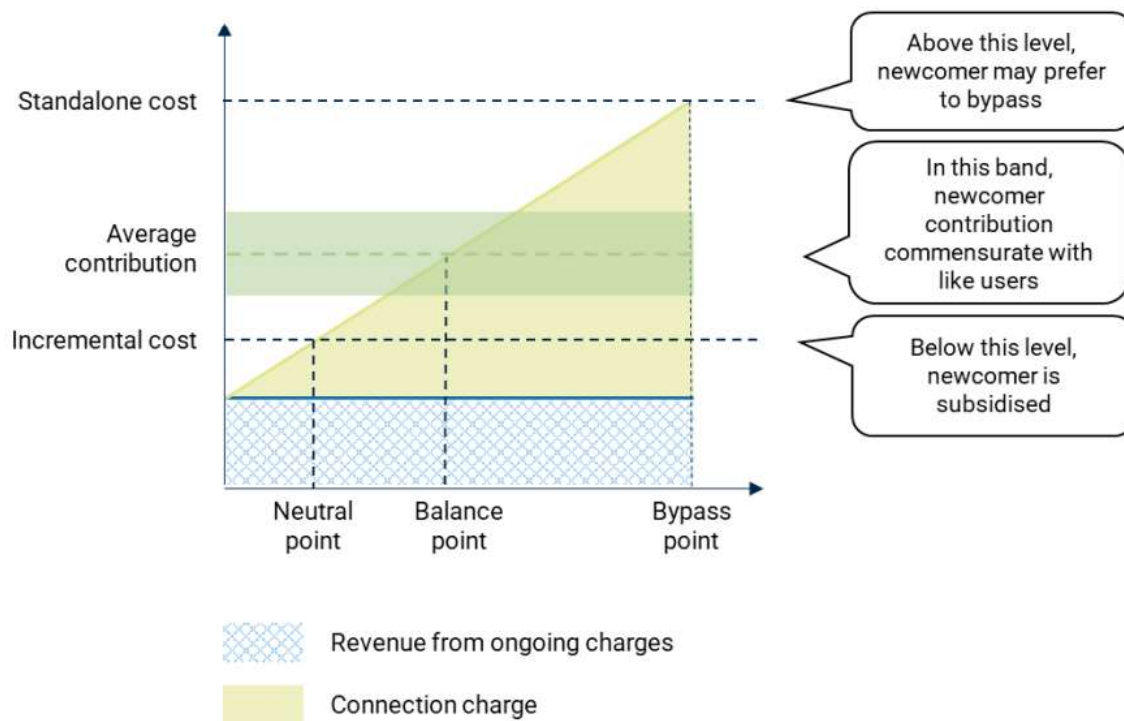
This project received \$540,000 in co-funding—substantially less than the upgrade cost—and avoided imposing costs on existing consumers. Under the Authority's proposed methodology, this innovation would likely not have occurred, and consumers would instead bear the \$3 million in unrecovered costs.

We submit that the proposed capacity charge does not create sufficient incentives for new connections to minimise the incremental costs of their connection. This is particularly concerning for large loads in rural areas, such as sawmills or data centres, where upgrades could impose substantial costs on existing consumers.

It is not appropriate to set connection charges at the neutral point

Concerns with the Authority's Neutral Point Concept

The Authority has introduced several new economic concepts, including the "neutral point," which, to our knowledge, have not been previously discussed in economic literature. These concepts are illustrated in the figure below.



The consultation paper sets out the following principles:

- Connection charges below the neutral point are inefficient.
- Connection charges above the bypass point are inefficient.
- Connection charges above the balance point *can* be inefficient.
- Connection charges between the neutral and balance points benefit existing users without unfairly penalising connection applicants.

Conceptually, the "neutral point" refers to the charge at which a connection's net incremental cost is zero, ensuring that existing customers are not adversely impacted by the new connection.

The Authority suggests that pricing at the neutral point could, in theory, optimise outcomes by minimising adverse effects on connection demand while avoiding suppression of existing users' demand.

Network Tasman strongly disagrees.

The practical implications of this approach raise significant concerns. Pricing at the neutral point allows newcomers to avoid shared network costs, transferring those costs to existing users. This approach is likely to be both unpopular and unsustainable.

Unsustainability of Neutral Point Pricing

We submit that pricing at the neutral point is fundamentally unsustainable because it effectively creates a two-tiered system:

- **Existing connections:** These users bear the full cost of the distribution network, including shared and historical costs.
- **New connections:** These users only fund the incremental costs directly associated with their connection.

Ironically, this would create the very “first-mover disadvantage” the Authority seeks to avoid. Existing users would shoulder all shared network costs, while subsequent connections would benefit from the network without contributing to its broader costs.

At the neutral point, new connections would only cover incremental costs directly related to their connection. This excludes:

- (a) Operating expenditure (except for incremental maintenance on dedicated assets).
- (b) Depreciation for pre-existing network assets.
- (c) Costs of renewing or repairing network assets.
- (d) Transmission charges.

Long-Term Implications

When applied over the time horizons specified in the reconciliation methodology—30 years for residential connections and 15 years for others—a steady-state environment would result in a significant portion of connections contributing only to their incremental costs.

Based on Network Tasman’s historical ICP growth rate of 1.32% annually, an additional 21,000 ICPs could be added over the next 30 years, representing a 48% increase from the current 43,400 ICPs. If all new connections over that 30 year window were residential, the result would be that only 52% of connections would be contributing to the shared costs of operating and maintaining the distribution network. Accounting for the shorter timeframes for non-residential connections, we estimate that after 30 years of this policy, approximately 45% of connections would only be covering their incremental costs. The remaining 55% of connections would be responsible for funding all other network costs.

Assuming these growth rates and connection ratios remain consistent, this imbalance would persist indefinitely. Such an outcome—where nearly half of all connections do not contribute at all to shared network costs—is clearly neither durable nor socially acceptable.

Impact on Competitive Neutrality

The implications extend beyond fairness to network users. This approach could also undermine competitive neutrality. A pricing methodology where only a portion of connections fund shared costs will distort competition, favouring newer users at the expense of existing ones.

The Connection Charge Reconciliation will not achieve the outcomes the Authority anticipates

We submit that the proposed Connection Charge Reconciliation (Reconciliation) will not achieve the outcomes anticipated by the Authority.

The Authority suggests that the Reconciliation will indicate how far above the neutral point each connection charge sits, enabling it to monitor connection pricing and assess its efficiency. However, we submit that while the Reconciliation will show the absolute dollar difference between a connection charge and the neutral point, it does not provide sufficient information to draw meaningful conclusions about the efficiency of those charges.

Limitations of the Reconciliation Methodology

The Reconciliation methodology requires distributors to break down connection charges into incremental and network components using a standardised approach. The Authority defines the relationship as follows:

$$CC = (IC - IR) + NC$$

Where:

- CC = connection charge
- IC = incremental cost
- IR = incremental revenue
- NC = contribution to network costs

According to this framework:

- If $NC=0$, the connection charge is at the neutral point.
- If $NC>0$, the charge is above the neutral point.
- If $NC<0$, the charge is below the neutral point.

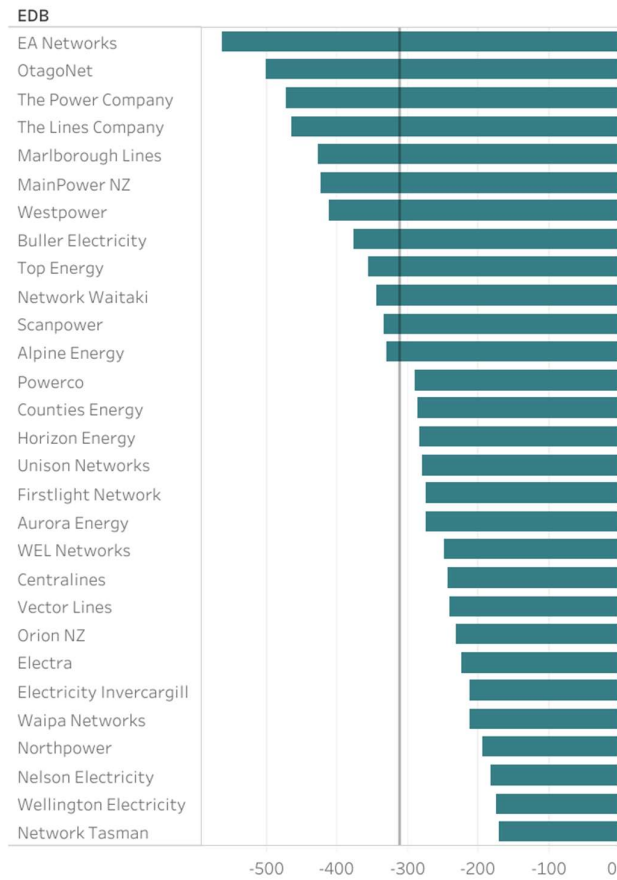
For all new connections, distributors are required to provide connecting parties (upon request) with a breakdown of their connection charge using this methodology. The connection charge itself is determined by the distributor's published connection charge policy, which may not align with the regulated reconciliation methodology. Incremental costs and revenues are calculated using standardised methods, while the contribution to network costs is calculated residually to ensure the equation balances.

Challenges in Assessing Efficiency

The Reconciliation provides no information about the balance point or bypass point for each connection. These points are not fixed values; they depend on the specific characteristics and costs associated with each connection.

Even assessing this information at a network level is unlikely to offer robust insights because the cost to serve can vary significantly within a network and also between networks. For example, depreciation per ICP varies considerably across networks, as illustrated in the figure below.

Figure 1: EDB depreciation per ICP 2023



Source: Commerce Commission Performance accessibility tool

If distributors were to set contributions to network costs equal to average depreciation per ICP, the required contributions would differ widely between networks. This variation extends to other shared costs, such as vegetation management, fault response, and asset renewals. Moreover, costs can vary within a single network. For example:

- A load located near a zone substation would incur substantially lower depreciation costs than an equivalent load on the network's fringes.
- The costs associated with vegetation management, fault response, and network repairs similarly differ depending on location.

Two reconciliations showing equal contributions to network costs do not necessarily reflect equal economic efficiency. Similarly, a higher contribution does not inherently indicate greater inefficiency compared to a lower contribution.

Lack of Contextual Detail

Without this critical context, it is impossible to determine whether a charge (individually or in aggregate):

- Sits between the neutral point and the balance point.

- Falls between the balance point and the bypass point.
- Exceeds the bypass point.

The absence of information on connection-specific characteristics severely limits the value of the Reconciliation. While it may indicate whether a charge is above or below the neutral point, it does not provide insight into the degree above which it is above or below the neutral point or the efficiency of the connection charge.

The Reconciliation, as proposed, lacks the contextual detail necessary to enable robust conclusions about the efficiency of connection charges. Consequently, it will not provide the Authority with meaningful insight into the efficiency of distributor pricing practices.

Finally, it is also unclear what value this information would offer to connecting parties, many of whom may not have the knowledge to understand the economic principles underlying the Reconciliation methodology, notwithstanding the interpretation issues identified above. Furthermore, differences between the methodology used by EDBs to determine the actual connection charge and the Reconciliation methodology are likely to create confusion and misunderstanding for connecting parties.