



# CONNECTION POLICY

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## Provision of Network Connection Services

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## 1.0 Introduction

### 1.1 About Endeavour Energy

Endeavour Energy is a New South Wales state-owned energy corporation incorporated under the *Energy Services Corporations Act 1995* and operating an electricity distribution system under the *Electricity Supply Act 1995*, the *National Electricity Law* and the *National Energy Retail Law*.

### 1.2 Connection to our distribution system

If you are a connection applicant<sup>1</sup> seeking to connect premises to our distribution system (or to alter an existing connection) then you may apply for a new connection (or connection alteration) under Chapter 5A of the National Electricity Rules (NER).

Some connection services are provided solely by us under Chapter 5A of the NER while other connection services, called "contestable services", are provided by an Accredited Service Provider (ASP) of your choice under the *Electricity Supply (General) Regulation 1995*.

### 1.3 Purpose and scope of this document

The purpose of this document is to set out the connection charges for the specific connection services provided by us under Chapter 5A of the NER. It is our Connection Policy for the purposes of Part DA of Chapter 6 of the National Electricity Rules (NER). This is addressed in section 2 below.

This document also provides information about how our specific connection services are provided and how they interact with the contestable services provided by an ASP separately engaged by you. The remaining sections of this document deal with this.

## 2.0 Connection Services provided by Endeavour Energy

The specific connection services we provide fall into the following three categories:

- 1) Ancillary Network Services;
- 2) Endeavour Energy Provided Connection Works; and
- 3) Endeavour Energy Provided Chargeable Connection Services.

An explanation of each of these services and the charges that apply in respect of them is set out below.

Under chapter 5A of the NER, we are also entitled to charge for our costs of negotiating a negotiated connection contract and for a site inspection we reasonably need to make. These charges are also described below.

### 2.1 Ancillary Network Services

Ancillary Network Services (previously known as Monopoly Services) are the main services we provide in respect of new connections and connection alterations. They essentially cover our interactions with ASPs to ensure that the connection works undertaken by them meet appropriate design and technical requirements to be connected to and form part of our network.

Some of the Ancillary Network Services we provide in relation to new connections and connection alterations are as follows:

<sup>1</sup> A connection applicant must be a retail customer, a retailer or someone else acting on behalf of a retail customer or a real estate developer - clause 5A.D.3 National Electricity Rules

- Design information
- Design certification
- Design rechecking
- Inspection of service work (level 1 work)
- Inspection of service work (level 2 work)
- Re-inspection of level 1 or level 2 work
- Re-inspection of work of a service provider
- Access permit
- Substation commissioning
- Administration
- Notice of arrangement
- Access
- Authorisation
- Site establishment

Each of these services is more fully described in Appendix 1 attached. A full list and description of Ancillary Network Services we provide can be found in the Network Price List.

### ***Connection Charge Payable and Basis for Charges***

This charge will apply to you if you engage Accredited Service Providers and enter into a connection contract with us.

These charges for Ancillary Network Services have been set by the Australian Energy Regulator under its Transitional Distribution Determination for Endeavour Energy which will apply from 1 July 2014 to 30 June 2015 and are set out in the Network Price List. The list of charges for Ancillary Network Services also includes charges for ancillary services that do not relate to new connections or connection alterations.

## **2.2 Endeavour Energy Provided Connection Works**

Endeavour Energy Provided Connection Works are high voltage connection works to be installed in order to service a multi-occupant development that is connected or to be connected to an urban network where:

- (a) at the time of receipt of an application for customer connection services in respect of the multi-occupant development, there is a reasonable likelihood that those works will be used by other customers outside the development in the foreseeable future; or
- (b) those works are capable of being physically moved and usefully employed in another location (whether or not this is likely to occur).

We do not charge for these works.

## **2.3 Endeavour Energy Provided Chargeable Connection Services**

Endeavour Energy Provided Chargeable Connection Services means certain types of works on Endeavour's own distribution network assets, plant or equipment where these are required to enable connection services to be provided to you and which need to be undertaken by us:

- (a) to ensure we can meet our system security, reliability or health and safety obligations; or
- (b) because those works require specialised services unavailable in the market for contestable services.

## **Charge Payable**

Retail customers will be required to pay a connection charge for these chargeable connection services where:

- (a) they are necessary in order to enable connection services (excluding Basic Connection Services) to be provided to you and they are unavailable from other service providers (for the reasons set out above); and
- (b) annual demand for energy consumed at your premises exceeds or is likely to exceed 25kVA on single wire earth return lines (SWER) or a maximum capacity of 100 Ampere 3 phase low voltage, elsewhere in the distribution network., (unless you are a non-regulated embedded generator or a real estate developer, in which case this threshold level of demand will not apply and you will be required to pay the charge).

## **Basis of Calculating the Charge**

Where the chargeable connection services are necessary in order to provide a standard connection service, we will charge you a reasonable capital contribution towards the cost of the augmentation in accordance with clause 5A.E.1(c)(3).

The basis on which this charge is calculated is as follows:

- Labour cost is calculated by multiplying the estimated number of hours to complete the work by the relevant hourly rate as approved for Ancillary Network Services.
- All other costs, including material and subcontract costs, will be charged at cost.

Such costs will be set out from time to time in our Network Price List.

Where the chargeable connection services are necessary in order to provide a negotiated connection service, we may charge you a reasonable capital contribution towards the cost of augmentation, including the amount we consider necessary to provide efficiently for forecast load growth, in accordance with clause 5A.E.1(c)(4).

The basis on which this charge is calculated is as follows:

- Labour cost is calculated by multiplying the estimated number of hours to complete the work by the relevant hourly rate as approved for Ancillary Network Services
- All other costs, including material and subcontract costs, will be charged at cost.

Such costs will be set out from time to time in our Network Price List.

Where the chargeable connection services are necessary in order to provide connection services for premises comprised in a real estate development, we may charge you a reasonable capital contribution towards the cost of augmentation, including the amount we consider necessary to provide efficiently for forecast load growth, in accordance with clause 5A.E.1(c)(5).

The basis on which this charge is calculated is as follows:

- Labour cost is calculated by multiplying the estimated number of hours to complete the work by the relevant hourly rate as approved for Ancillary Network Services
- All other costs, including material and subcontract costs, will be charged at cost.

Such costs will be set out from time to time in our Network Price List.

Connection Charges are in addition to and have not been separately recovered through distribution use of system charges that are charged separately to your retailer, or a tariff applicable to the connection.



## 2.4 Connection negotiation and site inspection fees under chapter 5A NER

### 2.4.1 Chapter 5A NER Fees

In accordance with chapter 5A of the NER, we may charge two additional fees as outlined below. Refer to clause 5A.D.4 Site Inspection and clause 5A.C.4 Fee to cover cost of negotiation, of chapter 5A.

### 2.4.2 Site Inspection fee

No allowance has been made in the published fee structure for a site visit. If you request a site visit by our staff, additional charges may apply based on the estimated time involved. All time involved in the site visit will be charged at the R3 rate as shown in the table in 4.2.5 of the Network Price List.

### 2.4.3 Negotiation Fee

We will charge a connection applicant for a negotiated connection contract a reasonable fee to cover expenses directly and reasonably incurred by us in assessing your application and making a connection offer. We will recover this fee as a debt (whether or not you accept the connection offer). This fee will be calculated by multiplying the number of hours spent in making the assessment and connection offer and preparing estimates associated with negotiation costs by the R3 rate.

## 3.0 Contestable Connection Works provided by ASPs

The *Electricity Supply Act 1995* specifies requirements relating to the provision of customer connection services and allows customers to choose suppliers for providing those services - these are contestable works (please refer to the NSW Trade and Investment Code of Practice – Contestable Works).

Under Section 31 of the *Electricity Supply Act 1995 (NSW)* all customer connection works are fully contestable, with the exception of those specific items for which the AER has approved ancillary network charges (please refer to section 2.1 above). All contestable works must be carried out by an Accredited Service Provider (ASP), accredited under Part 10 of the *Electricity Supply (General) Regulation* and appropriately authorised by us when working on or near the existing network.

The work is subject to our design, construction and installation standards and can only be performed by an ASP chosen by you. You and your ASP must comply at all times with the Service and Installation Rules of NSW.

The ASP scheme is administered by NSW Trade and Investment. The scheme allows ASPs to carry out design, service, distribution, and transmission works. The ASP scheme accredits the company, and it is then the company's responsibility for employing/sub-contracting suitably qualified, experienced and authorised (where required) personnel.

The three levels of ASP are:

- Level 1 - Network Constructor
- Level 2 - Service Mains Constructor and Metering Installer
- Level 3 – Designer

You must choose and engage the ASP(s) required and ensure that they carry out the connection works. You are liable to the ASP(s) directly for their charges in carrying out those connection works.

The ASP's quotations may or may not include some or all of the required fees and charges. It is your responsibility to be aware of all the likely costs that are associated with the work.

We list below some costs that may be associated with contestable activities and are payable to the ASP engaged by you:

- Environmental Impact Assessment preparation charge
- Design quotation
- Re-design quotation
- Construction quotation
- Connection quotation (to connect a customer to the distribution network)
- Project definition cost
- Work outside the normal working hours (6:00am to 6:00pm)
- Switching fees
- Hiring and connection of generators

## 4.0 Payment Terms for our Connection Charges

Connection Charges payable to us in respect of Connection Services we provide must be paid to your ASP/2 who will pay those amounts to us on your behalf.

All cheques and guarantees must be made out to Endeavour Energy.

All fees and charges are to be paid in advance of the relevant activity.

Subject to regulatory approval, we may amend the fees and charges set out in the Network Price List from time to time by publishing the changes on the Endeavour Energy web site.

You should be aware of the cost implications associated with any proposed connection to the Endeavour Energy network. You should not commit to expenditure for a proposal that may prove to be impractical and not affordable.

For large or complex developments, you are urged to lodge a technical review request with us to determine availability of supply and preferred linkage points and to provide preliminary information to assist you in determining the feasibility of your proposals.

For obtaining electricity supply to a property in a rural location, we provide a free “order of costs estimating” service. The contacts for the Regional Services Manager and their telephone numbers are:

### Northern region – (02) 9853 7639

For properties in Baulkham Hills, Blacktown, Blue Mountains, Hawkesbury, Holroyd, Hornsby, Lithgow, Parramatta, Penrith and Rylstone local government areas.

### Central region – (02) 9853 5628

For properties in Camden, Campbelltown, Fairfield, Liverpool, Wingecarribee and Wollondilly local government areas.

### Southern region – (02) 4255 4022

For properties in Kiama, Shellharbour, Shoalhaven and Wollongong local government areas.

## 4.1 Reimbursement for work carried out on behalf of Endeavour Energy

You are responsible for all costs associated with the connection of electricity supply to a development.

Where you have carried out work on our behalf, you will be reimbursed in accordance with the reimbursement rates set at the time of design certification.

The HV and the duct reimbursement rates are listed in Fact Sheet 11 on our website [www.endeavourenergy.com.au](http://www.endeavourenergy.com.au). Reimbursement for works not listed in the schedule will be negotiated.

Payment will be made to you or your nominee after:



- satisfactory completion of the works;
- payment of all fees and charges;
- for subdivisions, receipt of all the relevant documentations for the issue of a notification of arrangement; and
- receipt of a tax invoice claiming the reimbursement.

Written permission noted on the letter of intent is required from you to reimburse other parties.

## 4.2 Alterations to existing electricity networks

If you modify the development in a way that impacts the outcomes proposed by the certified electricity network construction drawings, we will not be liable for payment of reimbursements related to all of the works in question. We reserve the right to recover additional costs incurred as a result of modifications to a development, including all costs associated with the re-certification of the electricity network construction drawings.

## 4.3 Forms of guarantee and security bonds

We may require one or more forms of security as set out below. GST is applicable as a cost if the bond is used by us.

We prefer that such security be provided by the owner of the property, however, we may allow it to be provided by the applicant or an ASP acting on behalf of the applicant, but it must be in a form approved by us and may be:

### Cheque

A bank cheque made payable to Endeavour Energy as security and to be held for the duration of the maintenance warranty period as detailed in the conditions.

### Unconditional bank guarantee

An unconditional bank guarantee in favour of Endeavour Energy allowing access to funds where costs are incurred by us to maintain and repair assets installed by an ASP which are still under warranty. The ASP may choose to have an ongoing (rolling with nil expiry) bank guarantee in favour of Endeavour Energy rather than have a warranty created for each project.

### Insurance policy

An insurance policy in the name of the applicant, which clearly spells out the following insurance cover:

- Public Liability (in respect to professional and / or civil liability \$20M minimum)
- Professional indemnity liability \$20M minimum
- Contract works annual policy covering material loss or damage with defect liability period 12 months and sum insured based on the total value of the work
- Endeavour Energy as an interested party must be noted on the policy.

The insurance policy in relation to the maintenance cover with the following statement provided under the policy is acceptable to Endeavour Energy:

“The Company will indemnify the persons insured against unforeseen loss of or damage to the contract works provided such loss or damage:

- (a) is not hereafter excluded;
- (b) manifests itself during the maintenance period; and
- (c) originates from:

- a cause arising during the construction period and at the contract site; or
- an act or omission of any of the persons insured during the course of operations carried out by such persons insured on the contract site in complying with the requirements of the defects liability or maintenance provisions of the contract.

An unconditional performance bond from an insurance company with a value of at least \$5m is acceptable to us.

#### 4.3.1 Warranty maintenance bond

A bond retained for 12 months is required to cover the cost of corrective action required due to poor workmanship or failure of an element during the first 12 months of the 36 month warranty period from the date the asset is transferred to us.

We may draw on the bond to rectify the work or product failure. The bond can be in the form of a cheque, bank guarantee or an insurance policy as stated above, that we can claim against without restrictions.

Accredited Service Providers commonly arrange for a rolling bond to the value of their total works over a three year period to enable them to satisfy their clients' bond requirements without the need to arrange separate bonds relating to each job.

Without limiting your warranty of 36 months, you must provide us with a warranty maintenance bond equal to the value listed below, based on the total cost of the electrical works (including any shared asset works funded by us and constructed by an ASP).

The warranty maintenance bond will be retained by us for a period of 12 months from the date of satisfactory completion of the works.

**Table 1: Value of Maintenance Bond**

Total cost of the electrical works including any shared asset works funded by Endeavour Energy	Value of the warranty maintenance bond
The first one million dollars (\$1M)	10%
The next two million dollars (between \$1M and \$3M)	5%
The remainder (above \$3M)	2.5%

We may apply the warranty maintenance bond to cover the cost of rectifying any faults not rectified by you.

#### 4.3.2 Property tenure bond

The purpose of a property tenure bond is to allow construction, inspection, and commissioning of a network asset prior to securing a satisfactory form of property tenure for that asset.

We will require you to lodge a property tenure bond when applying for certification of the electricity network construction drawings if:

- the electricity network construction drawing identifies proposed property tenure in favour of Endeavour Energy, and
- an easement will not be created by a plan and instrument for which a notification of arrangement or compliance certificate will be issued under a local council development application, and
- you are responsible for creating the easement.

#### 4.3.2.1 Property tenure bond amounts

Standard property tenure bond amounts per easement for each affected property are set out in Endeavour Energy Network Price List.

These standard amounts do not apply to the following situations, for which the property tenure bond will be set after review on a case-by-case basis:

- Council land
- Crown land
- Sydney Water land
- National Parks & Wildlife Service land
- Forestry land
- Power lines greater than 500 metres in length
- Power lines in rough or remote terrain

No interest will be paid on the bond amount held by us.

#### 4.3.2.2 Refund of property tenure bond

The property tenure bond will be released when you provide proof that a satisfactory form of property tenure has been registered at Land and Property Information NSW, or that any other agreed form of property tenure has been secured.

#### 4.3.2.3 Forfeit of Property Tenure Bond

We expect developers to honour commitments by progressing the registration of easements in a timely manner and finalising registration no later than six (6) months after the associated network assets have been installed.

We will assist developers and will make reasonable enquiries and reminders in order to facilitate this outcome. However in cases where the establishment of easements has not been concluded and satisfactory progress is not assured despite our reasonable efforts to facilitate such outcome, we may, in our sole discretion advise the party that provided the bond, that the bond has been forfeited. We will then, in our sole discretion, determine any further course of action that we may pursue including retention of funds or progressing the acquisition of easements through other means.

## 5.0 Pioneer Cost Share Reimbursement Scheme

Cost share reimbursement schemes (Schemes) as described in this Section apply only to rural customers and large load customers. Other cost share reimbursement schemes will be considered on a merit basis at our discretion.

All references in this Section to customers are to be taken to be references to rural customers or large load customers only. Multi occupant developments such as subdivisions are not entitled to participate in the Cost Share Reimbursement Scheme.

Endeavour Energy has developed a brochure and letters to be used by a customer to advise their intent to be involved in a Reimbursement Scheme which is available upon request.

Each scheme applies for seven years from the date the original customer makes an application for connection works.

To achieve this requirement Endeavour Energy expects that customers will have indicated their involvement with the Reimbursement Scheme by the time certification of the design has been completed. If the reimbursement scheme documentation has not been agreed to by the customer up to the time of design certification, then Endeavour Energy will take the lack of response to indicate that no reimbursement scheme is required.

Endeavour Energy will forward the reimbursement to the current owner of the premises after collecting the contribution from the customer who will be connecting to the Reimbursement Scheme network.

### **5.1 Establishment and administration of schemes**

Endeavour Energy has established and administers the Scheme in accordance with this Section in relation to each original customer's works as defined below.

Original customer's works refers to the value of network assets procured or funded by an original customer, either as new works or augmentation works and where the application for network connection services, in which the liability for the original customer's costs was established, was received after 1 July 2002.

The Schemes will recognise different categories of assets for the purpose of calculating reimbursements from future customers utilising those assets. For example, if the original customer's works included a distribution line and a substation then the costs and details of the distribution line and substation will be recorded separately.

Endeavour Energy will bear the costs of establishing and administering the Schemes.

### **5.2 Contributions by further new customers towards connection works or network augmentations**

Where, within seven years of the date of the original customer's application for customer connection services with respect to the original customer's works, a new customer requests customer connection services from Endeavour Energy, and in order to provide those network connection services to the new customer, Endeavour Energy will use all or any part of the original customer's works, the Reimbursement Scheme will apply.

In addition to paying for any connection works or network augmentations for which the customer is liable to pay Endeavour Energy, the new customer would be liable also to pay a proportion of the costs of the original customer's works, calculated in accordance with the cost share reimbursement calculations. The amount collected will be forwarded to the current land owner to which the original customer's works were being utilised.

**Note:** If the original customer qualified as a large load customer, they will only receive reimbursements from other large load customers. The large load calculation for the subsequent or new customer will be carried out with respect to the rating of the original asset that was augmented by the original customer.

### **5.3 Cost share reimbursement calculations**

The cost share reimbursement shall be calculated as follows:

Where the new customer's load (as specified in its application for customer connection services or assessed load) is equal to or less than 50 kVA, the cost share reimbursement will be the lesser of the pre-calculated reimbursement and the original customer's outstanding amount.

Where the new customer's load (as specified in its application for customer connection services or assessed load) is greater than 50 kVA, the cost share reimbursement will be the lesser of the pro-rata reimbursement and the original customer's outstanding amount.

#### **The pre-calculated reimbursement is calculated:**

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

**Cost of original customer's works**


---

**Number of prospective new customers**

X

**Length of original customer's works used by the new customer (km)**


---

**Total length of original customer's works (km)**

X

**CPI(2)**


---

**CPI(1)**

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

**Cost of original customer's works**


---

**Number of prospective new customers**

X

**Length of original customer's works used by the new customer (km)**


---

**Total length of original customer's works (km)**

X

**CPI(2)**


---

**CPI(1)**
**Cost of original customer's works is:**

The value of the works calculated from the Endeavour Energy's asset valuation supplied as part of the certification package where an ASP carried out the original customer's works.

**Number of prospective new customers is:**

The effective number of new customers, including the original customer, that may use the works or any part of them during the reimbursement period.

This is determined in consultation with the original customer prior to construction of the proposed original customer's works, 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 re-zoning proposals, any proposed subdivisions or development applications, and historical patterns of customer connection in similar areas.

**5.4 The pro-rata reimbursement**

The pro-rata reimbursement is an amount calculated in accordance with the following formula:

Cost of original customer's works

X

New utilisation of original customer's works

---

Total utilisation of original customer's works

X

CPI(2)

---

CPI(1)



**New utilisation of original customer's amount is:**

- (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).

**Total utilisation of original customer's works is:**

- (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).

**5.5 The original customer's outstanding amount**

The original customer's outstanding amount is to be calculated as follows:

**Cost of original customer's works**

X

**Number of prospective new customers less original customer**


---

Number of prospective new customers

X

CPI(2)

---

CPI(1)

LESS

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

**5.6 Minimum reimbursement**

Despite any other cost share reimbursement calculations a new customer is not liable to pay any cost share reimbursement if the amount is less than:

**\$200 x CPI(2)**

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CPI(3)

## 5.7 CPI adjustment

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 4 quarters immediately prior to the date of commencement of this determination.

Despite any other cost share reimbursement calculations:

- a) The pre-calculated reimbursement, the pro-rata reimbursement and the original customer's outstanding amount 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);
- b) The Minimum reimbursement 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); and
- c) in the event that all the relevant information to calculate CPI(2) has not been published by the Australian Bureau of Statistics at the time of a new customer's application for customer connection services then the most recent available rates will be used, (i.e. the rates applicable to the previous quarter).

## 5.8 Reimbursement payments

Where a new customer pays to Endeavour Energy an amount towards the Cost Share Reimbursement, Endeavour Energy 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.

Where there are two or more customers constituting the original customer, as a result of Endeavour Energy requiring those customers to procure and fund works together, the repayment by Endeavour Energy pursuant to reimbursement payments must be divided between those customers in accordance with the proportions in which they funded the works.

## 5.9 Obligation to notify

Endeavour Energy will notify all new customers who apply to Endeavour Energy for customer connection services and who may be obliged to make reimbursements under an existing reimbursement scheme, and all ASPs known to Endeavour Energy 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.

Endeavour Energy will also notify original customers to which reimbursement applies of the existence of the Reimbursement Scheme and that they may be entitled to receive a reimbursement.

## 5.10 Rural subdivisions and multi-occupant developments

If a proposed subdivision is undertaken in a Reimbursement Scheme location, the applicant will be required to make payment to comply with the Reimbursement Scheme for connection to the network in the same manner that applies for connection of loads.

Subdivision applicants (including strata title subdivisions) will not be eligible to receive reimbursements as original customers.

The load associated with such applications, for the purposes of cost share reimbursement calculations and the pro-rata reimbursement will be determined by Endeavour Energy.

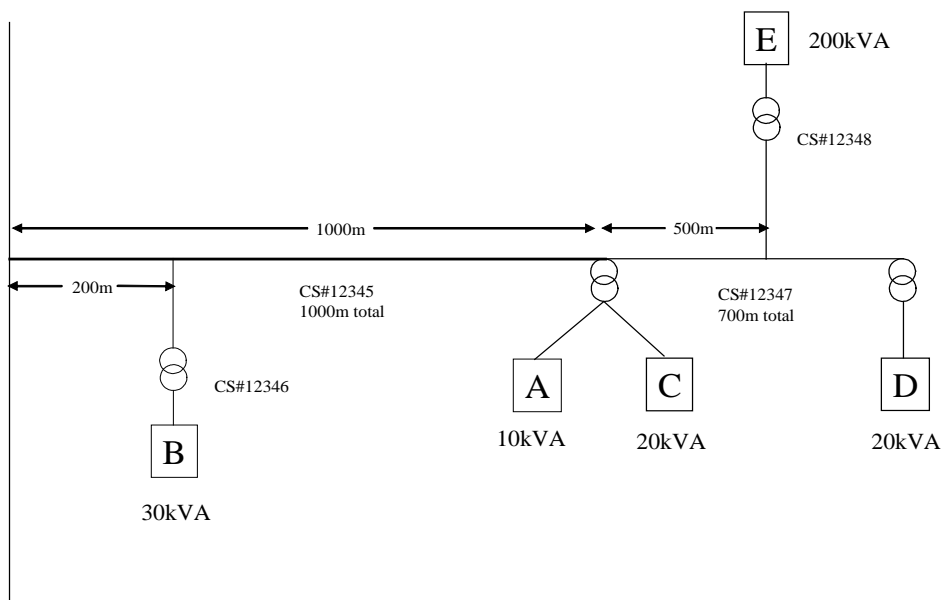
Reimbursements paid by multi-occupant applicants will be regarded as payments on behalf of the declared occupants of the development and no further reimbursements will be required from those occupants when they apply for connection of load.

Further applications for provision of an electricity network or connection of load for premises that benefit from but were not declared in a previous Application for Provision of an Electricity Network may be eligible to pay reimbursements to an original customer.

### 5.11 Worked example of reimbursement calculations

The following worked example may be used as guidance in interpreting the requirements of this Section. The following calculations do not include CPI adjustments.

Suppose customers A to E apply for customer connection services after 1 July 2002, in alphabetical order within a seven (7) year period, as shown in the following sketch:



Note: All loads as specified in customer's application for customer connection services

Customer A funds a 1km, \$10,000 11kV line extension and a \$5,700 transformer to establish supply to his property.

It is determined at the time of construction that the number of prospective beneficiaries of the 11kV line is 5 and of the substation is 2. The pre-calculated reimbursements for all new connections less than 50kVA are therefore set as:

High Voltage (HV) Line beneficiaries  $\Rightarrow$   $\$10,000 / 5 = \$2,000$  per customer; and

Substation beneficiaries  $\Rightarrow$   $\$5,700 / 2 = \$2,850$  per customer.

Customer A's outstanding amount (CS# 12345) is now:

$\$15,700 - \$2,000 - \$2,850 = \$10,850$ .

Customer B connects to the high voltage (HV) line utilising 200m of the 1000m total length. In addition to any costs of new dedicated works Customer B is liable for a reimbursement of:  $200/1000 \times \$2,000 = \$400$ , payable to Customer A (or the subsequent owner of Customer A's premises).

Customer A's outstanding amount (CS# 12345) is now:  $\$10,850 - \$400 = \$10,450$ .

A cost sharing reimbursement scheme would need to be set up for Customer B (CS# 12346) covering the new transformer.

Customer C connects as a low voltage (LV) customer utilising both the high voltage (HV) line and the substation funded by Customer A. The reimbursement is  $\$2,000 + \$2,850 = \$4,850$ , payable to Customer A (or the subsequent owner of Customer A's premises).

Customer A's outstanding amount (CS# 12345) is now:  $\$10,450 - \$4,850 = \$5,600$ .

No additional cost sharing reimbursement schemes are required because Customer C has not contributed to any new network assets.

Customer D funds a further 11kV line extension of 700m, at a cost of \$8,850 and a \$7,200 transformer to establish supply to his premises. Customer D agrees at the time of construction that the number of prospective beneficiaries of the 11kV line is 10 and of the substation is 2. The pre-calculated reimbursements for new connections less than 50kVA are therefore set as:

High Voltage (HV) Line beneficiaries  $\Rightarrow \$8,850 / 10 = \$885$  per Customer; and

Substation beneficiaries  $\Rightarrow \$7,200 / 2 = \$3,600$  per Customer.

Customer D's outstanding amount (CS# 12347) is now:  
 $\$16,050 - \$885 - \$3,600 = \$11,565$

Customer D is also a beneficiary of the line extension the subject of Cost Share Reimbursement Scheme CS # 12345 and is therefore liable for a reimbursement of \$2,000 payable to Customer A (or the subsequent owner of Customer A's premises).

Customer A's outstanding amount (CS# 12345) is now:  
 $\$5,600 - \$2,000 = \$3,600$ .

Customer E is liable to a pro-rata reimbursement based on respective loads because his load is greater than 50kVA. Customer E is also a beneficiary of works the subject of two cost sharing schemes, CS# 12347 and CS# 12345, and is therefore liable to make reimbursements for these as follows.

Calculation of reimbursement to Customer A (or the subsequent owner of Customer A's premises):

Total cost of shared works = \$10,000

Utilisation of shared works is:

by Customer A	-	10 x 1.0	= 10 kVA.km
by Customer B	-	30 x 0.2	= 6 kVA.km
by Customer C	-	20 x 1.0	= 20 kVA.km
by Customer D	-	20 x 1.0	= 20 kVA.km
by Customer E	-	200 x 1.0	= 200 kVA.km
Total			= 256 kVA.km

Therefore the responsibility of Customer E is  $200 / 256 \times \$10,000 = \$7,813$

Since this amount is greater than Customer A's outstanding amount Customer E is only required to reimburse \$3,600 to Customer A (or the subsequent owner of Customer A's premises).

Customer A is no longer entitled to any further reimbursements.

Calculation of reimbursement to Customer D (or the subsequent owner of Customer D's premises):

Total cost of shared works =  $0.5/0.7 \times 8,850 = \$6,321$

Utilisation of shared works is:

by Customer D	-	20 x 0.5	= 10 kVA.km
by Customer E	-	200 x 0.5	= 100 kVA.km
Total			= 110 kVA.km

Therefore the responsibility of Customer E is

$100 / 110 \times \$6,321 = \$5,746$

Since this amount is less than Customer D's outstanding amount Customer E is liable to reimburse the full amount of \$5,746 to Customer D.

Customer D's outstanding amount (CS# 12347) is now:

$\$11,565 - \$5,746 = \$5,819$ .

The total cost-share reimbursements paid by Customer E were:

$\$3,600 + \$5,746 = \$9,346$ .

## 6.0 Contracting with us for our Connection Services

A connection of load application is required for all new load, and increases in load requiring an upgrade or augmentation to service lines, consumer's mains, switchboard, metering or the upgrade to the number of phases supplying an installation.

Generally if you wish to connect a typical low voltage load under 100A single phase or under 63A three phase in an existing urban area, you will be provided a connection offer under a Low Voltage Basic Connection Service regardless of whether we are required to carry out extensions or augmentation works to the network in order to facilitate the connection.

There are also many other types of low voltage connections such as loads in non-urban (rural, village etc.) or loads above 100A single phase or 63A three phase that may also be offered a Low Voltage Basic Connection Service if it is assessed that the connection can be supported by the network without the need to extend or augment the network.

Any augmentation or extension to the network required to allow a connection that has been provided with a basic connection offer will be undertaken and funded by us.

In cases where the non-urban or larger low voltage loads are assessed as needing augmentation or extension works to the network, you will be issued a connection offer for a Standard Connection Service.

When considering applications, we will determine which areas are urban and rural based on the criteria as specified within the definition of rural and urban below and the local government planning instruments.

It is intended that if land is zoned urban, non-urban or rural then we will apply the relevant policy accordingly. If, however, the land zoning is of a different nature without reference to urban or non-urban or rural (e.g. Residential 1A, 1B etc. or residential bushland conservation), we will determine whether an urban or non-urban classification is appropriate. As a guide, lots of greater than 4,000m<sup>2</sup> should be considered to be non-urban, unless they are specifically within a commercial or industrial development.

Rural (Non-urban) is that part of a network:

- where the average demand on the high voltage (HV) feeders is less than 0.3 MVA / km; or
- that is in an area zoned as rural under a local environmental plan [made under the Environmental Planning and Assessment Act 1979 (NSW)]; or
- that is in an area that is predominantly used for agricultural purposes.

Non-urban is treated as rural.

Urban network means that part of a network that is not a rural network.

We administer a network asset Cost Share Reimbursement Scheme that affects rural and large load customers that are connecting to portions of the network that have been extended or upgraded by other customers who have in the preceding seven (7) years funded that development work.

Due to additional safety and operational constraints that are associated with high voltage installations and temporary builders supplies, these connection services are offered as standard connection services only.

The terms and conditions applicable to a connection to our network are set out in our suite of Model Standing Offers for specific connection services:

### **6.1 Low Voltage Basic Connection Service**

Urban loads less than 100A single phase, 63A three phase; and all other LV loads having been assessed by us as not requiring augmentation or extension of the network in order to connect.

An offer for a Low Voltage Connection Service will generally assume that the network is capable of direct connection of a low voltage service by a Level 2 Accredited Service Provider.

### **6.2 Standard Connection Service**

Permanent Low Voltage connections not defined as a Low Voltage Basic Connection Service. This includes all connections in non-urban areas and other low voltage loads that cannot be connected to the existing network unless network extension or augmentation work is undertaken.

### **6.3 Temporary Builders Supply**

Temporary supply arrangements made to allow the connection and supply of electricity for the purpose of development of a site. Temporary builder's supplies are not an approved supply arrangement for continued supply of a site.

If you require a temporary electricity supply, where adequate electricity supply cannot be made available to a development (or part of a development) by permanent connection to the existing network, you will pay all costs associated with the establishment of the electricity supply. In addition an appropriate bond will be required by us to ensure the eventual removal of all temporary connection assets as required.

Your responsibility will include the creation of easements or the negotiation of any permissive occupancy required to provide a suitable right of property tenure regarding the electrical connection and ongoing operation and maintenance.

### **6.4 High Voltage Connection Service**

If the load is unable to be supplied at low voltage due to capacity or other technical constraints, then consideration may also be given to providing supply at a higher voltage.

Installations that may be technically complex or large may be required to connect to the high voltage network at voltages from 11,000 volts to 132,000 volts.



The following will be considered when determining suitability for the provision of supply at high voltage:

- The proposed load to be connected at high voltage or the existing site must be a single customer site. Multiple occupant developments such as subdivisions, shopping centres, factory units, distribution centres, etc. are not entitled to high voltage connections.
- The proposed load may cause a quality of supply problem to existing customers. Connecting at a higher voltage will reduce the impact of the connecting load on the customers.
- The proposed load is either remote from the network or of such magnitude or operational complexity that it is best supplied directly from the high voltage network with further distribution being undertaken within the installation by the customer.

If you have an existing connection and it is agreed that you require supply at a higher voltage, then it may be possible for you to purchase existing assets located on your premises from us, which will form part of your high voltage system.

All assets within your high voltage system must comply with *Australian Standard AS / NZS 3000:2000* or other standards and associated requirements. It may be necessary for assets purchased from us to be altered to comply with these standards. This work will be your responsibility and will be inspected by us.

The provision of supply at high voltage requires you to enter into special arrangements with us for the ongoing operation and maintenance of supply. These arrangements will be discussed with you at the time of application and result in an agreed high voltage operating protocol. This protocol will also include any site specific conditions.

National Electricity Rules compliant metering will be provided by you at the voltage of supply. Metering at a lower voltage is not permissible under AEMO provisions.

The assets required to comply with our supply voltage and security standard should be funded by the you to maintain an uninterrupted supply to the end customer.

## **6.5 Micro Embedded Generator Connection Service**

Small scale renewable energy micro generation systems must be connected to the network via an inverter which complies with *AS4777 - Grid connection of energy systems via inverters* and has a capacity no more than 10kW for single phase connections or 30kW for three phase connections.

In order to connect a small scale renewable energy micro generator you must first be an existing retail electricity customer and have an installation, such as a home which is already connected to the network.

If you are not a retail customer or do not have an existing connection to our network you must first establish that connection by choosing a retailer of your choice and establishing a connection by applying for a connection of load. Naturally both applications can be submitted together.

If you are an existing customer wishing to connect a small scale renewable energy generation system to our network, you must submit an application for connection of a generator.

The terms and conditions applying to connection of a micro embedded generator to our network are set out in our Model Standing Offer for a Micro Embedded Generator Connection Service.

## **6.6 Subdivision and Multi Occupant Development**

All new real estate subdivision developments including dual occupant Torrens title subdivisions (excluding Strata developments) are assessed and are offered connection services under the Terms and Conditions of our Model Standing Offer for a Standard Connection Service (Subdivision and Asset Relocation).

All Strata title developments are assessed and offered either a Low Voltage Basic Connection Service if no extension or augmentation work is required or a Standard Connection Service where augmentation or extension of the network is required to facilitate connection of the lots being developed.

A separate connection of load application will be required for each unit in a strata development.

The local council may require you to lodge a subdivision application, a development application and building application, depending on the scope of the development. The local council may also impose conditions of consent, which must be met before development can proceed.

In most cases one condition of consent will be that you must obtain a Notification of Arrangement (NOA) from us. This NOA serves to indicate that you have made the necessary arrangements to provide electrical services to your development and that you have met the costs and any other servicing requirements identified by us.

Once all local council conditions of consent including our requirements have been met you will be able to register the subdivision plan with the Land Titles Office.

## **6.7 Asset Relocation/Removal**

The removal or relocation of our network assets by you may be approved by us if assets will be relocated or removed under the following circumstances:

- to make way for new or modified infrastructure in a development;
- to provide safety clearances as a result of a changed environment;
- to move assets as a result of changed property boundaries;
- to maintain appropriate lighting levels due to a changed environment; or
- to remove assets as a result of redundancy.

It should be noted that the removal of any assets with associated registered easements on private property does not guarantee that the easements will be relinquished. Separate agreement regarding the relinquishment of the easements and acceptance of the commercial terms must be concluded prior to any easements being released.

We will ensure that approval to release a network easement is subject to the assessment of the network and monetary values of the easement to us.

Endeavour Energy has a separate detailed policy for the release of network easements that facilitates the following objectives:

- to protect existing and future network requirements;
- to avoid unnecessary sterilisation of land;
- to identify and obtain appropriate monetary value; and
- to ensure consistency in dealing with affected property owners.

Where it is considered that a network easement has network value, alternative arrangements that would provide an equivalent level of network security must be approved by us and be provided by you.

There are a number of commonly encountered cases where no easement release payments are required:

- Where the terms of the network easement stipulate that no compensatory release payment is required and we have executed the easement document.
- Where we deem that the cost of providing alternative network security is greater than or equal to 75% of the current easement value.
- Where a development project requires the relocation or replacement of distribution assets that provide supply to the development at the same linkage point voltage.

- Where the affected land is subject to dedication as public road.
- Where the network easement contains an error or omission in the easement document or survey plan and will be replaced by a new network easement.
- Where an easement has been incorrectly or inappropriately vested in us, for example, service easement, pedestrian rights to meter box.
- Where an asset relocation project requires the removal of distribution assets that have predominantly supplied the project land and that land no longer requires supply.
- Where an exemption for special circumstances has been requested by the Network Connections Branch and agreed to by the General Manager Network Operations.

Generally for cases where there are no exemptions regarding payments for the release of easements the network easement will be released subject to an easement release payment by you that is equivalent to 75% of the current easement value (plus GST) less the cost of providing the alternative network security including replacement easements and asset value for replacement assets. If the easement is determined to be a minor blot on title the easement may be released for a fixed fee.

More information regarding the release of easements can be found in Endeavour Energy's Easement Release Policy.

## **6.8 Special Small Service (Unmetered Supply)**

All applications for special small services are assessed and, if acceptable, are offered connection services under the Terms and Conditions of our Model Standing Offer for a Standard Connection Service.

Special small services are usually small loads established in public places such as the road reserve and require additional installation criteria to services supplying private property.

These typically include bus shelters, public conveniences, public telephones, communications equipment, locality signs etc. and must be installed in accordance with the requirements detailed in the Service and Installation Rules of NSW.

Special small services are often unmetered however metering may be required in some instances. There must be an existing electricity account associated with a metered supply. For unmetered supplies the load and duty cycle must be known.

We have a separate detailed policy for connection of public lighting assets to our network.

## **6.9 Small and Medium Embedded Generator Connection Service**

All applications for small and medium sized embedded generators as defined by the National Electricity Rules are assessed and if:

- the embedded generator has a capacity of between 10kW and 5MW and is exempt by AEMO from the requirement to register as a generator in accordance with section 2.2.1(c) of the National Electricity Rules and guidelines issued by AEMO under that section, then you will be offered connection services under the Terms and Conditions of our Model Standing Offer for a Standard Connection Service, and the specific provisions relating to embedded generation set out in Schedule 3 of that offer will apply to you; or
- the embedded generator has a capacity of between 5MW and 30MW, then we will offer you a negotiated connection service.

The operation of these generators may affect other customers connected to the network so a detailed technical review of the network's capacity to transfer the generation energy along with analysis of generator protection schemes and quality of supply considerations must be undertaken in accordance with the terms and conditions of the relevant connection.

For generation systems up to 1MW a connection at LV is often possible with minimal technical analysis being required. However, generators with capacities in the range 1-5MW would normally be connected at high voltage and larger generators connected at transmission voltages.

If you are a generator applicant, you may need to provide your own analysis of the generator's capability and operational performance. You will also be requested to fund the cost of us undertaking network studies required to assess the performance of the generation system and the effects on the network and other connected customers. The extent of analysis increases with generator capacity as does the connection requirements. A suitable connection arrangement will be developed through the connection process.

## **6.10 Your Right to Negotiate**

You also have a right to negotiate your connection contract with us where:

- a) the connection service sought by you is neither a basic connection service nor a standard connection service; or
- b) the connection service sought by you is a basic connection service or a standard connection service but you elect to negotiate the terms and conditions on which the connection service is to be provided.

The negotiations may, if you elect, extend to supply services available from the Distribution Network Service Provider. For more information on negotiation of connection services, review the Endeavour Energy Negotiation Framework.

## **6.11 Property Tenure Guidelines for Contestable Works**

Where assets are constructed as part of the contestable works process and located on private property our right of access to that property must be secured to allow maintenance and operational activities to proceed. This is achieved by obtaining an easement over the property where our assets are located. Please refer to the Endeavour Energy website for information on our property tenure requirements.

# **7.0 Contractual process**

We are committed to providing an efficient service for processing of applications, enquiries and processing of contestable works activities for our customers.

We have developed and monitor key performance indicators which are a measure of the maximum allowable time for processing.

## **7.1 Application for Connection Service**

Within five (5) business days of receiving an enquiry from you about a connection service, we will provide the information you require to understand the processes associated with an application and the likely actions and costs associated with connecting to the network. We will either provide this information on our website for those with access (please see [www.endeavourenergy.com.au](http://www.endeavourenergy.com.au)), or, if requested, we will provide this information in writing to you.

## **7.2 Processing an application**

We will process a complete application for a connection service within ten (10) business days of receipt of the application. The processing of complete applications will either result in a basic connection service offer (in accordance with our Model Standing Offer) where no augmentation or extension to the mains is required or an offer for a standard connection service (in accordance with our Model Standing Offer), requiring the services of an Accredited Service Provider designer and constructor where

augmentation or extension to the network is called for. The offer will include the date of the offer, details of the connection service to be provided and a statement of the connection charges payable.

Our Model Standing Offers for a basic connection service, a micro embedded generator basic connection service, a standard connection service and a standard connection service (subdivision and asset relocation) can be found on our website at [www.endeavourenergy.com.au](http://www.endeavourenergy.com.au).

### **7.3 Acceptance of the Connection Offer**

A connection offer to provide a basic or standard connection service remains open for acceptance for 45 business days from the date of the offer and, if you do not accept it within that period, it lapses unless the period for acceptance is extended by mutual agreement.

Alternatively, if you request an expedited connection in your application, and we are satisfied that the connection application is for a basic or standard connection service that falls within the terms of the relevant Model Standing Offer, and you indicate that the terms of the relevant Model Standing Offer are acceptable to you, we are taken to have made and you are taken to have accepted an offer on the terms of the relevant Model Standing Offer on the date we receive the application.

If applicable, we will provide you with information regarding an incomplete rejected application within ten (10) business days of receipt.

If a negotiated connection service applies to you either because you requested it, or you applied for an expedited connection but we do not agree that an offer in terms of any Model Standing Offer is appropriate, we will advise you within ten (10) business days of the process and likely costs and expenses related to the negotiations.

More detail on the application process can be found on our website at [[www.endeavourenergy.com.au](http://www.endeavourenergy.com.au)]

## **8.0 Our interaction with you and your ASPs**

### **8.1 Provision of Design Brief**

When augmentation or extension works are required to facilitate connection to the network you will procure the services of a Level 3 Accredited Service Provider (designer) to assess the connection requirements and propose the most effective means of connecting to the existing network. This concept design is called a Proposed Method of Supply and is provided to us for assessment and determination. We are committed to working consultatively with the designer to determine the best connection alternative and to issue a formal Design Brief or reject the proposal with reason within ten (10) business days of receiving an acceptable Proposed Method of Supply.

### **8.2 Design Certification**

Design certification is considered to be a critical milestone signifying that your designer has undertaken all analysis, consultation and submitted all required documentation required as a design package in accordance with the Design Brief, our standards and our requirements. The design, including funding arrangements, is assessed and if correct is certified for construction. We are committed to checking and certifying or rejecting with reasons a design within ten (10) business days of receiving the complete design package.

### **8.3 Letter of Acceptance**

You must ensure that the works have been completed and all personnel associated with the works have been advised that the network should be considered electrically alive.

The ASP must provide both a declaration of works completion and a “works as completed” mark-up of the electricity network construction drawings. These must be signed and given to us prior to the issue by us of the letter of acceptance.



When we are prepared to accept transfer of the works, we will notify you in writing of this by issuing the Letter of Acceptance within five (5) working days. On such notification, full right, title and interest in the works, including the electricity network construction drawings will automatically transfer from you to us, free of rights and claims by other parties.

#### **8.4 Notification of Arrangement**

Prior to approving subdivisions for registration, local councils require developers to provide proof that the developer has made satisfactory arrangements for the provision of electricity supply to the subdivision. The Notification of Arrangement (**NOA**) issued by the local network service provider satisfies this requirement.

If you are a developer, in order for you to make the necessary arrangements for supply to your subdivision, you must first lodge an application for supply to the subdivision and satisfy all of the Terms and Conditions of the Standard Connection Service (Subdivision and Asset Relocation).

Once all the servicing requirements are met, we will issue a NOA, which can be taken to the local council to meet the development approval condition of consent.

We will normally issue a NOA within ten (10) working days after the following conditions are met:

- development consent has been given by the local council;
- suitable electric supply arrangements have been made by you to provide the electrical infrastructure required by us to service each lot within the subdivision; and
- all fees and charges associated with the provision of network connection services have been paid.

## **9.0 Specific matters for ASPs**

### **9.1 ASPs working in Endeavour Energy's area**

Newly accredited ASPs who intend to provide services within our franchise area should contact the Endeavour Energy ASP Relationship Manager who will provide relevant information and details of our requirements.

This is necessary to ensure that the ASP has access to the relevant design/construction standards and other requirements relevant to their level of activity. This requirement is extended to ASP staff and their sub-contractors.

We maintain a web based portal used to allow access by ASPs to various resources including geographical records of the network, engineering standards and general communications and bulletins specific to their activities. We are committed to providing regular seminars with ASPs to communicate issues, provide a mechanism for consultation regarding proposed changes to processes, standards or systems effecting ASPs and allow feedback.

It is essential that ASPs needing to work on or near the existing network, including undertaking live work and testing are familiar with Endeavour Energy's Electrical Safety Rules and are authorised by us to perform the specific function.

### **9.2 Pre-qualification of ASPs to carry out transmission works within the Endeavour Energy franchise area**

All Level 1 and 3 ASP's must be pre-qualified by Endeavour Energy's ASP Relationship Manager to carry out design or construction work on our transmission assets.

Generally this involves the submission of a company profile, a list of completed projects, references and curriculum vitae of key personnel (Designer, Project Manager, Cable Joints, etc.), followed by an interview where necessary. If pre-qualification is granted, the ASP may continue to carry out such



contestable work in our franchise area provided they retain the services of the key personnel submitted in their application. Any changes in key staff/sub-contractors must be advised to us and a new application for pre-qualification submitted, accompanied by new curriculum vitae for the new staff.

### 9.3 Safety

All works must comply with the requirements stipulated in both the Service and Installation Rules of NSW and Endeavour Energy's Customer Installation Safety Plan. The latest version of the Network Management Plan is available on the Endeavour Energy website, [www.endeavourenergy.com.au](http://www.endeavourenergy.com.au). Our network design, construction standards and materials approvals process incorporate consideration and assurance of safety of the assets from design to construction and on-going use.

### 9.4 Reliability

Reliability is influenced by a number of input factors such as the level of redundancy in the electricity network, the design and construction of the assets that constitute the electricity network, the condition and performance of those assets, and the ways in which the network is managed and operated. All designs are to consider the maintenance of a reliable supply to existing customers, both during stages of development and in the future. During construction, the applicant will be required to arrange for the use of generators or other alternatives in preference to a supply interruption affecting customers.

Network capacity and supply security also influence reliability, in that the standards for these are predicated on inherent levels of reliability which experience has shown to be appropriate for various supply requirements. Customers may however choose a higher level of security of supply standard for their connection assets, based on economic or other criteria. Such standards may be different from that normally required for Endeavour Energy's network, with the customer accepting the costs, impacts and risks of electing the higher standard.

Incident management will also affect reliability, and it is affected in its own right by capability and supply security, among other things. Environment factors will influence network reliability, subject to the nature of the assets relative to their environment and incident response capability relative to the environmental conditions.

### 9.5 Adequacy

Our electricity network will be developed to ensure that an adequate supply of electricity is available, both now and into the future.

### 9.6 Sustainability (Adding value to the Endeavour Energy electricity network)

All work must take into account the current and future needs of our electricity network by ensuring that all work adds value to the network for all stakeholders, including the network owners, current and future customers and maintenance requirements.

### 9.7 Practical considerations

Part of the design due diligence is the consideration of site and practical construction issues, the design must ensure that the reticulation can be built safely, to this end the designer will need to provide appropriate notes on the design that identify any safety issues noted at the design stage. The designer must also ensure that the design of the electrical works is considered from a practical construction perspective as well as future maintenance.

The preparation of the design needs to consider what outages will be required to carry out the construction works and seek ways within the design methodology to minimise those outages by utilising all available solutions.

We have numerous standards for design, construction and maintenance. It is essential that these standards are constantly consulted to ensure that the design has considered all standards requirements.

It is expected that a complete site inspection will be carried out by the designer to ensure that all site conditions are allowed for within the design, the site inspection will need to review existing infrastructure as well as other issues that are found at site to ensure that the GIS information and actual infrastructure within the area are the same. It needs to be noted that the infrastructure is being constantly changed and that site conditions may not reflect the latest GIS information.

The designer may be called upon at any time during the design or construction phase to reconsider the design to ensure that it meets all practical and supply considerations.

## Appendix 1 - Ancillary Network services

### 1. Design information

The provision of information by a DNSP to enable an ASP accredited for level 3 work to prepare a design drawing and to submit it for certification.

This may include without limitation:

1. deriving the estimated loading on the system, technically known as the ADMD (after diversity maximum demand). This estimate depends on such factors as the number of customers served and specific features of the customer's demand
2. copying drawings that show existing low and high voltage circuitry (geographically and schematically) and adjacent project drawings
3. specifying the preferred sizes for overhead wires (conductors) or underground wires (cables)
4. specifying switchgear configuration type, number of pillars, lights etc
5. determining the special requirements of the DNSP's planning departments necessary to make electrical supply available to a development and cater for future projects
6. any necessary liaison with designers associated with assistance in sourcing design information and developing designs
7. nominating network connection points.

### 2. Design certification

A certification by a DNSP that a design (if implemented) will not compromise the safety or operation of the DNSP's distribution system.

This may include, without limitation:

1. certifying that the design information/project definition have been incorporated in the design
2. certifying that easement requirements and earthing details are shown
3. considering design issues, including checking for over-design and mechanisms to permit work on high voltage systems without disruption to customers' supply (adequate low voltage parallels)
4. certifying that funding details for components in the scope of works are correct
5. certifying that there are no obvious errors that depart from the DNSP's design standards and specifications
6. certifying that shared assets are not over-utilised to minimise developer's connection costs and that all appropriate assets have been included in the design
7. auditing design calculations such as voltage drop calculations, conductor clearance (stringing) calculations etc
8. certifying that a bill of materials has been submitted
9. certifying that an environmental assessment has been submitted by an accredited person and appropriately checked.

### 3. Design rechecking

The rechecking of a design submitted under section 1.2.2, except where the modifications to a design are of a trivial or minor nature.

### 4. Inspection of service work (level 1 work)

The inspection by a DNSP of work undertaken by an ASP accredited to perform level 1 work, for the purpose of ensuring the quality of assets to be handed over to the DNSP.

## 5. Inspection of service work (level 2 work)

The inspection by a DNSP of work performed by an ASP accredited to perform level 2 work, complying with the condition below.

Condition

The minimum number of inspections required must correspond to the grade of the DNSP in table G.1 below:

Table G.1: Inspection rate

Grade	Number of inspections
A	1 inspection per 25 jobs
B	1 inspection per 5 jobs
C	Each job to be inspected

## 6. Re-inspection of level 1 or level 2 work

The re-inspection by a DNSP of work (other than customer installation work) undertaken by an ASP accredited to perform level 1 or level 2 work, for the reason that on first inspection the work was found not to be satisfactory.

## 7. Re-inspection of work of a service provider

The re-inspection by a DNSP of customer installation work undertaken by a service provider for the reason that on first inspection the work was found not to be satisfactory.

## 8. Access permit

The provision of a permit by a DNSP to a person authorised by law to work on, or near, a distribution system.

This may include without limitation:

1. researching and documenting the request for access
2. documenting the actual switching process
3. programming the work
4. control room activities
5. fitting and removing of operational earths
6. the actual switching together with any operator's transport costs
7. identification of any customers who will be interrupted
8. low voltage switching and paralleling of substations that permits high voltage work without disrupting supply to other customers.

## 9. Substation commissioning

The commissioning by a DNSP of a new substation, (whether it is a single pole, padmount/kiosk or indoor/chamber) and includes:

1. all necessary pre-commissioning checks and tests prior to energising the substation via the high voltage switchgear and closing the low voltage circuit breaker, links or fuses and
2. the setting or resetting of protection equipment.

## 10. Administration

Work of an administrative nature (not including work of an administrative nature described in section 11), involving the processing of level 1 and/or level 3 work where the customer is lawfully required to pay for the level 1 and /or level 3 work.

This may include without limitation:

1. checking supply availability
2. processing applications
3. correspondence from application to completion
4. record-keeping
5. requesting and receiving fees (initially, then prior to design and after certification)
6. receiving design drawings (registering and copying)
7. raising an order for high voltage work
8. calculating high voltage reimbursements
9. calculating the cost of a project and warranty/maintenance bond
10. organising refunds to developers for high voltage work
11. liaising with developers via phone and facsimile
12. updating geographic information systems (GIS) and mapping.

## 11. Notice of arrangement

Work of an administrative nature performed by a DNSP where a local council requires evidence in writing from the DNSP that all necessary arrangements have been made to supply electricity to a development.

This may include without limitation:

1. receiving and checking linen plans and 88B Instruments
2. copying linen plans
3. checking and recording easement details
4. preparing files for conveyancing officers
5. liaising with developers if errors or changes are required
6. checking and receiving duct declarations and any amended linen plans and 88B Instruments approved by a conveyancing officer
7. preparing notifications of arrangement.

## 12. Access

The provision of access to switchrooms, substations and the like to an ASP who is accompanied by a member of staff of a DNSP, but does not include the circumstance where an ASP is provided with keys for the purpose of securing access and is not accompanied by a member of staff of the DNSP.

## 13. Authorisation

The annual authorisation by a DNSP of individual employees or sub-contractors of an ASP to carry out work on or near the DNSP's distribution system.

This may include without limitation:

1. familiarisation and training in the DNSP's safety rules and access permit requirements;
2. induction in the unique aspects of the network;
3. verification that the applicant has undertaken the necessary safety training (resuscitation etc) within the last 12 months;
4. conducting interviews/examinations for access permit recipients; and

5. issuing authorisation cards.

#### **14. Site establishment**

The issue of a meter by a DNSP and its co-ordination with AEMO for the purpose of establishing a NMI in MSATS for new premises or for any existing premises for which a requires a new NMI and for checking and updating network load data.