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# Capital Contributions Methodology

## 1. Introduction

This methodology describes the ownership, funding arrangements and obligations for Customer Initiated Works (CIW), including extensions and upgrades to MainPower New Zealand Limited's (MainPower) electricity distribution network. It includes a description of the circumstances under which MainPower may require a capital contribution from customers and the methodology for determining these contributions.

This methodology is published in accordance with Section 2.4.6 and 2.4.8 of the Commerce Commission's 'Electricity Distribution Information Disclosure Determination 2012' (IDD).

In this methodology MainPower is required to state when a capital contribution will be required and how the quantum will be determined. It is also required to describe the extent to which this methodology is consistent with the Electricity Authority's pricing principles, see Appendix 3. MainPower must also include a statement as to use of third-party contractors.

This Capital Contributions Methodology should be read in conjunction with MainPower's Pricing Methodology.

MainPower's Pricing Methodology describes how capital contributions will be sought from the customer when the expected distribution revenue from a connection is less than the incremental costs, including a share of any upfront or future network augmentation costs and thus ensuring avoidable connection costs are fully recovered.

As our customers' use of electricity and new technologies evolve, MainPower will continue to review how it recovers the costs of providing a network. This will affect both contributions under this Capital Contributions Methodology and distribution pricing under the Pricing Methodology.

## 2. Funding objectives for network extensions and upgrades

MainPower has developed a set of 6 objectives (Funding Objectives) that underpin this methodology. These objectives have been developed having regard to the regulatory requirements, commercial drivers and consumer expectations:

- Objective 1:* Minimise cross subsidisation between current and future consumers;
- Objective 2:* Avoid or minimise uneconomic bypass;
- Objective 3:* Support connection of distributed energy resources and flexibility services when available;
- Objective 4:* Applied consistently regardless of which service provider delivers the capital works;
- Objective 5:* Consistency with regulatory requirements and supports MainPower's Pricing Methodology;
- Objective 6:* Consistency with MainPower's consumer ownership and does not erode MainPower's brand/relationship with its consumers.

## 3. Ownership of network extension and upgrade assets

To ensure ongoing requirements of safety, reliability and system security, MainPower will own all new high voltage lines and transformer substations unless the CIW customer has a specific requirement to own the asset themselves.

MainPower will also own low voltage distribution lines, cables, link boxes, and service boxes where those assets are supplying multiple landowners or cross a public road, including situations where MainPower's lines cross private property.

Where network extensions and upgrades are owned by MainPower over private property, an easement in gross in favour of MainPower, will be required. MainPower has standard terms for easements and these terms can be obtained from MainPower.

All survey and legal costs associated with the preparation and registration of an easement over CIW network extensions or upgrade are the responsibility of the CIW customer.

Any customer seeking to connect to a network extension on neighbouring land will need to negotiate an easement across the property with the landowner before a connection is approved. The legal and survey costs associated with the easement will be the responsibility of the customer seeking to connect.

Low voltage lines beyond the Point of Supply (PoS) at the property boundary are owned by the landowner, as defined in the Electricity Act 1992. Please refer to our Network Connection Standards for the requirements.

For clarity, the application of the Capital Contributions Methodology applies only to assets owned by MainPower.

## 4. Economic value of new and increased loads

### Actual cost

MainPower calculates the cost of designing, building and operating new assets on its network and recovers the cost of doing so in accordance with the Funding Objectives as described above. In assessing where those costs lie and what contribution MainPower and the customer will make the following steps are followed for all CIW:

a) Network component

In some cases, CIW will require upstream reinforcement and development of the Network. As part of MainPower's job quoting process, the scope of works is reviewed to identify any network components that support specifically, MainPower's broader network development. Costs driven by the CIW are included in the Capital Contributions calculation. Costs associated with MainPower's broader network development are excluded from the Capital Contributions calculation.

b) Residual / customer component

The scope of works that supports the CIW either in part or in its entirety is then assessed against both MainPower's future revenue stream as well as to a set of minimum charges that apply.

These costs typically relate to dedicated assets solely used by the customer but may also relate to assets that may be shared (e.g. transformers). These assets are generally costed to recover direct internal design costs, planning costs and supplier quoted rates.

However, customers must fund their individual Service Main(s) beyond the PoS in all cases. MainPower does not contribute to customer-owned works or installations.

c) Future revenue and MainPower's contribution

By forecasting the incremental future revenue stream as a result of the CIW, MainPower is able to determine the economic contribution it is able to make. This amount represents the maximum economic contribution by MainPower towards the cost of the CIW. How the value of this future revenue stream is calculated is outlined in the "Calculating MainPower's economic contribution" section.

Subsequently, in broad terms the difference between the cost of the works and MainPower's contribution is the capital contribution required from the customer:

$$\text{Capital contribution} = \text{Max of } [\text{Cost of CIW} - \text{MainPower's Contribution}], \text{ Minimum Charge}$$

### Minimum charges

A set of minimum charges may apply to each CIW. These charges include the following components of:

- Installation Control Point (ICP) Creation Fee
- Design and Application Fees
- Capacity Increase Charge

These minimum charges are set to ensure MainPower recovers sufficient future revenue in consideration of the uncertainty in what the future electricity consumption will be.

### Calculating MainPower's economic contribution

The following formula is used:

$$EC = [PV (I, N-D, DLC \times OP) - CP] / (1 + I) D$$

Definitions are included in Appendix 2.

## 5. Funding approach when new ICPs are created

### 5.1 Sub-division

All sub-divisions will be designed, costed and funded through the process outlined in Section 4, including both greenfield and in-fill, rural and urban subdivisions. This process applies for all sub-divisions of any number of lots.

This includes the application of both a MainPower contribution, if any, and applicable charges.

#### Minimum Charges

The charges applied will include an Application, Design and ICP Creation Fee.

#### Phasing of sub-division stages

Where sub-divisions are developed through stages, these stages are assessed on a stand-alone, independent basis.

### 5.2 New ICP only

In instances where a new ICP is created but no sub-division is associated with it the standard process outlined in Section 4 is followed.

This includes the application of both a MainPower contribution, if any, and applicable charges.

#### Minimum Charges

The charge applied will include an Application, Design and ICP Creation Fee.

## 6. Funding approach when no new ICPs are created

### 6.1 Capacity Increase

Where customer demand exceeds the network's available capacity, and MainPower is asked to increase the capacity of its service fuse, it will impose a Capacity Increase Charge for a 3 Phase-Amp or 1 Phase-Amp connection. The fuse size is used as a proxy for capacity and hence peak demand. This increase in peak demand places a greater load on the distribution network.

If an increase in consumption is agreed as a consequence of the fused capacity increase, the standard process outlined in Section 4 is followed using the marginal increase in forecast demand to establish a MainPower contribution, if any.

Any new connection, fused at a larger size than MainPower's standard new connection size, will attract a Capacity Increase Charge except for new connections where the customer has funded a network extension or upgrade and has sole use of that extension or upgrade. Please refer to our Network Connection Standards for the requirements.

## 6.2 Underground conversion and asset replacement

In circumstances where CIW involves only underground conversion and asset replacement, no MainPower contribution is considered, and the works are quoted inclusive of the applicable charges.

### Minimum Charges

The charge applied will include an Application, Design and ICP Creation Fee (when a new ICP is required).

## 7. Application Fee

For all CIW whether for a new ICP, capacity increase, underground conversion or asset replacement, an application fee is charged to cover MainPower's administration of the design, costing and quotation functions. The level of the Application Fees are set annually and are available on the MainPower website and are non-refundable.

## 8. Design Fee

Depending on the complexity of the work required, a range of Design Fees are applicable to CIW. The Design Fee includes the cost to develop a MainPower quote for the work.

## 9. Credits

### 9.1 Replaced asset refund

When the upgrading of a network asset occurs, the assets are costed net of the value of any existing assets which have an alternative use on the network. In particular, for a transformer upgrade, the equivalent replacement cost of the old transformer will be netted off the new upgrade transformer to determine the incremental cost.

### 9.2 Reapportionments

A new customer may connect to a part of the network for which another customer has made a capital contribution provided that any appropriate easements have been granted by mutual agreement between all parties. In this circumstance, a reapportionment of the original capital contribution may be made to the original customer taking account of the following calculations and considerations:

- a) Reapportionments will apply only to the 5-year period following the original customer contribution occurring. The value of this original customer contribution will be discounted by 20% per annum.
- b) The reapportionment value will depend on the estimated proportion of the assets to be effectively shared by the new connection, taking into account the suitability of size, type, and location of the asset with regard to the new customer's requirements.
- c) The cost apportioned to the new customer is added to the network capital cost of the new connection, before MainPower's contribution is deducted, and a corresponding amount is refunded to the original contributor.
- d) In the event of a property changing hands, any such refund will be payable to the current owner at the time of the new connection.

- e) Where a customer(s) contributes towards the capital cost of a new extension, then they shall be entitled to additional new connections to that extension without incurring a reapportionment to any other customer. This includes new connections in any future subdivision that is developed by the original customer, and which will be supplied from the extension.
- f) Unless otherwise agreed and documented, any previous CIW that included a capital contribution will be treated under the reapportionment mechanism that existed at the time of the works and will be carried forward or 'grand-fathered'.

MainPower reserves the right to make all reapportionment decisions using its absolute discretion.

### 9.3 Excess Capacity

Where a customer has funded a network extension or upgrade, irrespective of reapportionments, any unused capacity available in the network shall remain the property of MainPower. MainPower may allocate excess capacity to other customers at MainPower's sole and absolute discretion.

## 10. Distributed Generation

MainPower intends to facilitate the uptake of Distributed Generation (DG) in its network and will consider the community benefits of any network enhancement that is required as part of the DG connection. The impact of this benefit and any associated MainPower contribution will be determined on a case-by-case basis at the absolute discretion of MainPower.

## 11. Customised Price-Quality Solutions

Where a customer on MainPower's network requires a different or enhanced quality of supply, MainPower will assess the subsequent and future benefits to the community of any network enhancement that is required. The impact of this benefit and any associated MainPower contribution will be determined on a case-by-case basis at the absolute discretion of MainPower.

## 12. Summary

The table below summarises when a MainPower contribution is calculated and fees that are applicable to the most common CIW requests.

	New ICP		Existing ICP		Notes
	Sub-division	Non sub-division	Capacity increase	U/G conversion & asset replacement	
MainPower Contribution	✓	✓	✓		As calculated.
Application Fee	✓	✓	✓	✓	
ICP Creation Fee	✓	✓			
Capacity Increase Fee			✓		
Design Fee	✓	✓	✓	✓	As applicable. See Section 8.

Refer to Appendix 1. for current fee levels which are updated periodically.

### 13. Third party contractors

Customers can use third party contractors to construct network extensions and upgrades. MainPower will take ownership of the network extension and upgrade assets in accordance with Section 3 of this Methodology, subject to the assets meeting MainPower’s connection standards. Customers using third party contractors are eligible to receive economic funding under Section 4 of this Methodology. Customers wishing to use a third-party contractor will need to enter into the Third-Party CIW Contract with MainPower.

Customers may request an independent quotation for completion of work on their property from a MainPower approved contractor. Where customer works are constructed by third party contractors, MainPower may purchase works at the Economic Value to MainPower per Section 4, provided the works comply with MainPower standards. In assessing the Economic Value, MainPower will consider any other works required and any funding already provided.

### 14. Querying Capital Contribution charges

If a customer queries the Capital Contribution charge, MainPower must provide a reasonable explanation of the Capital Contribution charge within 10 working days of receiving that request. Enquiries can be made through the MainPower website or by telephoning MainPower directly.

### 15. Changes to the Methodology

MainPower, acting reasonably, reserves the right to change this methodology from time to time.

### 16. Definitions

For the purpose of this document:

Capacity Increase	are situations where existing ICPs require larger fuses to allow for load growth.
Capacity Increase Fee	are fees payable by a person requiring a capacity increase, for their ICP.
Capital Contributions	are customer payments toward the cost of MainPower owned assets.
CIW	Customer initiated works.
Customer Initiated Projects	are MainPower projects to provide capacity for a customer or reconfigure the network in response to a customer request.
Distributed Generation (DG)	Generation of electricity for use on-site, rather than transmitting energy over the electric grid from a large, centralised facility.
ICP	Installation Control Point.
IDD	Electricity Distribution Information Disclosure Determination 2012, issued 1 October 2012 (Decision No. NZCC22).
Network Extensions	are new MainPower-owned assets constructed as part of a customer-initiated project.
Network Upgrades	are works upon MainPower owned assets to allow greater capacity by a customer-initiated project.

Pricing Methodology	the methodology prepared and publicly disclosed in accordance with clause 2.4.18 of the IDD and is available on the MainPower website.
“Service Main”, “Point of Supply” and other common terms.	are taken to have their industry standard meaning.

## 17. Appendix 1: Schedule of fees and charges

Fees / charge component	Value
ICP Creation Fee	\$770 / ICP
Application Fee	\$200 / application – <i>Raise and terminate/ICP Creation</i> \$400 / application - <i>Simple</i> \$600 / application - <i>Standard</i> \$1,000 / application – <i>Complex/Third Party Design Approval</i>
Design Fee	\$500 / application - <i>Simple</i> \$850 / application - <i>Standard</i> To be determined on application - <i>Complex</i>
Capacity Increase Fee	\$120 per 3-phase Ampere \$40 per single-phase Ampere
Distribution Line charges	<a href="https://mainpower.co.nz/about-us/network-pricing">https://mainpower.co.nz/about-us/network-pricing</a>

*Current at 01.04.2023*

All prices in this methodology exclude any taxes such as GST. Refer to the MainPower website for updates.



## 18. Appendix 2: Economic Value Definitions

<i>EC</i>	Economic contribution to the works from MainPower.
<i>PV</i>	Present Value calculation of future cash flows.
<i>I</i>	Interest: represents the discount rate assumption for new investments before tax. The discount rate is updated on a periodic basis.
<i>N</i>	Number of years: represents the anticipated economic life of the “extension” assets over which a future revenue stream is highly likely to be recoverable. For the purpose of the formula this is assumed to be 40 years for Residential and 20 years for Commercial & Industrial, unless the life is known to be less.
<i>D</i>	Delay in years between the initial capital expenditure and the effective income stream becoming established: For residential subdivisions, this is the estimate based on the number of years until 50% of the lots in a subdivision have customers connected.
<i>DLC</i>	Distribution Line Charge which is the sum of the fixed (FDLC) and variable (VDLC) line charges at the time of application. For simplicity, we do not escalate these prices over the forecast period. The Distribution Lines Charge is updated on a periodic basis.
<i>OP</i>	Operation Provision: removes the operations and maintenance component of Distribution Lines Charges (DLC) in recognition that DLC fund both direct and indirect operating and maintenance costs as well as capital costs. The operations and maintenance component are removed so that capital contributions are only calculated with reference to capital costs. The estimated Operations Provision is updated on a periodic basis.
<i>CP</i>	<p>Capacity Provision: recognises the requirement for capital upgrades to upstream assets as a result of load growth including increasing security and reliability levels for larger load bases. This cost signals the additional capital costs to MainPower in augmenting core network assets. These costs are typically shared by all consumers.</p> <p>CP is calculated by assessing the average contribution to the local peak load and multiplying this by an assessed long-run cost per kW to reinforce upstream assets.</p> <p>Represents the unfunded cost of upstream reinforcement. These costs do not take account of any incremental operations and maintenance costs, which are assumed to be recouped through future Distribution Line Charges.</p>

## 19. Appendix 3: Consistency with Electricity Authority Pricing Principles

Consistent with Section 2.4.6 (1)(c) of the IDD, the table below describes the extent to which this methodology is consistent with the Electricity Authority’s distribution pricing principles. Please note that the pricing principles apply to both the Pricing Methodology for setting distribution lines charges and capital contributions. Some of these principles are not directly relevant to capital contributions. For further discussion please see the Pricing Methodology on the MainPower website.

Principle	Extent of Consistency
(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);	<p>Avoidable costs are those that can be avoided by not serving a consumer or group of consumers, including the cost of dedicated connection assets and upstream reinforcement. MainPower interprets stand alone cost to mean the cost to the consumer of replicating the distribution services using an equivalent alternative energy supply.</p> <p>MainPower’s capital contributions methodology is the primary tool for ensuring that MainPower recovers at least the avoidable costs of its capital investments.</p> <p>Capital contributions should also logically be less than standalone costs as they seek to top up distribution prices in order to recover incremental connection costs. Where distribution prices exceed incremental cost then no contribution is required. Please see the Pricing Methodology for a discussion of the extent to which distribution prices are consistent with the pricing principles.</p>
(ii) Reflecting the impact of network use on economic costs; and	<p>This principle asserts that prices should signal to consumers the impact that their usage has on network costs. The Capital Contributions Methodology inherently provides an immediate price signal to extension and upgrade customers regarding the costs faced by MainPower in connecting them to the network.</p>
(iii) Reflecting the differences in network services provided to (or by) consumers; and  (iv) Encouraging efficient network alternatives	<p>In calculating MainPower’s economic contribution the inputs used into the formula explicitly account for variables including those that reflect differences in network services provided to the consumer.</p> <p>The capital contributions calculation, which takes into account actual costs, MainPower’s economic contribution and minimum charge encourages the consumer to seek the most efficient network alternative (location, capacity etc).</p>
(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.	<p>Capital contributions largely deal with recovery of immediate avoidable costs associated with connecting customers and dedicated equipment. This principle is dealt with in the Pricing Methodology with respect to distribution prices.</p>
(c) Prices should be responsive to the requirements and circumstances of consumers by allowing negotiation to:	

<p>(i) reflect economic value of service; and</p>	<p>This principle permits lower prices or other incentives being offered to consumers that are at risk of bypassing the network for an alternative supply. Bypass situations typically arise where distribution prices (including capital contributions) are higher than the stand-alone cost of an acceptable alternative supply. Non-standard distribution pricing is primarily dealt with in the Pricing Methodology.</p>
<p>(ii) enable price/ quality trade-offs.</p>	<p>This principle permits price negotiations in recognition of different levels of service (e.g. n-1 security connection) or non-standard arrangements (greater fixed charge component to reduce risk).</p> <p>The capital contribution process inherently factors in negotiation over upgrade and extension asset specifications which allow for differing levels of service to be priced in. Customised Price-Quality Solutions, where a customer on MainPower’s network requires a different or enhanced quality of supply, will be considered. In these cases, MainPower will assess the subsequent and future benefits to the community of any network enhancement that is required. The impact of this benefit and any associated MainPower contribution will be determined on a case-by-case basis at the absolute discretion of MainPower.</p>
<p>(d) Development of prices should be transparent and have regard to transaction costs, consumer impacts and uptake incentives.</p>	<p>MainPower has transparently set out in this methodology the basis for how it determines capital contributions including minimum charges.</p> <p>MainPower has sought to develop a robust approach to setting capital contributions which minimises transaction costs for connection consumers.</p>

## 20. Document History and Version Control

Version #	Date Approved	Document Owner/Approved By	Brief Description
1.0	22.08.18	Network Manager / General Manager Network	New combined policy, first release.
1.1	05.09.18	Network Manager / General Manager Network	Removed Section 11 – Version Control.
2.0	01.04.23	General Manager Commercial	Document reviewed and renamed from Network extensions, upgrades, and capital contributions policy to Capital Contributions Methodology.