Distribution connection pricing: posted capacity rate worked examples

15 August 2025

Version

Version	Date	Notes
0.9	August 2025	Published following decision paper and technical consultation on Code amendment drafting. Distribution connection pricing proposed Code amendment | Our consultations | Our projects | Electricity Authority

Contents

1. Purpose

1.1. The purpose of this document is to provide a practical guide for distribution companies to develop **posted capacity rates** for implementing the newly introduced connection pricing requirements for distribution networks.

1.2. The document aims to make implementation and operation of the new **capacity costing** and **charge reconciliation** requirements easier, and to promote consistent practices across New Zealand's distribution businesses.

1.3. The practical guidance provided in this document does not override distributors' obligations under the Electricity Industry Participation Code (the **Code**).

1.4. The illustrated examples are intended to be realistic, but are indicative and should not be relied on as a guide to actual costs or charges for any specific connection.

1.5. The guidance in the document builds on a companion worksheet, which should also help with consistent and cost-effective implementation. This worksheet is available in the 'Resources' section of the 'Distribution connection pricing reform' webpage.[1]

1.6. The Authority encourages distributors to work together on implementation to reduce costs and enhance consistency across New Zealand.

1.7. The Authority has also published separate guidance that develops a range of worked examples to illustrate the application of all the newly introduced connection pricing requirements for distribution networks – enhancement cost allocation, capacity costing, pioneer schemes, and connection charge reconciliation.[2] The worked examples guidance uses posted capacity rates that are informed by the capacity costings developed in this document.

[1] Distribution connection pricing reform | Our projects | Electricity Authority

[2] https://www.ea.govt.nz/connection_pricing/guidance_document

2. Overview of posted capacity rates

2.1. The Electricity Authority Te Mana Hiko (Authority) published a decision paper in July 2025 on four new requirements for distributor connection pricing.[3] The new requirements will improve the efficiency of connection pricing. Consumers will ultimately benefit through more connections, a reduction in overall investment costs and the benefits that flow through to housing development, electrification and business growth. The decision paper provides detailed information on the rationale for the new requirements and builds on an earlier consultation paper.[4]

2.2. The new requirements apply to new connections and connection upgrades for load, including hybrid connections (with both load and injection). There are long-standing pricing requirements for distributed generation that remain in place alongside these new requirements.[5]

2.3. Most of the requirements will first apply to connection applications received by a distributor from 1 April 2026. One requirement (capacity costing) applies to connection applications received from 1 April 2027.[6]

2.4. The new requirements will be set out in Part 6B of the Electricity Industry Participation Code (the Code).[7] Code references are noted in this document, and key defined terms from the Code are bolded.

2.5. This document provides a guide to calculating the **posted capacity rates** that are used as the basis for estimating and allocating network capacity costs:

(a) posted capacity rates must be used from 1 April 2026 when preparing connection charge reconciliations – that is, standardised breakdowns of connection charges into incremental and network cost components

(b) from 1 April 2027, the posted rates must also be used if a distributor allocates upstream capacity costs to connections.

2.6. The intention of the rates is to allocate network capacity costs to connections progressively as capacity is consumed. This is an alternative to 'last straw' pricing, which allocates costs when an upgrade is triggered.

2.7. The rates are forward-looking as they are based on the estimated cost of adding capacity to the existing network. The rates are based on current cost estimates, adjusted for forecast cost escalation.

2.8. Capacity costing supports consistent, predictable, cost-reflective pricing:

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[3] https://www.ea.govt.nz/documents/7857/Distribution_connection_pricing_Code_amendment_-_Decision_paper.pdf

[4] https://www.ea.govt.nz/projects/all/distribution-connection-pricing-reform/consultation/distribution-connection-pricing-proposed-code-amendment/

[5] The Authority is reviewing connection pricing for distributed generation as well and published an issues paper in February 2025. https://www.ea.govt.nz/projects/all/distribution-pricing/consultation/distributed-generation-pricing-principles/

[6] Distributors may apply any of the new methodologies ahead of these dates if they wish. Capacity costing is used as part of charge reconciliation from 1 April 2026 but does not have to be used for deriving charges until 2027.

[7] https://www.ea.govt.nz/code-and-compliance/code/

(a) Capacity is costed and allocated using $ per kVA rates, so connection charges are higher for connections that consume more capacity.

(b) Rates are set for each of five **network tiers** (defined below), so costs reflect the level at which a connection is established.

(c) Rates are published and locked, supporting transparency, predictability and consistency.

(d) Costs allocated to a connection do not depend on 'position-in-queue' – the last-straw connection is allocated the same cost as the preceding (and following) connections.

Time period covered by posted rates

2.9. Distributors are required to **publish** their posted rates annually from 1 April 2026. The published rates:

(a) must cover the current disclosure year and the next four disclosure years (a rolling five-year period) – this supports transparency for connection applicants

(b) the rates for the first two years of each rolling five-year period cannot be updated, except to correct errors (ie, they are locked) – this supports predictability for connection applicants

(c) the two-year lock does not apply to rates for the year from 1 April 2027 to 31 March 2028 – this provides extra flexibility as new requirements are bedded in.

2.10. At each annual update of posted rates, each distributor will:

(a) remove the previous year one

(b) move the previous year two and three rates to year one and two without alteration (except to correct for errors)

(c) move remaining rates by one year and update if needed

(d) add a new rate for the final year.

How posted capacity rates are determined

2.11. The five network tiers are:

(a) low voltage mains (LV)

(b) distribution substation (DS)

(c) high voltage feeder (HVF)

(d) zone substation (ZS)

(e) sub-transmission line (STL)

2.12. Rates are set for each tier and **network costing zone** (see below) based on the estimated cost of adding capacity, divided by the capacity added.

2.13. When applying the rates, a distributor will assess the capacity consumed by the connection at each tier. These **capacity demand assumptions** account for factors such as diversity and coincidence – ie, the demand assumption at each tier is typically lower than the connection's capacity. For example, residential connections typically have a fuse capacity of 15 kVA and an after-diversity capacity demand of around 2.5 kVA at LV and DS tiers (and potentially less at higher tiers).[8]

2.14. Distributors may elect to use more than one **network costing zone** to categorise their network into different 'zones' with different posted capacity rates. This provides an ability for distributors to trade-off accuracy (ie, more granular zones) against simplicity (ie, fewer zones).[9]

2.15. Distributors may also decide to zero-rate capacity for one or more tiers. This allows a distributor to 'turn off' cost allocation in areas where there is high headroom and low growth such that consuming headroom is effectively costless.

2.16. When determining rates, a distributor must also determine **nominal capacity increments**. This is the amount of added capacity corresponding to the assumptions used to derive each posted capacity rate.[10]

Scenarios where an alternative approach may be used

2.17. There are four scenarios where a distributor may estimate and allocate capacity costs using an alternative approach:

(a) **extension-like upgrade** – where a distributor reasonably considers that an upgrade to shared network assets will substantially benefit only the connection applicant, then they must treat the work as an **extension**. The requirements for allocating extension costs do not rely on the posted capacity rates[11]

(b) large increment – if a connection will consume more than 80% of the applicable nominal capacity increment for a tier, then a distributor may use estimated capacity upgrade costs for that network tier (ie, the full cost of required upgrade works) in place of the posted rate[12]

(c) high or low cost – if a connection is in a part of the network where the distributor estimates a capacity cost for a network tier that is less than 80% or more than 150% of the posted rate, then it may use a bespoke estimated rate for that network tier.[13]

(d) network development – a distributor may elect to classify some portion of upstream upgrade work as a network development (rather than connection work). The distributor may then implement a local cost recovery scheme.[14]

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[8] This number may be larger for small populations of connections, and lower for higher network tiers. Also, distributors differ in their network planning standards so some may adopt higher (or lower) design assumptions to provide more (or less) buffer.

[9] Zones may differ by tier – for example, zones may have different LV rates but identical rates for the other tiers.

[10] The nominal capacity increment is used when determining whether a distributor can use estimated capacity upgrade costs instead of the posted capacity rate for that tier. See paragraph 2.17(b).

[11] Refer definition of extension-like upgrade

[12] Refer clause 6B.5(2)

[13] Refer clause 6B.5(3)

[14] Refer companion paper on connection pricing worked examples.

2.18. The first three of these provide options for a distributor to use more accurate estimates and allocations in certain circumstances, while the latter enables additional flexibility in the recovery of communal network costs.

3. Posted capacity rate worked examples

Overview

3.1. This section presents worked examples to illustrate how network capacity rates can be derived.

3.2. The following typical upgrade works have been identified and selected as examples for each network costing tier.

Table 3.1 – List of capacity costing tier examples

Case ID	Description
Low voltage mains	
LV-1	New single phase 400V supply
Distribution substation	
DS-1	New distribution transformer
High voltage feeder	
HVF-1	New high voltage feeder
Zone substation	
ZS-1	MV switchboard expansion and transformer uprating (assuming an existing zone substation with one transformer)
ZS-2	New zone substation with two transformers
ZS-3	New zone substation with three transformers
Sub-transmission line	
STL-1	New sub-transmission line connection to an existing GXP
STL-2	New switching station to tie two existing sub-transmission lines

3.3. We have used three hypothetical network costing zones to illustrate a range of capacity rate calculations and outcomes:

(a) **Metro area**: a centralised, densely populated area with restrictions on overhead line connections.

(b) **Urban area**: a more dispersed, less populated area with a mix of overhead lines and underground cables.

(c) **Rural area**: represents areas with long-distance connections, predominantly consisting of overhead lines.

3.4. The capacity rate for each network tier is determined by dividing the total cost ($) of upgrade works by the total capacity (kVA) increase provided.

3.5. To simplify the cost estimation, the following examples assume typical greenfield construction with no extreme environmental conditions.

3.6. To derive the rate for each costing zone we:

(a) define a typical project for that zone, consistent with a P50 cost estimate[15]

(b) estimate the cost of the typical project based consistent with a P50 estimate[16]

(c) estimate costs as if the project were built this year.

3.7. The rates derived above are for the current year. We use these to estimate rates for five future years by adding:

(a) any known material step changes in costs – eg, due to changes in construction practices, equipment specifications or contract terms

(b) general inflation – using forecast movements in CPI determined on a basis consistent with input methodology requirements[17]

(c) any other forecast movements in input costs (relative to CPI). For example, forecast movements in foreign exchange or real labour or capital goods costs.

3.8. Refer to Appendix A for examples of the cost estimation breakdown at each zone.

LV mains tier

3.9. We assume the typical upgrade path at LV mains level is to add a new 400V supply, rather than uprating lines or cables.

3.10. We exclude distribution transformer costs, as these are captured in the DS rates.

Table 3.1 – LV mains capacity rate

	Metro	Urban	Rural
Key assumptions	• 100% underground cable connection • 100m • Standard cable trenching work in urban areas with no challenging terrain or soil layers	• 50% underground, 50% overhead • 100m total length • Standard cable trenching work in urban areas with no challenging terrain or soil layers	• 100% overhead line connection • 300m • Non-challenging terrain with no right-of-way clearing issues
Project cost ($k)	79.9	65.7	51.3
Capacity increment (kVA)	300	300	300

15 Meaning upgrade projects are as likely to have a bigger (higher cost) scope as a small (lower cost) scope. For example, for lines the typical project may be based on mean length.

16 For example, include expected (average) contingency outturn rather than full contingency provision.

17 Refer clause 3.1.1(8) of the Electricity Distribution Input Methodologies, electricity-distribution-services-input-methodologies-determination-2012-consolidated-as-of-23-april-2024.pdf

	Metro	Urban	Rural
Rate ($ per kVA)	266.3	219.1	171

Distribution transformer tier

3.11. We assume the typical upgrade path at distribution transformer level is to add a new distribution transformer and a new RMU to connect to the nearest existing or new HV feeder.

3.12. We exclude high voltage feeder costs, as these are captured in the HVF rates.

Table 2.3 – Distribution transformer capacity rate

	Metro	Urban	Rural
Key assumptions	• 100% underground cable connection • 100m • Standard cable trenching work in urban areas with no challenging terrain or soil layers • Ground-mounted transformer	• 50% underground, 50% overhead • 100m total length • Standard cable trenching work in urban areas with no challenging terrain or soil layers • Ground-mounted transformer	• 100% overhead line connection • 300m • Non-challenging terrain with no right-of-way clearing issues • Pole-mounted transformer
Project cost ($k)	179.6	182	159.5
Capacity increment (kVA)	300	300	300
Rate ($ per kVA)	598.5	606.7	531.7

High voltage feeder zone

3.13. We assume the typical upgrade path at HV feeder level is to establish a new HV feeder between the new load and an existing zone substation.

3.14. We exclude zone substation extension costs, as these are captured in the ZS rates.

Table 3.3 – High voltage feeder capacity rate

	Metro	Urban	Rural
Key assumptions	• 100% underground cable connection • 2km • Standard cable trenching work in urban areas with no challenging terrain or soil layers	• 50% underground, 50% overhead • 2km • Standard cable trenching work in urban areas with no challenging terrain or soil layers	• 100% overhead line connection • 2km • Non-challenging terrain with no right-of-way clearing issues
Project Cost ($k)	510.2	515.2	508
Capacity increment (kVA)	6,000	6,000	6,000
Rate ($ per kVA)	85	85.9	84.7

Zone substation zone

3.15. We assume the following three scenarios as the typical upgrade paths at zone substation level.

(a) Case ZS-1 represents a scenario where a new HV feeder is established and supplied from an existing zone substation with one transformer. This scenario demonstrates a situation where switchboard extension and zone substation transformer uprating are required.

(b) Case ZS-2 represents a scenario where a zone substation with two transformers needs to be established.

(c) Case ZS-3 represents a scenario where an existing zone substation with two transformers is upgraded to add a third transformer.

3.16. We exclude associated transmission line costs (especially for ZS-2 and ZS-3) as these are captured in the STL rates.

3.17. We have excluded land procurement costs in these examples. This could be appropriate if the distributor already owns suitable land. In other cases, land costs could be a key differentiator between costing zones. In this case, with no land costs, the capacity rate for each example is identical across costing zones.

Table 3.5 – Zone substation capacity rate (ZS-1 case)

	Metro	Urban	Rural
Key assumptions	• There is enough space in the control building to extend the existing switchboard • An upgrade from a 10MVA to 15MVA 33/11kV transformer is assumed • No major civil/structural work required to replace the existing transformer		
Project Cost ($k)	2,276		
Capacity increment (kVA)	5,000		
Rate ($ per kVA)	455.2		

Table 3.4 – Zone substation capacity rate (ZS-2 Case)

	Metro	Urban	Rural
Key assumptions	• Land procurement and any associated substation civil/structural work costs are excluded • 15MVA 33/11kV transformer is assumed • The capacity increment is based on N-1 contingency scenario, ie, when one of the transformers is out of service		
Project Cost ($k)	6,936		
Capacity increment (kVA)	15,000		
Rate ($ per kVA)	462.4		

Table 3.5 – Zone substation capacity rate (ZS-3 Case)

	Metro	Urban	Rural
Key assumptions	• Land procurement and any associated substation civil/structural work costs are excluded • 15MVA 33/11kV transformer is assumed for the existing two transformers and the new transformer • The capacity increment is based on N-1 contingency scenario, ie, when one of the transformers is out of service		
Project Cost ($k)	3,311		
Capacity increment (kVA)	15,000		

	Metro	Urban	Rural
Rate ($ per kVA)	220.7		

3.18. In this case, where there are three upgrade scenarios with differing capacity rates a distributor could either choose to:

(a) define different costing zones at zone substation level. These could be more or less granular than the three costing zones used at other levels. For example, there could be one costing zone for parts of the network downstream from a $220.7 per kVA zone substation and another costing zone for the remainder of the network

(b) use a single rate based on a weighted average across the rates above.

Sub-transmission line tier

3.19. We assume the following two scenarios as the typical upgrade paths at sub-transmission line level.

(a) Case STL-1 represents a scenario where a new sub-transmission line is to be established to an existing grid connection.

(b) Case STL-2 represents a scenario where a switching station is to be established, tying two existing sub-transmission lines to increase the overall network capacity, especially under N-1 contingency scenario. Refer to Figure 3.1.

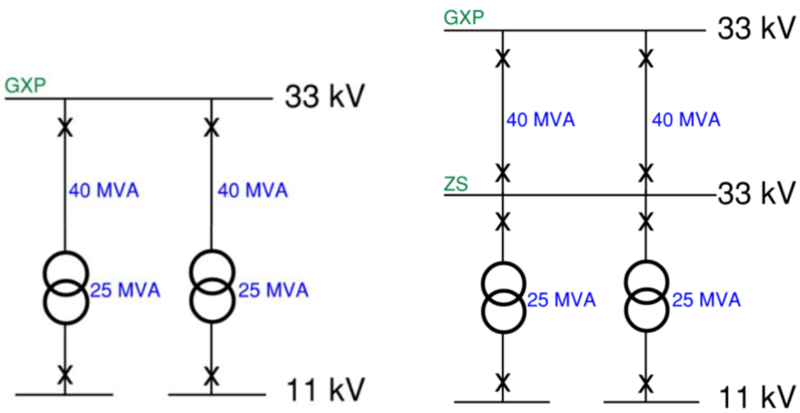

Figure 3.1 – Case STL-2 diagrams: (Left) Before; (Right) After

3.20. We exclude any costs related to any upgrades on the GXP substation, as these fall outside the definition of **distribution network**. Transmission costs are either:

(a) directly allocated to a connection applicant in the case that they meet the definition of **incremental transmission costs**. This is relevant to individual connections that are large enough to directly trigger transmission works

(b) treated as a **network cost** – ie, outside the scope of **incremental costs**.

Table 3.6 – Sub-Transmission Line Capacity Rate (STL-1 Case)

	Metro	Urban	Rural
Key assumptions	• 100% underground cable connection • 10km • Standard cable trenching work in urban areas with no challenging terrain or soil layers	• 50% underground, 50% overhead • 10km total length • Standard cable trenching work in urban areas with no challenging terrain or soil layers	• 100% overhead line connection • 10km • Non-challenging terrain with no right-of-way clearing issues
Project Cost ($k)	4,530	3,317.5	2,105
Capacity increment (kVA)	2500	2500	2500
Rate ($ per kVA)	181.2	132.7	84.2

3.21. The estimated rate presented below assumes no land procurement costs, so the cost for all three costing zones is identical. If there were land procurement costs then these could drive significant variation between the costing zones.

Table 3.7 – Sub-transmission line capacity rate (STL-2 Case)

	Metro	Urban	Rural
Key assumptions	• The two existing circuits are assumed to be in close proximity with each other and therefore line or cable rerouting costs are not considered.		
Project Cost ($k)	1,570		
Capacity increment (kVA)	13,000		
Rate ($ per kVA)	120.7		

Appendix A Worked examples for posted capacity rates - calculations