



ES 8

**Capital Contributions and Asset
Relocation Works Guidelines**

December 2008

Amendments included from CIA 1338 Mar 2009



SCOPE

This publication outlines Ausgrid's policy on Capital Contributions and Asset Relocation Works.

WARNING

It is the responsibility of the user of this document to ensure that only the current version is being used.

Ausgrid may amend this document at any time.

DOCUMENT AND AMENDMENT HISTORY

Issue No.	Date	Approved by	Summary of Changes
3	July 2002	M - NAP	General review
4	December 2008	M - CPC	<ol style="list-style-type: none">1. This edition supersedes the following Customer Installation Advices (CIAs):<ul style="list-style-type: none">▪ CIA 1191A (5/8/04)▪ CIA 1294 (28/10/05)▪ CIA 1256 (28/6/02).2. Contestability of Asset Relocation Works, refer to clauses 1.4 and 53. Some specific exclusions to contestability have been identified, refer to clauses 2 & 54. Ausgrid will charge for the supply of dedicated kiosk customer substations, refer to clause 3.6.25. Ausgrid will partially charge for the installation of a High Voltage (HV) interconnector, which it requires, refer to clause 3.86. General review and update

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CONTENTS

1	INTRODUCTION	1
1.1	Explanation of Terms	1
1.2	Capital Contributions	3
1.3	Reimbursement Scheme.....	3
1.4	Asset Relocation Works	3
1.5	Monopoly Services.....	4
2	CONTESTABILITY OF CONNECTION WORKS	5
3	IDENTIFYING THE CONNECTION WORKS.....	6
3.1	General.....	6
3.2	Connections to Developments (including multi-occupant developments)	7
3.2.1	General	7
3.2.2	Developments Connected to an Urban Network	7
3.2.3	Substations	8
3.2.4	Shared Connection Assets	8
3.2.5	Community Title Developments.....	9
3.2.6	Commercial and Industrial Subdivisions.....	10
3.3	Connections to Rural Networks.....	10
3.4	Group Applications (two or more developments).....	11
3.5	Developments Requiring Additional Phase/s of Supply.....	11
3.6	Supply to Developments requiring a Dedicated Customer Substation	12
3.6.1	Dedicated Customer Substation	12
3.6.2	Connection Works Funded by the Customer.....	13
3.6.3	Works Funded by Ausgrid	13
3.7	Connection Works in Excess of those Nominated by Ausgrid.....	14
3.8	HV Inteconnectors.....	15
3.9	Supply from a Customer Substation with Significant Network Load.....	15
3.10	Developments Connected to Substations External to the Premises (Customer Substation not required).....	16
3.11	Increase or Decrease in Rating of an Existing Connection	17
3.12	Temporary Connections.....	17
4	NETWORK AUGMENTATION	18
4.1	Network Augmentation Funded by Ausgrid	18
4.2	Network Augmentation Requiring a Capital Contribution	19
5	ASSET RELOCATION WORKS	20
6	DISPUTE RESOLUTION	21
APPENDIX A	REIMBURSEMENT SCHEMES.....	22
A1.	Application – Rural Customers and Large Load Customers.....	22
A2.	Establishment and Administration of Schemes.....	22
A3.	Contributions by Subsequent New Customers towards Connection Works or Network Augmentations	22
A3.1	General	22
A3.2	Calculation of Cost Share Reimbursement	22
A3.3	The pre-calculated reimbursement.....	23
A3.4	The Pro-rata Reimbursement	23
A3.5	The Original Customer’s Outstanding Amount.....	23
A3.6	Minimum Reimbursement.....	23
A3.7	CPI Adjustments	24
A3.8	Explanation of Terms used in this Appendix	24
A4.	Reimbursements	25
A5.	Obligation to Notify.....	25

1 Introduction

The Capital Contributions Guidelines in this document are based on the NSW Independent Pricing and Regulatory Tribunal (IPART) Determination No. 1 of 2002 – ‘Capital Contributions and Repayments for Connections to Electricity Distribution Networks in New South Wales’ which is referred to as the **Determination** in this document.

1.1 Explanation of Terms

The terms shown in italics throughout this publication have the following meanings:

ASP An Accredited Service Provider, being a person accredited under Part 10 of the Electricity Supply (General) Regulation 2001 (NSW), refer to ES 4.

Capital Contribution The funds paid by the *developer* for *connection works* and *network augmentation* in accordance with the Determination.

Connection Works In relation to a new development, are those works yet to be constructed which will, upon construction:

- (a) enable Ausgrid to provide customer connection services (as defined in the Electricity Supply Act 1995) that are requested by the *developer*, and
- (b) form part of the network on the side of the *linkage point* where all the network assets on that side are dedicated to one or more customers, as well as any *network augmentation* required for this connection on the other side of the *linkage point*.

These include (without limitation):

- (c) in the case of services to new connection points requested by a new *developer*, works to connect the *developer's* premises at that connection point to the existing network;
- (d) in the case of services to existing connection points:
 - (i) replacements of existing assets servicing that connection point where those existing assets, at the time of their replacement, satisfy (a) and (b) above; or
 - (ii) additional new works that satisfy (a) or (b) above in relation to that connection point, in order to provide additional service at that connection point requested by the new *developer*.

(This includes temporary connection work or removal or relocation of existing connection assets such as substations, cables, poles, to enable changes to a customer's connection arrangements.)

Contestable Works Design and construction of:

- a new or altered connection to Ausgrid's network, or
- asset relocation works (refer to clause 5),

which are requested and funded by the *developer or proponent*, who can choose an ASP to carry out the works.

Developer or Customer A person (individual or corporation) who requires and funds customer connection services to the development (e.g. the reticulation of a new underground subdivision), but who may not

	be the final end use customer of that development.
Large Load Customer	A new development or a development of an existing customer's operations, whose expected load (i.e. existing load plus new load as specified in all its load applications for customer connection services at the same or adjacent premises submitted within a period of 2 years of the original application for new load) requires <i>network augmentation</i> and is more than 50% of the nameplate capacity of any existing High Voltage (HV) asset that is to be augmented, as those assets exist immediately before Ausgrid makes its final decision on the <i>developer's</i> application.
Linkage Point	The point on the network where the use of assets changes from being shared with customers generally to assets fully dedicated to a customer or group of customers requiring customer connection services at the time.
Multi-occupant Development	<ul style="list-style-type: none"> (a) a building or proposed building that is under strata title; or (b) a building or proposed building, or set of such buildings, in relation to which distinct parts are occupied, or designed to be occupied, by two or more separate businesses or residences or for other separate purposes; or (c) a subdivision of one or more lots for the purposes of sale or disposal, whether residential, commercial or industrial, and in respect of which the application for customer connection services is made by one <i>developer</i> only
Network Augmentation	Works required to enable a particular application for connection services, on the 'upstream' side of the linkage point which are, or have the potential to be, shared among customers generally.
Rural Customer	A new <i>developer</i> or existing customer whose premises, the subject of its application for customer connection services, are connected or will be connected (once any connection works are constructed) to the network at a point at which the network is a <i>rural network</i> .
Rural Network	That part of a network: <ul style="list-style-type: none"> (a) where the average demand on the HV feeders within it is less than 0.3 MVA/km; or (b) that is in an area zoned as rural under a local environment plan (made under the Environmental Planning and Assessment Act 1979 NSW) or similar zone covering sparse settlements; or (c) that is in an area predominantly used for agricultural purposes.
Urban Network	That part of a network that is not a <i>rural network</i> .

1.2 Capital Contributions

A *developer* wishing to:

- have premises connected to the network for the first time,
- alter an existing connection to the network (e.g. for reasons of increased demand), or
- arrange the reticulation of a subdivision,

is required to fund all or a portion of the costs (the capital contribution) of such work. This is in accordance with Section 25 of the Electricity Supply Act 1995. Connection Works may include connections of a temporary nature or removal or relocation of dedicated connection assets. A *developer* may instead, choose supply from a stand-alone power system and avoid a network connection altogether.

The general rule is that a *developer* will pay the direct costs of the assets dedicated to that development for establishing the connection up to a defined point on the network called the *linkage point*.

Developers (except for some *large load customers*) connected to an *urban network* will in general not be required to fund *network augmentation*. If there is a risk of an inadequate return through Network Use of System Tariffs (on the basis of an assessment carried out by Ausgrid), Ausgrid at its discretion, may require the customer to submit a Guarantee of Revenue in the form of a Bank Guarantee or equivalent security.

Some *developers* (*rural customers* and *large load customers*) may also be required to fund, as a further *capital contribution*, all or a portion of *network augmentation* beyond the *linkage point*, refer to clauses 3.3 and 4.2.

IPART in its Determination sets out the principles by which *capital contributions* are assessed. Details of how these principles are applied by Ausgrid in some typical actual situations are further explained in this publication.

1.3 Reimbursement Scheme

Where *developers* are *rural customers* or classified as a *large load customer* when establishing a connection in either an *urban network* or a *rural network* a reimbursement scheme will be commenced in relation to the customer funded network augmentation. The details of the reimbursement scheme are further explained in Appendix A.

1.4 Asset Relocation Works

These are works on the electricity network undertaken at the request of *developers* or another external party (the proponent) but which are not for the purpose of establishing a new or altered connection to the electricity network. These works are required to be funded in full by the party requesting the works. These works are generally contestable with certain exceptions outlined in clause 5; refer also to clause 5 of ES 5.

Note: there are also other works on the network (which are not *connection works* or *asset relocation works*), which are requested or caused by an external party, are fully funded by this party and are not contestable, such as:

- the installation of temporary overhead Low Voltage (LV) conductor covers
- works to repair network assets damaged by external parties or *emergency recoverable works*, refer to clause 4 of ES 5. Note: Ausgrid will seek to recover its repair costs from the responsible party.

1.5 Monopoly Services

IPART has determined that only Ausgrid can carry out certain services to facilitate contestable *connection works* and *asset relocation works*, to ensure an appropriate level of quality, reliability and safety are achieved in the contestable design and construction of assets that will be connected to and form part of Ausgrid's network. These services include design information, design certification, inspection, providing access permits and substation commissioning. The fees charged for these services are set by IPART and are referred to as monopoly fees (refer to IPART Rule 2000/1 and Ausgrid publication ES 5 for further details). Monopoly services are not *contestable works*.

2 Contestability of Connection Works

In accordance with the Electricity Supply Act 1995, Ausgrid may require *developers* to contribute to the cost of *connection works* (including *network augmentation* in some circumstances). These *developer* funded works are contestable. Note: *developers* or other proponents must also fund all *asset relocation works* which they request, refer to clause 5.

Connection works which are not contestable will be carried out and funded by Ausgrid, although in certain circumstances Ausgrid may require these works (e.g. *network augmentation* works directly associated with 'dedicated' *connection works*) to be carried out by an ASP and a suitable reimbursement will be made, refer to clause 1.5 of ES 5. The Executive General Manager – System Planning & Regulation may determine at any time that certain works or segments thereof will be carried out and funded by Ausgrid and consequently withdrawn from contestability.

The following *connection works* will not be made contestable and will be carried out and funded by Ausgrid:

- design and construction of underground gas and oil subtransmission cables
- design and construction of overhead steel lattice tower subtransmission lines

The *developer* or *proponent* has the right to engage an ASP to carry out contestable *connection works*. The ASP must be suitably accredited under the Accreditation Scheme currently managed by the Office of Fair Trading. Contact details of all ASPs (level 1, 2 and 3) can be obtained from the Office of Fair Trading via their website, www.fairtrading.nsw.gov.au. Payment for the works is made directly to the ASP carrying out the works.

The main conditions applying to *contestable works* are contained in the following Ausgrid's publications:

- ES 9 *Agreement for Connection of Developments*
- ES 9B *Agreement for Small Asset Relocation Projects*
- ES 10 *Requirements for Electricity Connection to Developments*,

further relevant information is also contained in:

- ES 1 *Customer Connection Information*
- ES 4 *Service Provider Authorisation*
- ES 5 *Charges for Network Miscellaneous & Monopoly Services*

The newly constructed assets will be accepted, owned and maintained by Ausgrid, as part of its network, provided all the conditions applying to *contestable works* are met, which includes full compliance of the assets to Ausgrid's Network Standards. Repair or replacement of defective or damaged assets will be charged to the person(s) responsible.

Developers contemplating ownership of certain assets constructed as part of any *connection works* which they fund, should seek advice from Ausgrid before any *contestable work* is undertaken and be fully aware of the associated responsibilities. These include maintenance, insurance and regulatory responsibilities, which apply to a private distributor. The design and location of the connection equipment including the metering equipment may also be significantly affected by such an arrangement.

3 Identifying the Connection Works

3.1 General

Ausgrid will assess and identify the *connection works*, the *network augmentation* and the *developer* funded components for every project, as well as the need for either a Guarantee of Revenue or a reimbursement scheme. This includes identifying the *linkage point*. This assessment is made at the time the electricity connection arrangements for the development are determined.

As previously defined the *linkage point* is the point on the network where the assets change from being dedicated to the use of one or a group of customers to being shared among customers generally. The determination of the *linkage point* in any particular circumstance will be influenced by the locality, the customers load, the appropriate connection voltage and the required number of phases. It is further influenced by whether the connection is to an *urban* or a *rural network*. Advice should in all cases be sought from Ausgrid's local regional planning office, refer to the relevant contact details in ES 1.

When determining the *linkage point*, Ausgrid will consider the potential for the proposed mains extension in a public street to also be used to supply other customers in the future and thereby become shared. This could occur via a direct connection to, or via a further mains extension of, the original mains extension. If at the time the connection arrangements are determined, there is a reasonable expectation that in the foreseeable future (five to seven years) such asset sharing may take place, then the original mains extension will be classed as *network augmentation*.

HV and LV mains extensions on private premises and within *multi-occupant developments* are normally classed as customer funded *connection works*, unless there is a specific need and it is possible to supply other customers external to the development. It will be necessary in these cases for the mains to be extended through the premises in a suitable easement.

Reference should be made to clauses 3.6 to 3.10 when assessing and apportioning substation costs.

The *developer* (the applicant for connection services) can be either:

- an individual household or business premises or a rural premises,
- two premises or a group of premises wishing to share connection costs,
- a person seeking overhead or underground electricity connection to a new subdivision, or
- a person requiring connection to a *multi-occupant* domestic, commercial or industrial premises.

In general the determination of the *linkage point* and the *developer* funded components will vary from project to project and the examples in the following sections are intended as a guide only.

Note1: rural customers or large load customers may be required to reimburse some of the capital contribution paid by other rural customers or large load customers for their connection works and/or network augmentation, if they benefit from these works.

Note 2: new applicants for connection services will be advised if they are required to make a reimbursement under a reimbursement scheme implemented by Ausgrid in accordance with the Determination.

3.2 Connections to Developments (including multi-occupant developments)

3.2.1 General

IPART has determined that for all developments including *multi-occupant developments*, such as residential subdivisions and home unit developments, the *developer* is to be considered as a single customer.

The *developer* is responsible for the cost of the *connection works*, from the development up to the *linkage point* (and beyond for *large load customers*), required to enable a suitable electricity service to be provided for each end use customer within the development. The *connection works* include:

- all HV and LV reticulation including the street lighting,
- one or more customer substations (if required for the development) and
- all associated trenching and civil works.

The connection works may also be located external to the development.

All trenching within the development (unless it only contains shared assets) is to be funded fully by the *developer*.

All *connection works* must comply with Ausgrid's Network Standards. (Refer also to Community Title developments clause 3.2.5.)

3.2.2 Developments Connected to an Urban Network

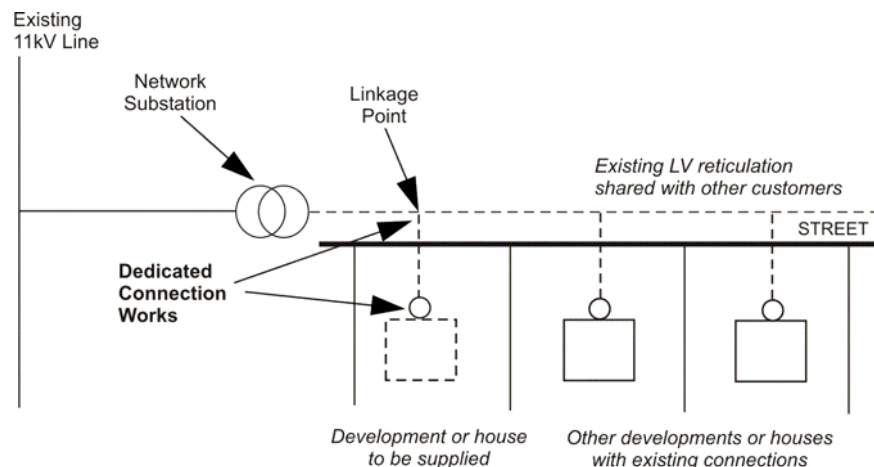


Figure 1

The example above is a development requiring a new connection to an *urban network*, where network distribution mains exist and have sufficient capacity to carry the additional load of the development. The *connection works* would include the connection to the existing distribution mains at the *linkage point*, the service line (overhead or underground), service equipment and the metering installation which are dedicated to the development. Ausgrid currently provides the standard metering and load control equipment (not their installation) for small retail customers on its *Standard Form Customer Connection Contract*.

3.2.3 Substations

If the LV distribution network is not capable of supplying the electrical load of the development, one or more new substations or additional (existing) substation capacity will need to be established on the premises of the development as a condition of supply to that development. In all cases, these substations are classified as 'customer substations' and are designed to be the minimum size or accommodate the minimum number of transformers necessary to supply the ultimate forecast load requirements of the development. (Note: substations in the Sydney CBD are designed for a minimum of three transformers).

The *Developer* is required to fund all or part of the cost of any necessary customer substation(s) and their supplying HV cables. These costs are more fully described in the following clauses. These substations may also be located in the proposed dedicated streets if the development is a subdivision. Substations located on public streets to supply subdivisions are classified as customer substations until the expiration of any warranty period (refer to ES 9 and this document).

Where commercial/industrial subdivisions require substations on individual lots, the costs for these substations will usually be assessed as in clause 3.6.

If supply from a substation in the development, whether on an individual lot or not, is used to supply customers external to the development, then it may be possible to assess substation installation costs according to clause 3.9.

In *multi-occupant developments* Ausgrid will fund the material cost only of standard substation assets that can be efficiently recovered and reused. These costs do not include the building or enclosure costs for the substation. Ausgrid will normally supply the material which it funds.

3.2.4 Shared Connection Assets

If there is a foreseeable need to extend the proposed HV mains (connecting a new customer substation) to connect a future substation external to the development, then Ausgrid will contribute to the cost of those proposed 'likely to be shared' HV mains, refer to figure 2.

Similarly, any LV reticulation which supplies customers external to the development will be funded either by Ausgrid to the extent of any shared portion or by those customers to the extent of the reticulation being dedicated to those customers.

Refer to clause 3.9 for details concerning shared substations.

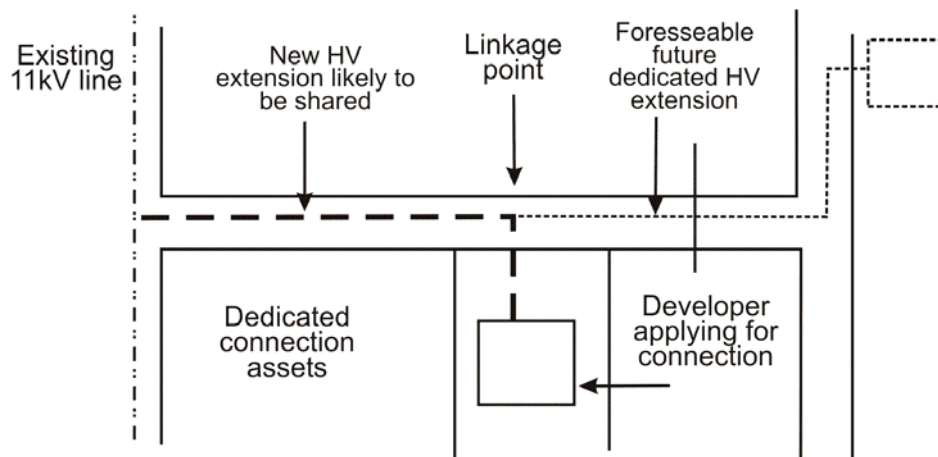


Figure 2: Example showing assets which have the reasonable expectation of being shared in the foreseeable future.

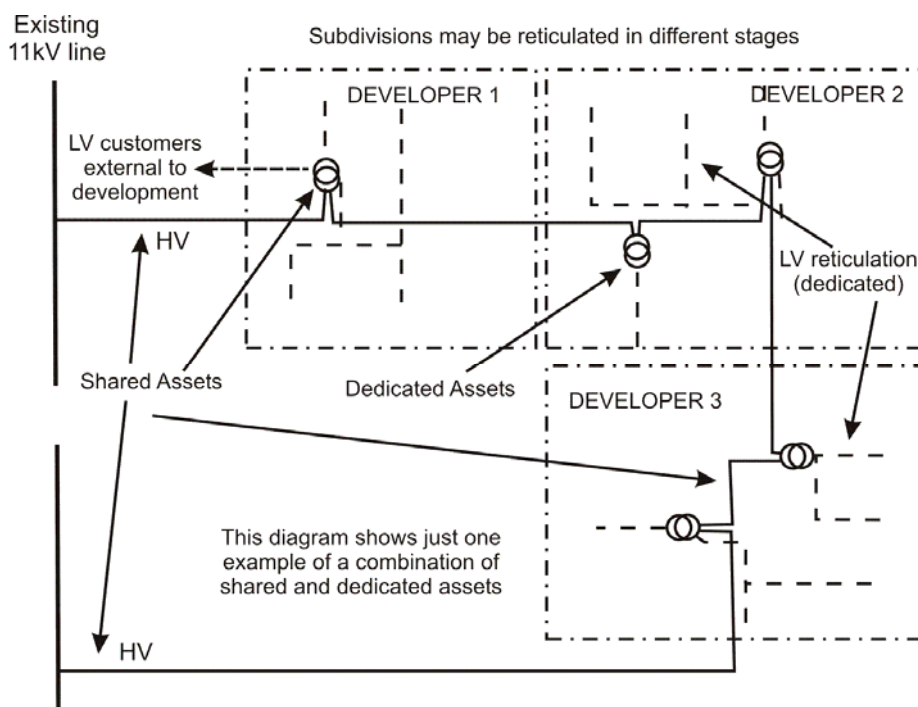


Figure 3: Example of *connection works* which may be shared between subdivisions or other developments (cannot be the same *developer*).

3.2.5 Community Title Developments

The LV and street lighting reticulation within new Community Title developments must be designed, installed, operated and maintained by the customer as a privately owned electrical installation. The design and construction must comply with all of the following:

- AS/NZS 3000 *Wiring Rules*
- *Service and Installation Rules of NSW*
- ES 1 *Customer Connection Information*.

Community Title developments taking supply from Ausgrid's LV network will need to provide a 'point of supply' (which includes the metering for the street lighting), as close as possible to the street boundary (within 1 metre).

Where the load requires a customer substation i.e. a substation on the premises, the HV mains and the substation within the Community Title development, will be provided on the same policy basis as for all other contestable developments, including:

- the securing of Ausgrid's property and access rights by suitable easements and leases, as appropriate, and
- the design and construction of the HV mains and substation and access thereto to be in accordance with Ausgrid's Network Standards.

3.2.6 Commercial and Industrial Subdivisions

To determine the appropriate *connection works* for these developments the *developer* would need to know the final load details for each individual lot within the subdivision.

It is expected that often the final load details may not be known at the time the subdivision is being developed. In these situations Ausgrid will assess with the *developer* the network distribution assets that can be reasonably expected to be required in the subdivision. These could include HV mains in the subdivision's roads or spare conduits for future cables.

The *developer* is responsible for the cost of the *connection works* wherever required within the subdivision as described earlier. After the development is completed, further *connection works* required for individual customers will be funded by those customers according to the same rules.

3.3 Connections to Rural Networks

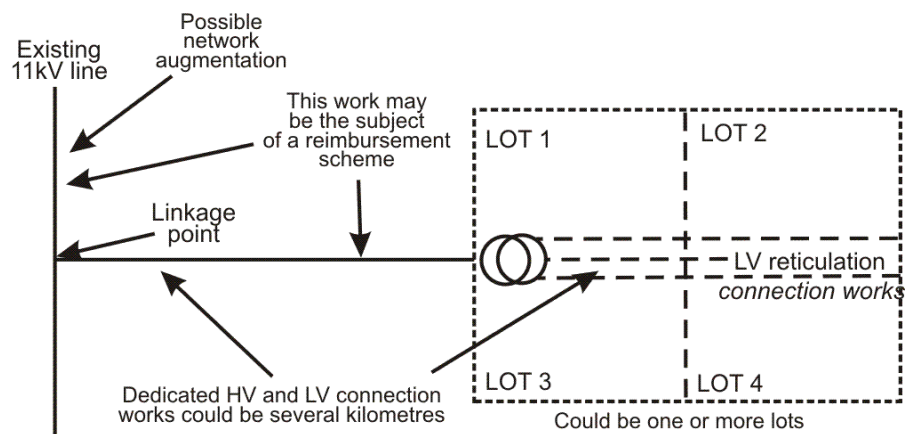


Figure 4

A *developer* applying for a connection to a *rural network* is responsible for all the necessary dedicated *connection works* up to the *linkage point* to enable a suitable supply to be provided to the development and if it is a subdivision, to each lot in the subdivision. In addition, the *developer* may be required to fund all or a portion of any *network augmentation* as required by Ausgrid.

A reimbursement scheme will be implemented with respect to either *connection works* or *network augmentation* funded by the *developer*, if in the future there is a possibility of other developments utilising the resulting assets within 7 years. *Developers*, requiring connections to *rural networks*, should seek advice from Ausgrid regarding the details of a reimbursement scheme, refer Appendix A.

Connection works could include:

- extension of mains from the *Linkage point* which is the nearest point on the network with the appropriate voltage and with the required number of phases that are necessary to satisfy the development load requirements
- one or more customer substations if required (refer to clauses 3.6 and 3.7)
- HV and LV reticulation which may include street lighting and service mains.

3.4 Group Applications (two or more developments)

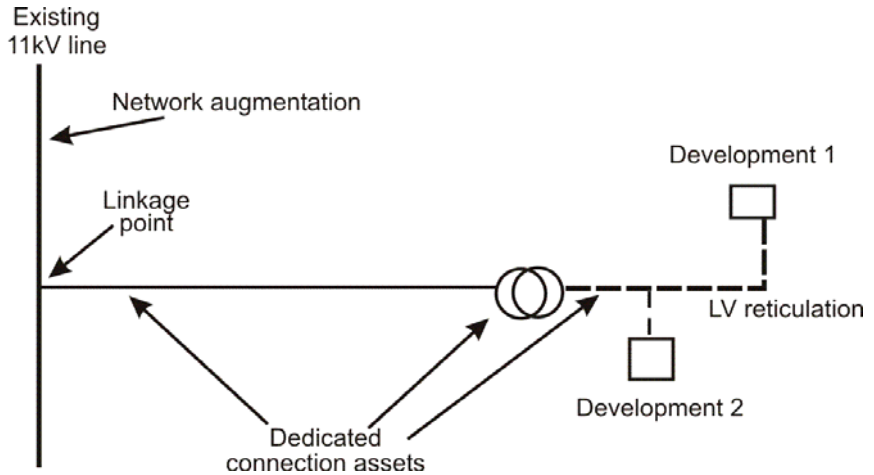


Figure 5

Ausgrid may require two *developers* (or group of *developers*), requiring connection of developments within close proximity of each other at the same time, to share the costs of the *connection works* common to each development. Sharing will be based on the usage of the common asset according to demand.

In addition there is likely to be separate *connection works* particular to each development which would be funded separately by each party.

At Ausgrid's discretion, *rural customers* or *large load customers* may be charged *Network augmentation* costs, in which case an appropriate reimbursement scheme will be established.

3.5 Developments Requiring Additional Phase/s of Supply

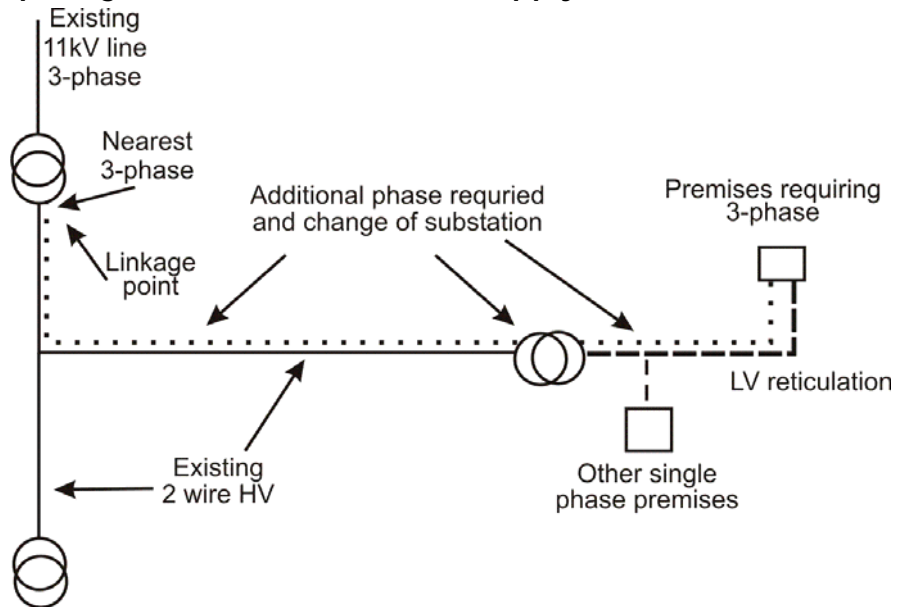


Figure 6

If a development requires a connection with more phases than are available from the network in the vicinity. The *connection works* will include construction of the additional dedicated phases from the *linkage point* on the network where the required phase configuration exists.

For example:

- If the existing LV distribution mains in the public roadway are capable of supplying the required number of phases then the *connection works* would be the additional service mains and meters dedicated to the installation.
- If the existing LV distribution mains are not capable of supplying the required number of phase/s, the *connection works* would be the dedicated extensions required to reach the nearest network with the required number of phases. As shown in the example above this could involve an additional phase of HV mains, a change of the substation transformer (Network or Customer) and additional phases of LV distribution mains.

If there was a likelihood of another *rural customer* or *large load customer* sharing any of the *connection works* within seven years, then a reimbursement scheme would be commenced.

3.6 Supply to Developments requiring a Dedicated Customer Substation

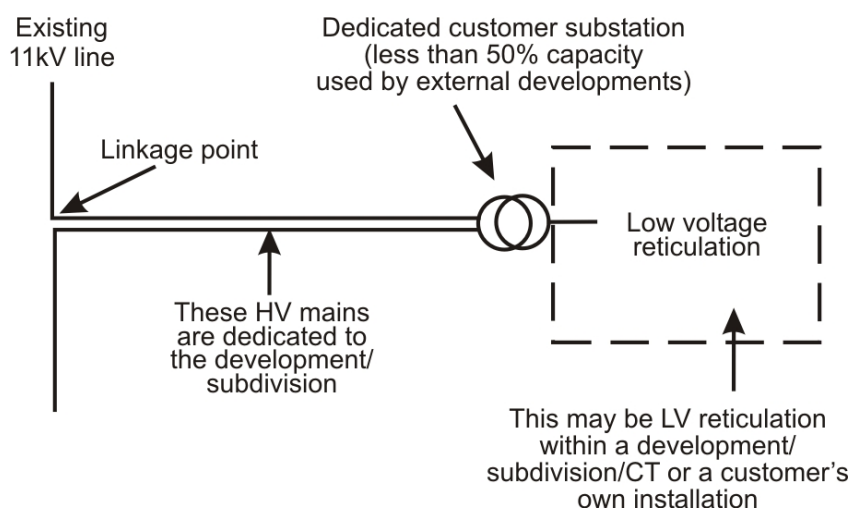


Figure 7

3.6.1 Dedicated Customer Substation

A dedicated customer substation is one where the customer is required to fully fund the cost of labour and materials (except reusable materials) used in equipping the substation. This applies where less than 50% of the substation's final design capacity, is planned to be used to supply other customers, external to the customer's development.

3.6.2 Connection Works Funded by the Customer

The *developer* or individual customers within a development that require a dedicated customer substation are responsible for the cost of the *connection works*, which include all of the following, refer also to Notes 1 & 2 in clause 3.6.3:

- dedicated HV mains from the *linkage point* to the substation
 - Note: Ausgrid's standard HV reticulation is a ring main (or loop-in) system i.e. **two** dedicated HV cables from the *linkage point* to the substation. If an alternative arrangement consisting of a single (radial) HV cable connection and an LV interconnector is agreed to by Ausgrid, this LV interconnector will also be funded by the *developer*.
- substation equipment which cannot be recovered and reused, including:
 - kiosk substations, refer to the Notes below
 - E-type LV switchboards for chamber substations, refer to Appendix H of ES 10
- consumer mains from the substation to the customer's main switchboard or all the LV reticulation within any subdivision
- metering and service equipment
- substation construction and equipping costs and site works for kiosks (including footings, retaining wall and railings etc.). This includes protection wiring in standard substations.

Notes (kiosk procurement):

The customer is liable for the partial cost of dedicated kiosk substations supplied by Ausgrid. This cost is calculated on the basis of the total cost of the kiosk minus the value of the component transformer and HV switchgear, which are free issue equipment. This cost will be advised in the Design Information Package and payment should be made to the Regional Project Coordinator any time after Design Certification (signing of the ES 9 Agreement by the customer). The kiosk can then be issued by Ausgrid's Logistics branch provided the customer's ASP/1 has signed the ES 9 Agreement.

3.6.3 Works Funded by Ausgrid

In *urban networks* Ausgrid will supply and fund the standard dedicated customer substation equipment that can be efficiently recovered and reused, known as the reusable or free issue equipment. The customer/developer however, must fund and provide the substation building or enclosure or kiosk and any site preparation works.

The main components funded by Ausgrid are as follows (but see exception for rural locations below and also in clause 3.7):

- transformer
- HV switchgear
- protection CTs and relays.

Ausgrid will fund the cost of any LV mains used to interconnect with the LV network with the exception described in the first note in clause 3.6.2 or where the LV mains are dedicated to another development and considered as part of the *connection works* to that development.

Note 1: the developer may be required to fund these assets for connections where Ausgrid considers the connection uneconomic

Note 2: generally the *developer* is required to fund all substation assets for customer substations connected to *rural networks*. *Developers* requiring connection in *rural networks* should seek advice from Ausgrid regarding

which substation assets are included in the customer funded *connection works*.

3.7 Connection Works in Excess of those Nominated by Ausgrid

The *developer* must fund any additional costs incurred by Ausgrid when requesting alternative or additional *connection works* to those nominated by Ausgrid (and in certain other circumstances as decreed by Ausgrid from time to time). This includes the additional costs incurred by Ausgrid, for the provision of any alternative or additional reusable equipment.

The developer may make such requests for reasons such as additional reliability or to overcome particular site constraints. Ausgrid will endeavour to accede to such requests wherever feasible and where there is no conflict with broad policy constraints outlined in the Network Standards and elsewhere.

Note: Ausgrid will nominate the *connection works* that:

- adequately meet the customer's assessed electrical demand,
- are the most cost efficient for Ausgrid, and
- comply with Ausgrid's current Network Standards.

Some examples of customer requested alternative or additional *connection works* include:

- a dedicated emergency LV network supply additional to the normal LV supply
- an alternative HV supply from a different zone substation
- a different substation configuration to that nominated by Ausgrid (e.g. kiosk(s) in lieu of a chamber with relay protection or vice versa)
- an additional transformer or HV feeder or feeders in separate trenches
- additional substations or substation capacity above that required to meet the customer's reasonable electrical requirements (as assessed by Ausgrid)
- where site constraints require the use of non-standard equipment
- where a *developer* requires a 1000 kVA transformer to test equipment once a month but a 750 kVA transformer would be adequate to supply their normal loads
- where the *developer* requests multiple substations to reduce their electrical installation costs or for other reasons but a single substation is nominated by Ausgrid e.g. two kiosks instead of one. Or conversely, where the *developer* requests a single substation with costlier equipment (e.g. with circuit breakers and relay protection) but multiple substations are nominated by Ausgrid (e.g. two kiosks with HV fuse switch control).

Note: Ausgrid may specify HV fuse control in its customer substations as the default option, even if this results in multiple kiosk type substations, unless technical requirements require other configurations. This may require additional customer funding as indicated.

- where a 'dry-type' transformer is required for an upper level substation in lieu of a cheaper 'oil-filled' transformer, due to the fire risk of transformer oil.

In all cases, single transformer substations must have LV interconnection where practicable. This will be to the street at Ausgrid's cost or where this is not practical the customer must fund such interconnection between substations on the customer's premises.

3.8 HV Inteconnectors

A HV interconnector is formed when two separate parts of the existing network are connected with feeders installed through one or more substations on a customer's premises.

Ausgrid may contribute to the cost of the interconnector where there is some clear benefit to its general network and/or to other customers.

Where both feeders enter the site at the same point, the customer will be required to fund and install one leg of the interconnector in the street from where the cable enters the site to Ausgrid's existing HV feeder / linkage point, as contestable work. This leg will be the equivalent route of the connection had an interconnector not been formed. The customer will also fund all cables on the premises (except as in the note below), including all cables between multiple customer substations on the premises.

Ausgrid will fund and install the other leg of the interconnector in the street from where the cables enter the site to Ausgrid's other existing HV feeder, as *network augmentation* work. Ausgrid may however, require the customer's ASP/1 to also carry out this non contestable portion of the project in conjunction with the contestable work and be reimbursed accordingly by Ausgrid.

Note: where the two legs of the interconnector leave the substation site in separate trenches, Ausgrid will contribute to one of the legs including the section of that leg within the premises.

3.9 Supply from a Customer Substation with Significant Network Load

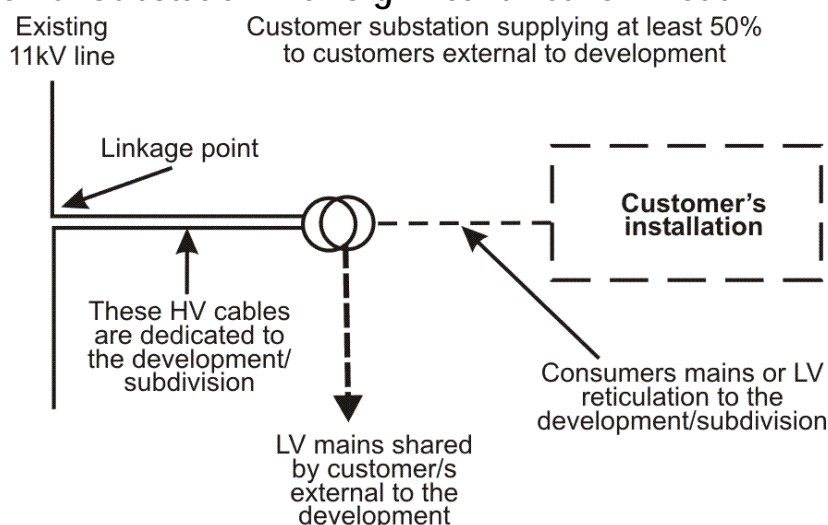


Figure 8

This section applies to a substation installed as a customer substation as in clause 3.6 and designed to the minimum size necessary to supply the customer's/development's ultimate forecast load.

If the substation:

- still has 50% or more of the substation's ultimate electrical capacity available after meeting the ultimate load of the development and
- 50% or more of this ultimate design capacity of the substation will be utilised to supply general network load,

then Ausgrid will fund the labour and material cost of equipping the substation including the cost of any kiosk and its installation on site, and including material which cannot be recovered and reused and all cable terminations within the substation. Ausgrid will normally supply the material which it funds.

Remaining costs (including dedicated HV cables, substation construction and/or site works including kiosk site preparation) will be funded by the *developer* as in clause 3.6.2.

The cost of LV connection assets from the customer substation, required to supply customers external to the development and dedicated to those customers, will be funded by them. The remaining costs will be funded by Ausgrid consistent with clause 3.2.4.

Should the development, providing the customer substation accommodation, subsequently require loads in excess of that originally nominated from the substation and the total development load exceeds 50% of the substation's ultimate capacity, then the *developer* may be liable for the cost of reconnecting some or all of the load external to the premises.

3.10 Developments Connected to Substations External to the Premises (Customer Substation not required)

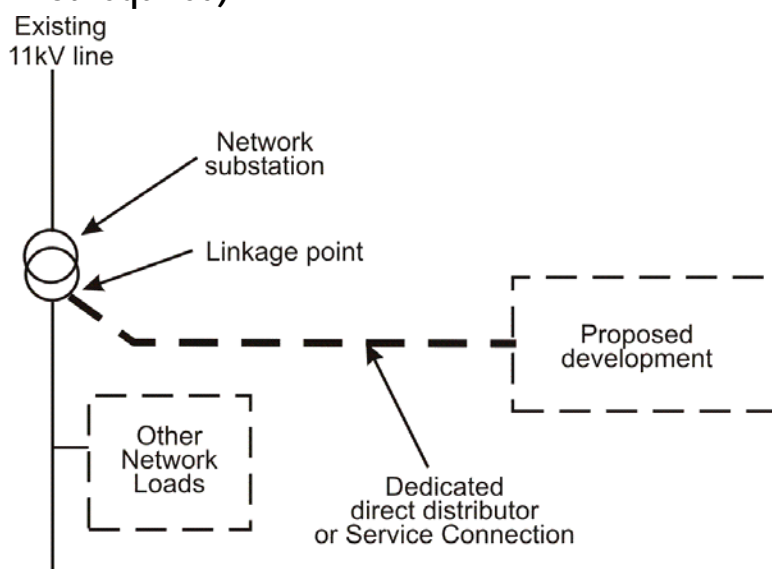


Figure 9

The *connection works* in this example includes the dedicated LV mains from the development to a substation external to the premises (e.g. an existing network substation) and the cable termination work within that substation. Developments connected in this manner generally require loads exceeding 200Amps and are close to a substation with sufficient capacity to meet the new development's load as well as the substation's existing load. The substation could be located on the public road or on an adjacent private property.

The dedicated LV mains from the *linkage point* at the LV terminals of the substation to the development are referred to as a direct distributor if a portion of their length is located in the public roadway. Direct distributors become Ausgrid assets and form part of its distribution network and must comply with the relevant Network Standards. Alternatively, if the LV mains are wholly located on private property adjacent to the substation, then the mains are regarded as consumers mains which are owned and maintained by the customer and installed in accordance with AS/NZS 3000 *Wiring Rules* and the *Service and Installation Rules of NSW*

3.11 Increase or Decrease in Rating of an Existing Connection

In cases where a *developer* requests an existing dedicated connection to be increased or decreased in capacity for proposed electrical load, the conditions outlined in clauses 3.1 to 3.10 apply to the construction of or modification to the network assets.

The *developer* is responsible for the costs of rearrangement of the connection and removal and disposal of any redundant equipment which is not required to be returned to Ausgrid.

Any material assets normally supplied free by Ausgrid which can be recovered and reused shall remain the property of Ausgrid, unless other arrangements are agreed to.

3.12 Temporary Connections

The conditions outlined in clauses 3.1 to 3.10 also apply to a temporary electricity connection. Such a connection may be required for construction or sales promotion purposes or where adequate supply cannot be made available to a development or part of a development by a permanent connection to the network, because of the nature or stage of that development.

The *developer* or end use customer must pay all costs associated with the establishment and removal of the temporary connection assets and the return (in good order) of any equipment provided free of charge by Ausgrid, (to a nominated Ausgrid depot location). A warranty bond may be charged for the security of this equipment (refer ES 9).

4 Network Augmentation

Network Augmentation is the adding to or increasing of the existing shared (or potentially shared) general network assets ('upstream' of the *linkage point*), which have insufficient capacity to satisfy a *developer's* request for new connection services.

4.1 Network Augmentation Funded by Ausgrid

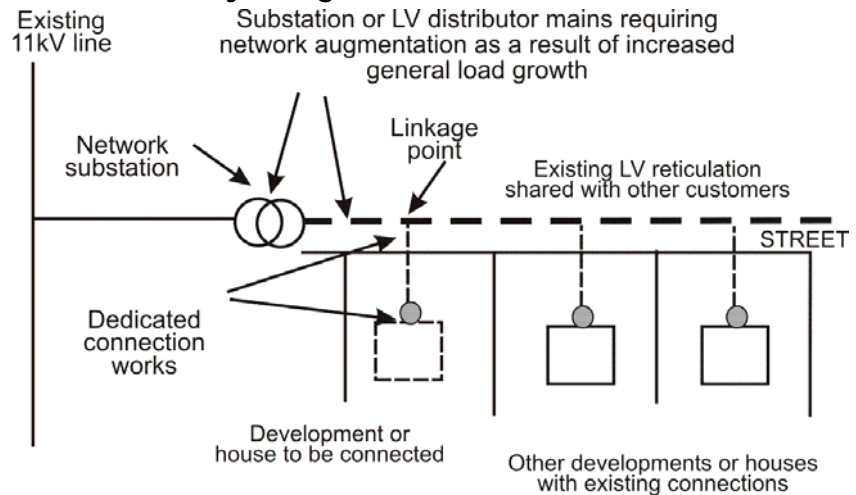


Figure 10

In the example above *network augmentation* would consist of upgrading the network distribution substation and the LV distribution mains, shared with other customers, as a result of a general increase in load on the system. In some cases this could result from one additional house or a new commercial development requiring electricity supply.

Ausgrid will generally fund all *network augmentation*, unless it is required in response to an application from a *rural customer* or *large load customer*.

4.2 Network Augmentation Requiring a Capital Contribution

Large Load Customers (LLCs) may be required to fund *network augmentation*, as outlined below.

All load applications submitted by a customer within a period of 2 years (of an original load application) may be assessed as one load (together with any pre-existing load), for the purposes of determining the customer's LLC status and liability to fund *network augmentation*. These applications would be assessed using the network configuration and network loading at the time of the first application.

In the example below (refer to Figure 11), the new load is required by a LLC and it has been necessary to carry out some *network augmentation* as part of the *connection works* in order to supply the new load. The *network augmentation* consists of the installation of additional HV mains from the *linkage point* to a nearby existing network zone substation. As the development's new load is greater than 50% of the 'nameplate' rating of the existing HV cables, Ausgrid may require the LLC to fund all or part of the cost of the new HV cables and the LLC may pay the cost for this *network augmentation* to a chosen ASP who will carry out the work.

Alternatively, where a LLC to whom Ausgrid applies Cost Reflective Network Pricing (CRNP), engages Ausgrid to carry out the *network augmentation*, which the customer is liable to fund, the LLC may negotiate with Ausgrid to pay for this augmentation as an increased use of system charge spread over a period of time. This option is not open to any other customer.

In both cases, Ausgrid will establish a reimbursement scheme, as required, refer to Appendix A.

The first LLC is assessed on existing network capacity and network loading and makes a contribution to the infrastructure upgrade (*network augmentation*).

For the next 7 years, assessment of subsequent customers as LLCs for the purpose of a reimbursement is based on the same network capacity and network load at the time of the first LLC.

A subsequent LLC(s) makes a contribution to the first LLC via the reimbursement scheme, refer to Appendix A.

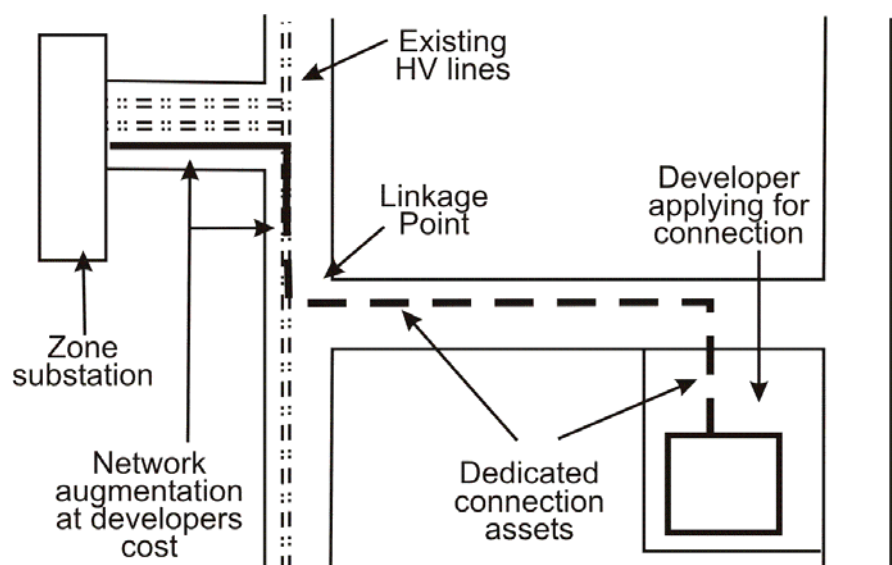


Figure 11: Example of connection work and network augmentation

5 Asset Relocation Works

Asset relocation works are generally contestable, with certain exceptions outlined below. All this work (including the exceptions), must be fully funded by the proponent requesting it, including any associated services that must be provided by Ausgrid to facilitate contestable asset relocation works.

Asset relocation works also includes:

- undergrounding of existing overhead lines, and
- replacing existing bare overhead conductors with Aerial Bundled Cable (ABC) or covered conductor.

The following asset relocation works will not be made contestable:

- all work on underground gas and oil subtransmission cables
- all work on overhead steel lattice tower subtransmission lines
- the design component of small jobs
- all optical fibre ('PINC') cable work.

In addition, the design component of large jobs and any other job or component thereof, may also not be made contestable on a case by case basis at the discretion of the Regional Customer Operations Manager. Ausgrid will charge for any asset relocation works which it carries out that has not been made contestable, on a full cost recovery basis in accordance with the pricing principles and other requirements of IPART's Determination with respect to excluded distribution services.

Where the asset relocation works are contestable, the proponent must engage its own ASP level 3 and level 1, to carry out the design and construction of these works respectively.

If assets of a voltage higher than 11kV are involved in the asset relocation works, please consult with Ausgrid prior to engaging any ASP.

The process for contestable asset relocation works is similar to the process for contestable *connection works*; however, the fees charged for any associated services that Ausgrid needs to carry out to facilitate the contestable asset relocation works will reflect actual costs and may be different to the charges for similar monopoly services associated with contestable *connection works*, refer to clause 1.2 of ES 5.

In special circumstances, Ausgrid may agree to certain asset relocation works being carried out by a suitable service provider (as assessed by Ausgrid), who may not be an ASP. The work process however, will remain essentially the same as for an ASP carrying out the works.

The relocated assets will normally be like-for-like or the current equivalent of the existing assets, as determined by Ausgrid's current Network Standards, unless otherwise agreed. If however, Ausgrid requires the relocated assets to be upgraded, then it will contribute the marginal (difference) cost of such an upgrade.

For all small projects, an ES 9B Agreement will be entered into by the proponent and Ausgrid only. For all other large projects, a special ES 9 Agreement for asset relocation works shall be entered into by the proponent, the ASP/1 responsible for the construction and Ausgrid. This tripartite Agreement shall clearly set out the roles, responsibilities and financial arrangements between the parties.

6 Dispute Resolution

All *developers* will have access to a dispute resolution process, for disputes concerning the level of capital contributions, through the internal review procedures under the regulations applying to small retail customers and other procedures for internal review in Ausgrid's *Standard Form Customer Connection Contract*.

- (1) In the event of a dispute arising between Ausgrid and a *developer or proponent* in relation to a decision of Ausgrid under the Determination in relation to that *developer or proponent*, the *developer or proponent* may apply to Ausgrid for internal review of that decision in accordance with:
 - (a) the procedures set out in clauses 47 to 49 of the *Electricity Supply (General) Regulation 2001*, as if references in those clauses to:
 - (i) 'small retail customer' were references to a customer for the purposes of the Determination; and
 - (ii) 'licence holder' were references to a DNSP for the purposes of the Determination; and
 - (iii) 'a decision of a licence holder for which a review may be sought under section 96 of the Act' were references to a decision of the DNSP under the Determination in relation to that customer; and
 - (iv) 'of the rights available to the customer under the Act and this Regulation' were deleted;
 - and
 - (b) any other procedures for internal review set out in Ausgrid's *Standard Form Customer Connection Contract*, as if similar references in that contract to the matters referred to above were similarly construed.
- (2) Ausgrid will review the decision in accordance with these procedures.
- (3) In the event of an inconsistency between the procedures referred to in clause (1) (a) and (b) above, the procedures referred to in clause (1)(a) will prevail.

Ausgrid will keep records of and report details of disputes including information on the nature of the dispute, method of resolution and outcome.

Appendix A Reimbursement Schemes

A1. Application – Rural Customers and Large Load Customers

Reimbursement schemes as referred to in this document apply only to rural customers and large load customers.

All references in this Appendix to customers are to be taken to be references to **rural customers** or **large load customers** only.

A2. Establishment and Administration of Schemes

A different reimbursement scheme will be established and administered for each original customer's works of the same category. For example, if the original customer's works included a distribution line and a substation, then one reimbursement scheme will be established for the distribution line and a separate reimbursement scheme will be established for the substation.

The costs of establishing and administering the reimbursement schemes will be borne by Ausgrid.

A3. Contributions by Subsequent New Customers towards Connection Works or Network Augmentations

A3.1 General

Where:

- (a) a customer (the **original customer**) procures and funds, or becomes liable to procure and fund *connection works* or *network augmentations* on or after the 1 July 2002; and
- (b) within seven years of the date of the original customer's application for customer connection services with respect to the original customer's works (**reimbursement period**), a new customer then requests customer connection services from Ausgrid; and
- (c) in order to provide those customer connection services to the new customer, Ausgrid will use all or any part of the original customer's works, then the new customer is liable, in addition to paying for any new *connection works* or *network augmentations* for which that customer is liable, to pay Ausgrid a proportion of the costs of the original customer's works, calculated in accordance section A3.2 (**cost share reimbursement**).

A3.2 Calculation of Cost Share Reimbursement

- (a) Where the new customer's load (as specified in its application for customer connection services) is equal to or less than 50 kVA, the cost share reimbursement will be the lesser of:
 - (i) the **pre-calculated reimbursement** (see section A3.3); and
 - (ii) the original customer's outstanding amount (see section A3.5).
- (b) Where the new customer's load (as specified in its application for customer connection services) is greater than 50 kVA, the cost share reimbursement will be the lesser of:
 - (i) the **pro-rata reimbursement** (see A3.4 below); and
 - (ii) the **original customer's outstanding amount** (see section A3.5).

A3.3 The pre-calculated reimbursement

For the purposes of A3.2 (a)(i) above:

- (a) where the original customer's works are distribution line, an amount calculated in accordance with the following formula:

$$\frac{\text{Cost of original customer's works}}{\text{Number of prospective new customers}} \times \frac{\text{Length of original customer's works used by the new customer (km)}}{\text{Total length of original customer's works (km)}} \times \frac{\text{CPI(2)}}{\text{CPI(1)}}$$

- (b) where the original customer's works are works other than distribution line, an amount calculated in accordance with the following formula:

$$\frac{\text{Cost of original customers works}}{\text{Number of prospective new customers}} \times \frac{\text{CPI(2)}}{\text{CPI(1)}}$$

A3.4 The Pro-rata Reimbursement

For the purposes of A3.2 (b)(i), the pro-rata reimbursement is an amount calculated in accordance with the following formula:

$$\frac{\text{Cost of original customer's works}}{\text{New utilisation of original customer's works}} \times \frac{\text{Total utilisation of original customer's works}}{\text{CPI(1)}} \times \frac{\text{CPI(2)}}{\text{CPI(1)}}$$

A3.5 The Original Customer's Outstanding Amount

For the purposes of A3.2(a)(ii) and A3.2(b)(ii), the original customer's outstanding amount is to be calculated as follows:

$$\frac{\text{Cost of original customer's works}}{\text{Number of prospective new customers less original customer}} \times \frac{\text{Number of prospective new customers}}{\text{CPI(1)}} \times \frac{\text{CPI(2)}}{\text{CPI(1)}}$$

Less the total cost share reimbursements paid by new customers to Ausgrid in respect of those works as at date of new customer's application for customer connection services.

A3.6 Minimum Reimbursement

Despite any other provision in A3 of this appendix, a new customer is not liable to pay any cost share reimbursement if the amount calculated in accordance with A3.2, is less than:

$$\$200 \times \frac{\text{CPI(2)}}{\text{CPI(3)}}$$

A3.7 CPI Adjustments

Despite any other provision in A3 of this appendix:

- (i) the formulas in A3.3, A3.4 and A3.5 are deemed not to include any references to CPI in the case where the beginning of the relevant period for the calculation of CPI(2) is less than 12 months after the end of the relevant period for the calculation of CPI(1); and
- (ii) the formula in A6 is deemed not to include any references to CPI in the case where the beginning of the relevant period for the calculation of CPI(2) is less than 12 months after the end of the relevant period for the calculation of CPI(3).

CPI(1) means the average of the consumer price indices (All Groups, All Capital Cities), published by the Australian Bureau of Statistics, for the previous 4 quarters immediately prior to the date that the original customer's works are completed.

CPI(2) means the average of the consumer price indices (All Groups, All Capital Cities), published by the Australian Bureau of Statistics, for the previous 4 quarters immediately prior to date of the new customer's application for customer connection services.

CPI(3) means the average of the consumer price indices (All Groups, All Capital Cities), published by the Australian Bureau of Statistics, for the previous four quarters immediately prior to the date of commencement of this determination.

A3.8 Explanation of Terms used in this Appendix

For the purposes of A3 of this appendix:

Cost of original customer's works means:

- (a) where Ausgrid carried out the original customer's works, the actual cost of those works; and
- (b) where an ASP carried out the original customer's works, the amount that Ausgrid would have charged to carry out those works.

New utilisation of original customer's works means:

- (a) where the original customer's works are distribution line, a figure in kVA per km, representing the new customer's expected load, in kVA (as specified in its application for customer connection services), multiplied by the length of original customer's works used by the new customer, in km; and
- (b) where the original customer's works are works other than distribution line, a figure in kVA, representing the new customer's expected load (as specified in its application for customer connection services).

Number of prospective new customers means the number of new customers (including the original customer) that Ausgrid expects, prior to construction of the original customer's works, will use those works or any part of them during the reimbursement period, determined in consultation with the original customer, and taking into account all relevant factors including (but not limited to);

- the capability of the proposed works,
- the current number of properties that could potentially utilise those works,
- the current zoning of the area and any rezoning proposals,
- any proposed subdivisions or development applications,
- historical patterns of customer connection in similar areas.

Total utilisation of original customer's works means:

- (a) where the original customer's works are distribution line, a figure in kVA per km, representing the total of the loads of each customer (including the original customer and the new customer) who use or will use the original customer's works, in kVA (as specified in their respective applications for customer connection services), multiplied by the length of distribution line constituting the original customer's works, in km; and
- (b) where the original customer's works are works other than distribution line, a figure in kVA, representing the total of the loads of each customer (including the original customer and the new customer) who use or will use the original customer's works (as specified in their respective applications for customer connection services).

A4. Reimbursements

- (1) Where a new customer pays to Ausgrid an amount under A3 of this appendix, Ausgrid will, as soon as practicable after receiving that amount, repay that amount to the then **current owner** of the premises to which the original customer's works were connected.
- (2) Where there are two or more customers constituting the original customer, as a result of Ausgrid requiring those customers to procure and fund works together as group application, the repayment by Ausgrid referred to A4(1) above must be divided between those customers in accordance with the proportions in which they funded the works.

A5. Obligation to Notify

- (1) Ausgrid will notify all new customers who apply to Ausgrid for customer connection services and who may be obliged to make reimbursements under an existing reimbursement scheme, and all ASPs known to Ausgrid who are likely to have customers who will so apply, of the existence of the reimbursement scheme and that connecting customers may be obliged to contribute towards reimbursement.
- (2) Ausgrid will also notify original customers, to which a reimbursement scheme applies, of the existence of the reimbursement scheme and that they may be entitled to receive a reimbursement.