



Policy for determining capital contributions on Vector's electricity distribution networks

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Electricity Distribution Information
Disclosure Determination 2012



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1. Introduction

- 1.1 This document describes Vector's policy for determining capital contributions and meets the requirements of clause 2.4.6 of the Electricity Distribution Information Disclosure Determination 2012 (consolidated in 2018).
- 1.2 Vector provides electricity lines services to consumers via its electricity distribution network covering the Auckland region. Vector recovers the ongoing cost of providing electricity lines services to existing consumers through electricity distribution prices (lines charges), including published standard prices and (in a limited number of circumstances) non-standard prices. Vector's prices are set with reference to the Electricity Authority (EA) Distribution Pricing Principles (see Appendix A).
- 1.3 A key feature of electricity distribution networks is that many of the assets used to supply consumers are highly interconnected, so many of the assets are used by many consumers. The way the network of assets has been built up over time is something that Vector now has limited ability to change, however Vector is able to determine present and future investment decisions in the electricity distribution network.
- 1.4 Vector's distribution prices and capital contributions are designed, in line with Pricing Principles published by the Electricity Authority, to efficiently recover the cost of the existing electricity distribution network and the cost of new investments in the distribution network as it grows through (as below) collectively referred to in this policy as consumer connection / sole use assets:
 - (a) *the addition of new connections;*
 - (b) *the augmentation of existing connections;*
 - (c) *the addition of new sole use assets; or*
 - (d) *the augmentation of existing sole use assets.*
- 1.5 Vector's distribution prices are set to recover the costs of owning and operating the electricity distribution network as it currently exists. The most significant cost element reflected in Vector's distribution prices relates to physical electricity distribution assets, for example the lines, wires, poles, transformers and cables. These assets are part way through their useful life, meaning their value is also part of that of equivalent new assets. This means that Vector's distribution prices are lower than they would be if the assets were new or, in other words, the distribution prices may be insufficient to recover the full cost of a new investment in the network.
- 1.6 To send the right price signals to consumers and ensure new investments in the network are as efficient as possible, consumers are charged for the full cost of consumer connection / sole use assets. Consumers requiring consumer connection / sole use assets also pay a contribution for additional shared assets that are the result of the consumer connection / sole use assets being added to the network.

- 1.7 As Vector's capital resources are limited it must prioritise its expenditure, consequently investing in consumer connection / sole use assets results in existing consumers helping to fund these new assets. The adding of consumer connection / sole use assets over time requires additional shared assets to be added to the network. Vector therefore requires consumers to fund their consumer connection / sole use assets directly via a consumer connections / sole use asset capital contribution and to partially fund additional shared assets via a growth asset capital contribution. In combination referred to as capital contributions.
- 1.8 Capital contributions typically take the form of an upfront one-off payment with respect to the cost of providing consumer connection / sole use assets (consumer connection / sole use asset capital contribution). The capital contribution also includes a contribution towards the cost of additional shared assets resulting from the provision consumer connection / sole use assets (growth asset capital contribution or development capital contribution).
- 1.9 The Input Methodologies¹ require that capital contributions received are netted off the value of commissioned assets added to the Regulatory Asset Base (RAB). This means that consumer connection / sole use assets and additional shared assets only contribute to future revenue requirements to the extent they have not already been paid for via a capital contribution. This tries to ensure that there is no cross subsidy by consumers only using existing network assets to consumers adding consumer connection / sole use assets that also result in additional shared assets.
- 1.10 This document sets out Vector's policy for determining such capital contributions.

2. Objectives of the capital contribution policy

- 2.1 Vector's capital contribution policy has been developed with the following objectives:
 - (a) The addition of consumer connection / sole use assets should not make existing consumers worse off either now or in the future.
 - (b) Ideally, the addition of consumer connection / sole use assets should benefit existing consumers as consumers adding consumer connection / sole use assets should also contribute towards existing shared costs and assets via distribution charges.
 - (c) The cost of providing consumer connection / sole use assets should be determined using a "but for" or avoidable cost approach that identifies the costs attributable to the consumer connection / sole use assets, both direct and indirect.
 - (d) Capital contributions should incentivise improved utilisation of the electricity distribution network and not incentivise inefficient construction (for example: over-sized network assets).
- 2.2 Vector considers that the capital contribution policy and its implementation as detailed in this document achieves these objectives for the following reasons:
 - (a) Objective (a) is achieved as existing consumers do not subsidise or contribute to the cost of consumer connection / sole use assets except to the extent that existing consumers derive a benefit from those additional assets. As well capital

¹ https://comcom.govt.nz/_data/assets/pdf_file/0017/60542/Electricity-distribution-services-input-methodologies-determination-2012-consolidated-20-May-2020-20-May-2020.pdf

contributions partially fund additional shared assets that result from the addition of consumer connection / sole use assets.

- (b) Objective (b) is achieved as consumer connection / sole use assets benefit from the overall existing and future shared assets through Vector's distribution pricing, including the ongoing maintenance and enhancement of Vector's interconnected distribution system. This is of benefit to all consumers, both present and future.
- (c) Objective (c) is achieved as Vector assesses and recovers the costs resulting from the consumer connection / sole use assets; "but for" the consumer connection / sole use assets no investment would be required by Vector. From Vector's perspective the investment is avoidable.
- (d) Objective (d) is achieved as Vector only supplies the consumer new assets agreed with and required by the connecting party and only adds additional shared assets as required that results from the supplying the consumer connection / sole use assets as agreed with and required by connecting parties through time. This ensures that capacity on the network is maintained that allows ongoing consumer connection / sole use assets to be added to the network. Vector's capital investment is in assets for the shared use of all existing consumers. Vector seeks to ensure a reliable and resilient network is provided to existing consumers and is readily accessible to new connections and consumers.

3. Circumstances for requiring a capital contribution

- 3.1 Vector requires a consumer connection / sole use asset applicant to pay a capital contribution when any additions or augmentation to the electricity distribution network are required to provide assets requested and agreed to by the consumer. The additions considered are specifically:
- (a) *the addition of new connections;*
 - (b) *the augmentation of existing connections;*
 - (c) *the addition of new sole use assets; or*
 - (d) *the augmentation of existing sole use assets.*

4. Methodology for determining the amount of a capital contribution

- 4.1 Vector has developed its capital contribution policy to meet the objectives outlined in section 2. Vector has achieved this by:
- (a) Adopting an approach to determine individual capital contributions so that the contribution from new connections is either sufficient on average to recover the costs of new connections in the case of standard connections or are equal to Vector's costs in the case of non-standard new connections, enhanced connections or new and enhanced sole use assets. Also, that the capital contribution through time partially funds additional shared assets that are the result of consumer connections / sole use assets. This avoids cross subsidies between new and existing connections for the connection assets or sole use assets and allows existing and new connections access to the shared network assets on an equivalent basis;
 - (b) Developing approaches to identify the costs relevant to the consumer connection / sole use assets. Then including these costs in the determination of the connection /sole use capital contribution. Also developing approaches to identify the costs of additional shared assets resulting from consumer connection / sole use assets.

Then including these costs in the determination of the growth capital contributions;
and

- (c) Ensuring consumer connection / sole use asset applicants have financial incentives (through capital contributions) to assess the technical requirements of their connection or sole use assets carefully so that efficiently sized assets are provided.

5. Determining costs

5.1 Avoidable or incremental costs are the costs that would be incurred by Vector from augmenting the electricity distribution network that Vector would not otherwise face 'but for' the consumer connection or sole use assets. Avoidable or incremental costs may relate to:

- (a) Assets for use only by the consumer connection / sole use asset applicant or consumer and the associated costs;
- (b) Wider system assets are directly impacted by the applicants connection / sole use assets, and the associated costs; and
- (c) Additional shared assets required and associated costs as a result of consumer connections / sole use assets being added over time.

5.2 Avoidable or incremental costs relating to the new or enhanced connections may include but are not limited to the following:

- (a) Design and certification costs;
- (b) Any costs for conducting a tender process for the applicant;
- (c) The costs of procuring materials and services, building, constructing and commissioning assets;
- (d) Any legal or administrative costs, including procuring appropriate easements, statutory consents and negotiating suitable contractual arrangements;
- (e) Augmentation of existing assets to provide the new connection;
- (f) The cost relating to changes in the timing of planned shared electricity distribution network investment in order to facilitate the new connection; and
- (g) The incremental cost of the consumption of existing capacity regarding the level of available service capacity and the effect of additional usage on future investment costs.

5.3 Where avoidable or incremental costs relate to new or enhanced sole use assets, these are fully attributed to the new or enhanced sole use assets.

5.4 Where the avoidable or incremental cost relates to wider system assets that are directly impacted by the applicant's connection / sole use assets, Vector determines the avoidable or incremental cost with reference to:

- (a) Changes in the timing of capital expenditure compared with Vector's Asset Management Plan on a 'but for' the new connection' basis;
- (b) The applicant's allocated share of actual capital expenditure in shared assets required to provide new or enhanced connection or new or enhanced sole assets; and/or
- (c) The applicant's share of any identifiable upstream augmentation.

- 5.5 Where the avoidable or incremental cost relates to additional shared assets being required through time due to consumer connection / sole use assets being added. Vector determines the avoidable or incremental cost with reference to:
- (a) The historic and forecast system growth expenditure by cost sub-grouping from Vector's Electricity Information Disclosures and Asset Management Plan;
 - (b) The historic and forecast transformer expenditure if not already included in the system growth expenditure;
 - (c) The historic and forecast gross connections and upgrade projects by consumer group (residential, SME and commercial); and
 - (d) The average capacity (kVA) by consumer group based on recent new connections and upgrade projects.
- 5.6 The information in 5.5 is used to determine the growth capital contribution by determining a standard \$ per kVA charge applicable for all consumers that connect consumer connections or sole use assets to Vector's low voltage network, whereas non-standard or bespoke pricing is used when determining the growth capital contribution for those applicants connecting consumer connections / sole use assets to the high voltage network.
- 5.7 The average annual growth expenditure (average of the three years historic and five years forecast system growth and transformer capex) at the cost sub-grouping is allocated to consumer groups based on its proportion of incremental kVA (number of gross connections and upgrade projects times the average kVA per connection or upgrade). Only expenditure at and/or upstream of the consumer groups network connection points are included in their allocation. The allocated average annual system growth costs for Vector's low voltage network is divided by the average low voltage network incremental kVA per annum to give the \$ per kVA for determining the standard growth capital contribution charge for all consumers that connect to Vector's low voltage network. The growth capital contribution charge for the connection is the \$ per kVA times the installed incremental kVA of the connection.

6. Extent of consumer connection or sole use cost

- 6.1 If the applicant requests assets of a higher standard or more costly nature than Vector considers necessary, then the avoidable or incremental cost may include the greater costs (if any) that may result.
- 6.2 Where an applicant's requirements fall between the capacity of two standard size network elements capable of meeting such requirements and Vector installs the larger of the two, this does not constitute Vector electing to perform the work to a higher standard or capacity.

Example 1: An applicant requires a new dedicated transformer, with a connection capacity of 602kVA. The nearest standard transformer sizes are 500kVA and 750kVA. Vector installs a 750kVA transformer as this is the smallest standard size capable of meeting the applicant's requirements. The use of a 750kVA transformer as opposed to a 500kVA transformer does not constitute a higher standard for the purposes of determining avoidable cost.

7. Different types and treatments of new connections

- 7.1 Vector has identified two different types of new connection: standard and non-standard connections. Vector has a different approach to determining the capital contributions that apply. In each case Vector utilises the same underlying approach as specified in section 5.

8. Consumer connection asset capital contributions for standard new connections

- 8.1 Certain new connections to Vector's network require a low level of technical input in order to connect each new consumer, as they are generally of the same technical requirements. Based on this, Vector has standardised new connection prices for eligible consumers into a schedule of standard prices. These prices have been determined based on a review of the costs of connecting a significant number of historical new connections that meet the technical criteria.
- 8.2 The schedule of prices and eligibility criteria Vector applies to standard new connections are published on Vector's website.

9. Consumer connection / sole use capital contributions for non-standard connections and sole use assets

- 9.1 Non-standard connection capital contributions are all connections and sole use assets that don't meet the eligibility criteria for standard prices. For non-standard new or enhanced connections or new or enhanced sole use assets Vector applies the specific cost to determine the required consumer connection / sole use asset capital contribution.

10. Capital contributions for projects by other infrastructure owners

- 10.1 Vector may apply different methodologies for determining capital contributions for projects involving other infrastructure owners such as territorial authorities or government-owned entities which are covered by other legislation and regulations that would dictate how the contribution is determined. This reflects the potential for cost reductions which arise due to coordination of works by the different infrastructure owners.

11. Adherence to pricing principles

- 11.1 Vector's capital contribution policy is consistent with the Distribution Pricing Principles published by the Electricity Authority in June 2019. These are included in Appendix A.
- 11.2 Charging connecting consumers dedicated consumer connection / sole use costs equal to the avoidable costs ensures that any capital contribution falls within the subsidy free range (equal to or greater than incremental costs, and less than or equal to standalone costs).
- 11.3 Including a growth charge in the capital contributions, provides a price signal to connecting consumers of the effect connection / sole use assets have on future investment costs.
- 11.4 Vector's distribution prices recover the costs of the existing electricity distribution network and a portion of investment and enhancement of shared assets that are to the benefit of all consumers. Vector's capital contribution policy means that capital contributions recover avoidable or incremental costs. These two mechanisms combined ensure that allowed revenues are fully recovered. As a consequence, Vector has not considered revenue under-recoveries in this contribution policy.
- 11.5 For non-standard consumer connections / sole use asset, Vector is able to negotiate differing levels of economic value from a service or to mitigate against uneconomic bypass.
- 11.6 A simple capital contributions structure enhances transparency. The schedule of prices and eligibility criteria Vector applies to standard new connections are published on Vector's website.

12. Use of independent contractors

- 12.1 In some circumstances the applicant may undertake some of the work that would otherwise be covered by the capital contribution. Vector may allow consumers or the applicant to undertake the preparatory work using appropriately trained and qualified personnel familiar with Vector's standards and requirements prior to Vector installing the new electricity infrastructure. Preparatory work includes by way of example, trenching and or civil work, reinstatement and laying of duct.
- 12.2 If the consumer or applicant performs some of the work, then the costs associated with this work will be excluded from the costs used to determine the capital contribution. They will also be excluded from the RAB and the determination of distribution prices.

13. Definitions

Applicant means a local authority and any association of persons whether incorporated or not applying for a new connection service and may include a consumer.

Augmentation means the expansion, upgrade, increase, addition to, removal, relocation or enhancement of any part of the electricity distribution network which would not otherwise be required but for the requirements of a new connection service. Augmentation may include the allocation of extant spare capacity (i.e. prior augmentation) to a new connection service.

Avoidable cost means the costs determined in accordance with section 5.

Capital contribution means the money or monetary value or other consideration to be charged to or received from consumers or other parties for the purposes of asset construction, acquisition or augmentation that is in addition to, and separate from any ongoing revenue through distribution prices.

Capital contribution policy means the document that outlines the policy or methodology for determining capital contributions. Vector's current and previous capital contribution policies are available at <https://www.vector.co.nz/about-us/regulatory/disclosures-electricity/capital-contributions>.

Consumer means a local authority and any association of persons whether incorporated or not who is supplied with electricity from the electricity distribution network.

Consumer connection means a new point on the electricity distribution network or an existing point, either of which requires augmentation in order for Vector to provide electricity distribution services to a consumer or applicant.

Consumer connection service means the provision of electricity lines services on the electricity distribution network to a consumer connection.

Consumer connection / sole use assets mean assets connected to the network for additions in accordance with section 1.4 in order to receive electricity distribution services.

Consumer connection / sole use costs mean the costs associated with consumer connection and sole use assets.

Distribution prices means Vector's standard published prices and non-standard prices.

Electricity distribution network means the Vector owned works that are used or intended to be used by Vector to provide electricity lines services.

Electricity lines services means the provision of electricity lines services as defined in s54C of the Commerce Act 1986.

Input Methodologies means the Electricity Distribution Services Input Methodology Determination 2012.

RAB means Vector's regulatory asset base, in respect of the electricity distribution network.

Shared assets means a network asset used by more than one consumer in order to receive electricity lines services.

Shared costs mean the costs associated with shared assets.

Vector means Vector Limited and its related companies (as defined in the Companies Act 1993).

Appendix A The 2019 EA Distribution Pricing Principles

- (a) Prices are to signal the economic costs of service provision, including by:
 - i. being subsidy free (equal to or greater than avoidable costs, and less than or equal to standalone costs);
 - ii. reflecting the impacts of network use on economic costs;
 - iii. reflecting differences in network service provided to (or by) consumers; and
 - iv. encouraging efficient network alternatives.
- (b) Where prices that signal economic costs would under-recover target revenues, the shortfall should be made up by prices that least distort network use.
- (c) Prices should be responsive to the requirements and circumstances of end users by allowing negotiation to:
 - i. reflect the economic value of services; and
 - ii. enable price/quality trade-offs.
- (d) Development of prices should be transparent and have regard to transaction costs, consumer impacts, and uptake incentives.