

Guide to rights and obligations for electricity mains located on private property

MMI 0021

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Endeavour
Energy

Revision History

This standard replaces amendment no 4. All changes are highlighted in this document with grey colouring.

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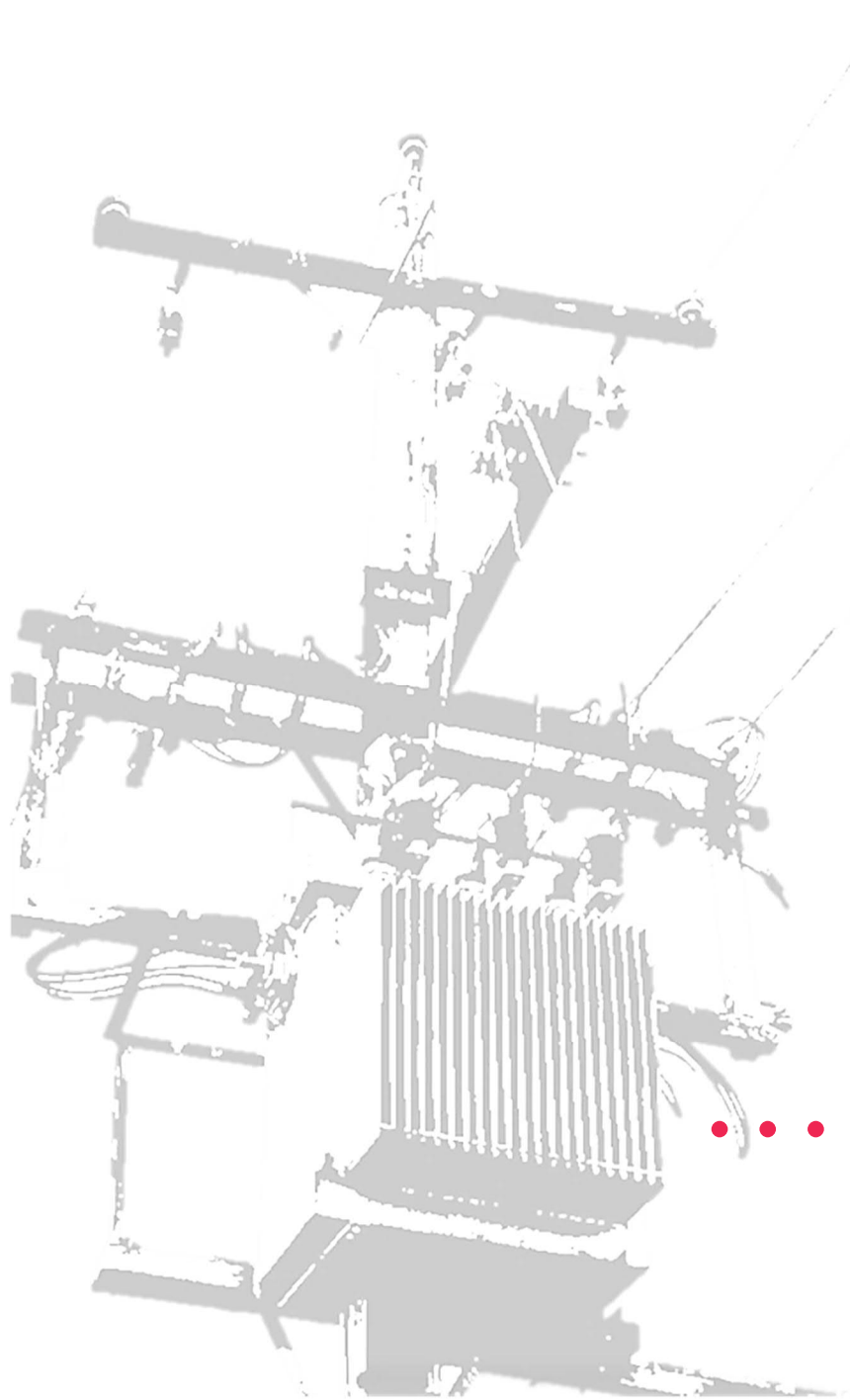
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1 Documentation Scope

To define Endeavour Energy's obligations and statutory rights in relation to overhead and underground mains located on private property, and the delineation between mains and equipment that are the responsibility of Endeavour Energy, and those that are the responsibility of the customer.

This instruction applies to all overhead and underground mains located on private property.

2 References

External Regulations

Electricity Supply Act 1995 (NSW)

Electricity Supply (Safety and Network Management) Regulation 2014

External Standards

AS/NZS 3000:2018 – Electrical installations

AS/NZS 7000:2016 – Overhead line design

ENA National Electricity Network Safety Code (Doc 01-2008)

Service and Installation Rules of New South Wales – November 2018

Company Policies and Procedures

Company Policy 9.2.3 – Property Tenure For Network Assets

Company Policy 9.9.1 – Network Asset Maintenance

Company Procedure (Network) GAM 0120 – Powers of entry to private property and the meter box, including entry using force

Company Standards

Mains Maintenance Instruction MMI 0013 – Vegetation clearance management

Substation Maintenance Instruction SMI 101 – Minimum requirements for maintenance of distribution equipment

SMI 124 – Maintenance data entry and defect prioritisation

Internal Procedures & Workplace Instructions

Workplace Instruction WRG 0502 – Investigation and cost recovery of third party impact damage to the company's network assets

Workplace Instruction WAE 2039 – Customer defect reporting and defect management

Other References

Endeavour Energy Network Management Plan (2013 Review)

Endeavour Energy Bushfire Risk Management Plan

3 Definitions and Abbreviations

Abbreviation	Meaning
ASP	Accredited Service Provider
MMI	Mains Maintenance Instruction
SMI	Substation Maintenance Instruction

Term	Definition
Bush fire prone land	As defined in MMI0013 Vegetation clearance management.
Connection device	A fixture that forms the physical junction through which electricity is transmitted across a break in electrical conductors.
Connection point	The junction where the distribution system is connected to the customer installation, typically on the network side of a connection device. Note that for legacy installations a physical break may not be established between the service mains and the consumer mains, and in these instances the connection point for the LV overhead service is the first pole located within the private property. Previously known as point of supply.
Consumers' mains	Conductors between the connection point and the main switchboard, forming part of an electrical installation. Consumers' mains may be overhead, underground or within a structure.
Customer	An individual or an entity who (either personally or through an agent) applies for or receives or makes use of a connection of an electrical installation to the electricity distributor's distribution system.
Distribution mains	Any bare or insulated overhead conductor, or underground cable, for the supply of electricity to Endeavour Energy customers at a voltage from low voltage and up to 22kV operation, not including service mains.
Distribution system	Electricity power lines and associated equipment and electricity structures that are used to convey and control the conveyance of electricity to the premises of wholesale and retail customers.
Electrical installation	All the electric wires, cables, appliances, fittings, insulators and apparatus installed in, on, under or over any land or premises and used for, or for purposes incidental to, the conveyance, measurement, control or use of electricity supplied (or intended to be supplied) by Endeavour Energy, but does not include: an electricity distribution system or service main, meter or apparatus being the property of Endeavour Energy, accredited meter provider or retail supplier and used solely for the conveyance, measurement or control of electricity supplied to any land or premises; or, moveable electrical equipment.
High voltage (HV)	A nominal voltage normally exceeding 1000 volts ac or 1500 volts dc.
Low voltage (LV)	A nominal voltage, more than 50V ac or 120V dc, but not normally exceeding 1000V ac or 1500V dc.
LV spreaders	Spacer rods manufactured from fibreglass or plastic attached to bare overhead mains to keep the phases separate.
Overhead services	Overhead or aerial conductors operating at a voltage not exceeding 600/1000 volts, between Endeavour Energy's distribution mains system and a customer's connection point.

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Term	Definition
Point of attachment (POA)	The point or points at which aerial conductors of an overhead service or aerial consumer's mains are terminated on a customer's building, pole or structure.
POA bracket	A metal bracket commonly used to support the aerial conductors where they are terminated on a customer's building.
Point of common coupling	The point on a distribution system, electrically nearest to a particular load, at which other loads are, or could be, connected.
Point of supply	Previous name for the connection point.
Private overhead line	All aerial mains and their supports that extend beyond the connection point, including all aerial consumer mains and all aerial sub-mains.
Private pole	A pole not owned by Endeavour Energy for which the maintenance is the property owner's responsibility.
Service pole	A private pole where the connection point is located (that is, where the service mains ends).
Sub-mains	Conductors beyond the main switchboard or metering unit, owned and maintained by the customer.
Underground services	Cables operating at a voltage not exceeding 600/1000 volts, between Endeavour Energy's distribution mains and a customer's connection point. The service does not include the conduit, structure or enclosure protecting or enclosing the cable that is situated on land to which the customer has a legal right of access for the purpose of owning or maintaining the installation.

A full list of definitions is contained in SMI 100 and SMI 101

4 General Requirements

4.1 Endeavour Energy's legal rights

In situations where network assets are located within an easement, Endeavour Energy has the right to maintain, operate and replace these assets in accordance with the rights specified in the easement terms.

Section 53 of the Electricity Supply Act 1995 provides for the continued operation and maintenance of any mains and associated equipment on private property except those located within a registered easement benefiting Endeavour Energy. This Section commenced on 26 May 2006 and applies to equipment (protected works) that existed immediately prior to this date.

Section 53 states in part:

“... the presence of those works, and their operation and use, are taken to be lawful for all purposes.”

Therefore, Endeavour Energy has a statutory right to retain distribution mains on private property, including a right to enter the property and maintain them. Entry onto private property must be undertaken in accordance with Company Procedure GAM 0120 *Powers of entry to private property and the meter box, including entry using force*.

This also includes the right to carry out augmentation of those mains, such as re-conductoring and uprating of services.

Should a property owner want protected works to be removed or relocated from their property, Endeavour Energy is under no obligation to do so. The removal or relocation of these works may however be carried out as customer funded contestable work.

Section 53 does not provide rights like an easement that restrict activities in areas adjacent to the electricity mains. The safety of the distribution system is protected however by Sections 49 and 49A of the Electricity Supply Act.

If it is deemed necessary to impose additional restrictions over existing mains, the acquisition of an easement will be necessary.

4.2 Endeavour Energy's legal obligations

4.2.1 Consultation with property owner on construction and programmed maintenance works

In all cases where private property is to be entered to carry out construction or programmed condition based maintenance works, the owner of the property must be consulted and advised of the nature of works to be carried out before proceeding with those works.

This is irrespective of whether or not the mains are located in an easement.

4.2.2 Routine maintenance, inspection and fault and emergency works

a) Distribution mains and equipment owned by Endeavour Energy

Where private property is to be entered to carry out routine maintenance, inspection or fault and emergency activities involving equipment that is part of the distribution system, reasonable efforts must be made at the time of the routine maintenance, inspection or fault and emergency to inform the owner that their property is to be entered to carry out these works. Entry onto private property must be undertaken in accordance with Company Procedure GAM 0120 *Powers of entry to private property and the meter box, including entry using force*.

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However, this should not prevent the routine maintenance, inspection or fault and emergency work from proceeding if employees and/or contractors are unable to contact the property owner.

b) Private overhead lines

Where private property is to be entered to carry out routine inspection of private overhead lines, reasonable efforts should be made to contact the customer before carrying out the proposed work.

4.2.3 Repair of damage

Any damage done to the property (for example, to fences, gardens, turf, and the like), as a consequence of entering the property and carrying out works, must be made good, to the reasonable satisfaction of the property owner, upon completion of the works.

4.2.4 Authorisation to enter

Persons required to enter private property must be authorised in accordance with clause 54 (1) and (2), clause 56 (1) and (2), and clause 61 (as relevant) of the Electricity Supply Act 1995 and entry undertaken in accordance with Company Procedure GAM 0120 *Powers of entry to private property and the meter box, including entry using force*.

4.3 Application of legislation in bushfire prone areas

The *Electricity Supply Act* 1995 was amended to create special rights for bushfire prevention on bush fire prone land. These new rights will apply in addition to the existing rights applicable to all land.

4.3.1 Power to give directions for bush fire risk mitigation work on private land

A written notice may be given to the owner or occupier of any private property on bush fire prone land to direct the owner of the premises to do bush fire risk mitigation work on vegetation or aerial consumer mains in accordance with clause 53C of the *Electricity Supply Act*.

4.3.2 Responsibility for cost of bush fire risk mitigation work

The responsibility for cost of bush fire mitigation work on private land is detailed in clause 53D of the *Electricity Supply Act*.

Where private vegetation has an impact on **service mains**, the customer is responsible for the cost of work if the owner or occupier of the premises planted the vegetation after the electricity works were first installed. Endeavour Energy is responsible for the cost of works if the vegetation existed prior to installation of the electricity works.

In such situations, it is presumed that the vegetation was planted after the installation of the electricity works, and thus the customer is responsible for the cost of works.

However, where the customer believes that the vegetation existed prior to the installation of the electricity works; the customer may write and request an assessment from Endeavour Energy of this position. The assessment must be carried out on the basis of a certified horticulturist's evaluation of the age of the vegetation and a review of the Council records relating to the development of the premises.

If the horticulturalist's assessment indicates that the age of the vegetation pre-dates the development of the premises, then Endeavour Energy will accept the cost of vegetation trimming as well as the cost of the aforementioned horticultural assessment. Otherwise, if the vegetation was planted after the development of the premises, the customer is responsible for the cost of vegetation trimming, the cost of the horticultural assessment and land searches, and Endeavour Energy's regulated administrative charges.

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Note: Endeavour Energy is responsible for any vegetation defects which have an impact on distribution mains. The customer is responsible for vegetation defects which have an impact on private mains (consumer mains and sub-mains).

4.3.3 Contents of direction/notice

Any direction/notice given to the owner of premises to do bush fire risk mitigation works must specify the required contents of direction specified in clause 53E of the *Electricity Supply Act* and *Electricity Supply (Safety and Network Management) Regulation 2014*.

4.3.4 Compliance with direction/notice

In accordance with clause 53F of the *Electricity Supply Act*, in order to comply with a direction:

- the owner must complete the required work within 60 days of the direction being given, and notify Endeavour Energy within 30 days that the work will be completed within the 60 days; or alternatively;
- request to be disconnected within 30 days of receiving the direction.

If the customer does not comply with the direction, Endeavour Energy may carry out the required work and recover the reasonable cost of doing the work (unless Endeavour Energy is responsible for the cost). Any dispute about the reasonable cost of doing the work may be referred to the Energy and Water Ombudsman NSW for resolution.

4.4 Application of legislation in non-bushfire prone areas

4.4.1 Power to give directions for work on private land

A written notice may be given to the owner or occupier of any private property to direct the owner of the premises to rectify vegetation or private mains defects (in accordance with the *Electricity Supply Act 1995*, *NSW Service and Installation Rules*, *AS/NZS 3000* and *AS/NZS 7000*).

4.4.2 Responsibility for cost of vegetation work

The responsibility for cost of vegetation work on private land is detailed in clause 48 of the *Electricity Supply Act 1995*.

Where private vegetation has an impact on **service mains**, the customer is responsible for the cost of work if the owner or occupier of the premises planted the vegetation after the electricity works were first installed. Endeavour Energy is responsible for the cost of works if the vegetation existed prior to installation of the electricity works.

In such situations, it is presumed that the vegetation was planted after the installation of the electricity works, and thus the customer is responsible for the cost of works.

However, where the customer believes that the vegetation existed prior to the installation of the electricity works; the customer may write and request an assessment from Endeavour Energy of this position. The assessment must be carried out on the basis of a certified horticulturist's evaluation of the age of the vegetation and a review of the Council records relating to the development of the premises.

If the horticulturist's assessment indicates that the age of the vegetation pre-dates the development of the premises, then Endeavour Energy will accept the cost of vegetation trimming as well as the cost of the aforementioned horticultural assessment. Otherwise, if the vegetation was planted after the development of the premises, the customer is responsible for the cost of vegetation trimming, the cost

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of the horticultural assessment and land searches, and Endeavour Energy's regulated administrative charges.

Note: Endeavour Energy is responsible for any vegetation defects which have an impact on distribution mains. The customer is responsible for vegetation defects which have an impact on private mains (consumer mains and sub-mains).

4.4.3 Compliance with direction/notice

Each customer defect issued must be monitored to verify that the customer has complied with the direction. If the customer does not comply with the requirements of the defect notice, the customer must be given a written notice to remind the customer that they will be disconnected from supply if the defect is not rectified. To assist the customer in rectifying the defect, reasonable attempts must be made to deal with the customer in person or by telephone. At least two written notices must be given before attempting to disconnect the customer from supply.

4.5 Maintenance responsibilities

Endeavour Energy has the prime responsibility for carrying out maintenance of the service mains. The customer has responsibility for maintenance of their installation, including their consumer mains.

Endeavour Energy is responsible for the following:

- Inspection and maintenance of all overhead services (including poles and service mains) and underground services (including underground service mains) up to the **connection point**.
- Undertaking the inspection of all low voltage private overhead lines and supporting poles, with the exception of those owned by a customer supplied at high voltage (refer to **clause 4.5.1**).

Note: Endeavour Energy will advise the customer of any defects detected on private overhead lines and it will be the customer's responsibility to have these defects repaired. The customer may also arrange their own inspection however Endeavour Energy is required to and will perform regular inspections of all private overhead lines.

Endeavour Energy has also undertaken to maintain the vegetation clearances required in accordance with Mains Maintenance Instruction MMI 0013 – **Vegetation clearance management**, for all network overhead lines.

Endeavour Energy inspects and carries out any subsequent vegetation removal that may be required up to the point where the overhead service mains crosses the relevant property line (or up to the point of common coupling if a distribution transformer is located within the customer's property – refer to **clause 0** for example). Endeavour Energy inspects all overhead LV lines beyond this point up to the point of attachment, but requires the customer to manage any vegetation removal that may be required.

Where an overhead service to a customer traverses another customer's property, Endeavour Energy undertakes to carry out any vegetation clearing that may be required (in the absence of any other legally binding maintenance agreement between the relevant property owners).

The customer is responsible for all initial construction costs of all mains and equipment from the point of common coupling on the network to their premises, in accordance with the Service and Installation Rules of NSW, the **Model Standing Offer**, and the **Deemed** Standard Connection Contract.

Endeavour Energy is responsible for the ongoing maintenance of all mains and equipment from the point of common coupling on the network to the **connection point**. The service comes under the ownership, control and maintenance of the electricity distributor as part of its network.

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The service does not include the bracket or any other form of anchor at which the service is terminated, but includes the strain clamp at the POA. Note that the service does not include the connection device, i.e. mains connection box, at the connection point.

For overhead installations, the service is the first span beyond the point of common coupling in accordance with the Service and Installation Rules of NSW. Endeavour Energy is not responsible for any conduits or enclosures containing the customer's underground service mains on the customer's property.

The customer is responsible for the ongoing maintenance of all mains and equipment forming their installation from the connection point.

Where Endeavour Energy's inspector determines that LV spreaders are required in order to comply with the requirements of Endeavour Energy's bare overhead mains design Standards, Endeavour Energy is responsible for their erection and maintenance up to the connection point. Beyond the connection point, their erection and maintenance is the customer's responsibility.

4.5.1 High voltage customers

In the case of high voltage (HV) customers, Endeavour Energy will be responsible for maintenance of the mains, including management of vegetation, to the agreed connection point as defined in the HV Operating Agreement. The customer is responsible for maintenance of the HV metering unit and the electricity network beyond the connection point, including the metering point pole (if applicable).

Endeavour Energy must confirm that all bushfire defects on HV customer lines are rectified prior to the start of the bushfire season. If any defects are identified, the customer must be notified in accordance with clause 4.3 (with the exception of 4.3.2).

4.5.2 A guide to damage restoration responsibilities

The restoration of Endeavour Energy assets (including service mains up to the connection point) damaged by vehicle impact, interference from trees, digging and the like, is not contestable and is to be carried out as quickly as practical by Endeavour Energy.

If possible, the cost of the work is to be charged to the person responsible for the damage, in accordance with Branch Workplace Instruction WRG 0502 – *Investigation and Cost Recovery of Third Party Impact Damage to the Company's Network Assets*.

Note: Clauses 1.10.7, 1.12.4 and 1.12.5 of the Service and Installation Rules of NSW are useful references in relation to responsibilities.

As non-contestable work, the charge to the responsible person must be in accordance with Australian Energy Regulator (AER) regulated rates, including allowance for overtime, where appropriate. If the responsible person cannot be identified, the restoration cost, including overtime, will be borne by Endeavour Energy.

If work is carried out on the point of attachment for aerial consumer mains, or to restore underground conduits on the customer's property, the customer must be informed that this is the customer's responsibility and that an ASP/licensed electrician and/or other qualified person should be employed to carry out the work before the mains can be restored.

If it is not possible to restore an overhead service without also restoring aerial consumers' mains, and it is not practical to create a strain termination at the first point of attachment, Endeavour Energy should restore as much of the aerial consumers' mains as necessary to fulfil Endeavour Energy's responsibilities.

If there is any evidence that the presence of telecommunications cable contributed to the damage, the evidence is to be noted to assist in the possible recovery of costs from the responsible cable owner.

4.5.3 Crossing of adjoining property

In accordance with clause 3.2.4 of the Service and Installation Rules of NSW, if a customer is required to relocate an existing cross property overhead service that is not installed with an easement, the customer is responsible for the associated cost, refer to [clause 4.1](#) for further details. If a service main that is located in an easement is required to be relocated, the person requesting the relocation is responsible for all associated costs. In both these instances the work is considered to be contestable work.

4.5.4 Replacement of Endeavour Energy poles with customer switchboards attached

In some areas, network poles installed on private property have been used to support the customer's switchboard and associated cabling. This is now deemed to be an inappropriate location for a customer's switchboard or meter box installation. Hence, these situations must be rectified as and when the poles are identified for replacement, which may occur through either the pole condemnation process or a line upgrade.

The replacement pole must be installed in close proximity (approximately three to four metres) from the existing pole such that a suitable work space is provided for any future maintenance activity.

Provided the existing pole has a safety factor greater than two after cropping, it may remain to support the customer's assets. The existing pole is to be cropped (cut and removed) approximately 300mm above the top of the switchboard and fitted with a new pole cap. New underground consumer mains must be run to the new substation pole via a LVABC fuse switch installed four metres above ground in accordance with the Service & Installation Rules NSW and AS/NZS 3000. Assistance in understanding these requirements can be obtained from [the Construction Coordination Section within Network Connections](#).

Where the existing pole with the switchboard is found to have a safety factor less than two after cropping, a new customer service pole must be installed as well as Endeavour Energy's new pole.

To avoid major work to the customer's underground wiring emanating from the switchboard, the new support structure should if possible replace the existing pole. A short section (4 metres) of a pole or similar may be used for this purpose.

As this work is carried out on private property, the customer must be informed of the intended work and issued a letter (refer to attachment on Standards website – [Letter to Inform Customer of Intended Works and Responsibility of Ongoing Maintenance](#)), outlining the ownership of the various assets and that the customer is responsible for the ongoing maintenance of the switchboard structure.

5 A guide to maintenance responsibilities

The following is a guide to determining the location of the **connection point** for the most common methods of connection, and the maintenance responsibilities of Endeavour Energy and the customer. In accordance with the Clause 1.12.4 of the Service and Installation Rules of NSW, the **connection point** is the first support on the customer's property **beyond the point of common coupling**. An exception to this is where a low voltage customer's main switchboard (and hence, the **connection point**) is located remotely outside of the customer's property (refer to clause 5.8). Note that a physical break is not required to constitute a junction between Endeavour Energy and consumer mains (at the **connection point**). Where this situation exists and a physical break is required to allow the customer's ASP to carry out maintenance work, it will be necessary for Endeavour Energy to install the break.

Note: There will be instances where legally binding agreements have been made that will alter the ownership and maintenance responsibilities set out in the scenarios below. However, in the absence of such legally binding agreements, these guidelines will apply.

In many instances, customers have arranged easements over common extended consumers' mains and have reached legally binding agreements over shared maintenance responsibilities.

Similarly, in some instances, Endeavour Energy's predecessors will have entered into agreements with customers that set out ownership and maintenance responsibilities for lines that differ from these scenarios: these agreements are legally binding on Endeavour Energy.

Where these situations arise, it will be necessary for Endeavour Energy's actions to be acceptable in terms of these agreements.

Note: On the following drawings, Endeavour Energy's assets are shown by green lines. Those that are the customer's responsibility are shown by orange lines.

5.1 Overhead service direct from distribution mains to connection point on a customer's building (Figure 1)

a) Responsibility of Endeavour Energy:

- Inspection and maintenance of overhead service mains from the point of common coupling to the connection point.
- Maintenance of insulators, strain clamps and the like on the point of attachment bracket.
- Inspection of the connection between overhead service mains and the consumer's mains.
- Inspection of vegetation clearances from the overhead service mains for their entire length, and the removal of any vegetation on neighbouring property that may be required to maintain clearances near the overhead service mains where the service mains cross any other property other than that being supplied, including public land.

b) Responsibility of customer:

- Management of any removal of vegetation that may be required to maintain clearances around the overhead service mains on the customer's property.
- Point of attachment bracket and/or wooden batten, including supporting bolts and the connection device including any mains connection box.
- Consumer's mains, from connection to service mains to meter box/main switchboard.
- Main switchboard/meter box.
- Remainder of customer's installation.

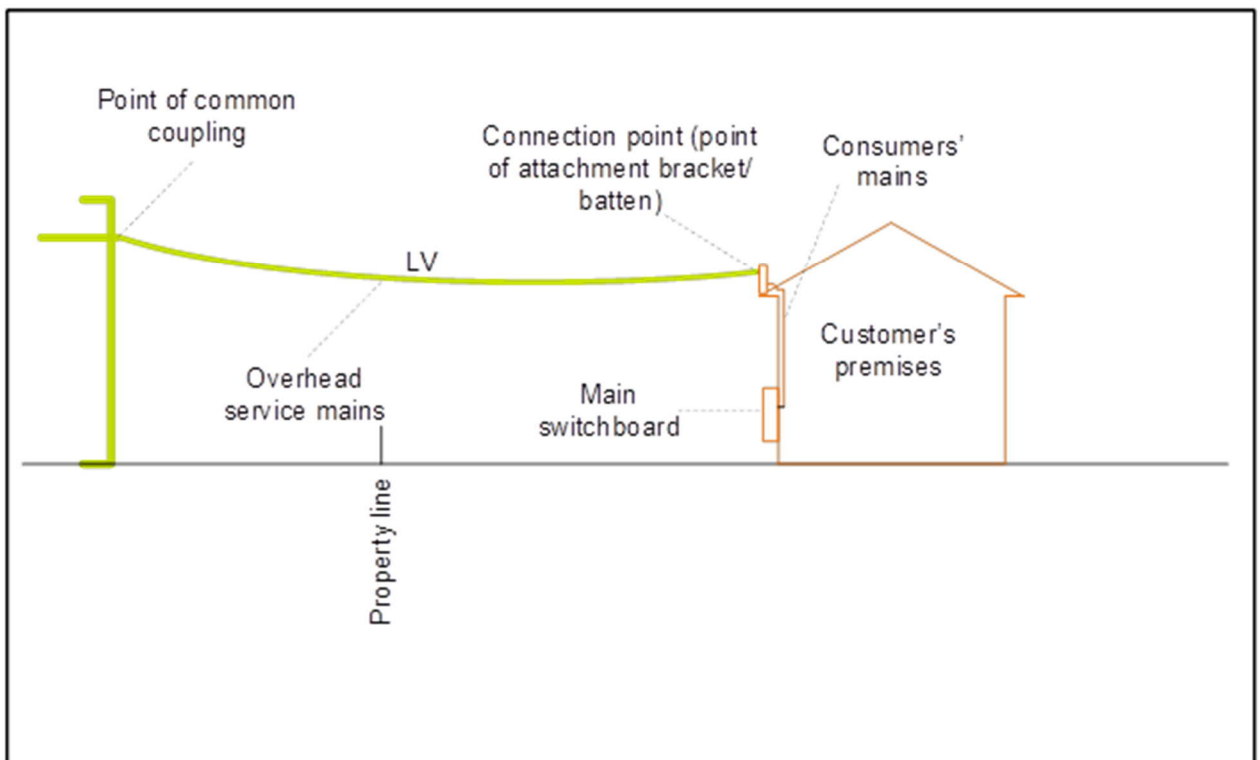


Figure 1 - Overhead service to point of attachment on customer's premises

5.2 Overhead service from distribution mains to connection point on customer's premises at a service pole (Figure 2) (includes multiple metering points on the same property)

a) Responsibility of Endeavour Energy:

- Maintenance of overhead service mains from the point of common coupling to the connection point at the service pole.
- Inspection of vegetation clearances from the overhead service mains for their entire length, and the removal of any vegetation from neighbouring property that may be required to maintain clearances near the overhead service mains where the service mains cross any other property other than that being supplied, including public land.
- Insulators, strain clamps and the like associated with Endeavour Energy's mains only, at the service pole.
- Inspection of any connection between overhead service mains and consumers' mains.
Note: The service mains and the consumers' mains can be continuous in legacy installations where a physical break has not been established at the connection point.
- Inspection of the service pole.

b) Responsibility of customer:

- Maintenance and replacement of private pole and associated crossarm, and aerial consumer mains fittings.
- Point of attachment bracket and/or wooden batten at customer's premises, including supporting bolts and the connection device, including any mains connection box.
- Mains from the connection point on the private pole to customer's premises.
- Mains between attachment bracket and main switchboard/meter box, including the connection.
- Remainder of customer's installation.
- Management of any removal of vegetation that may be required to maintain clearances from service mains or aerial consumer mains on the property being supplied.

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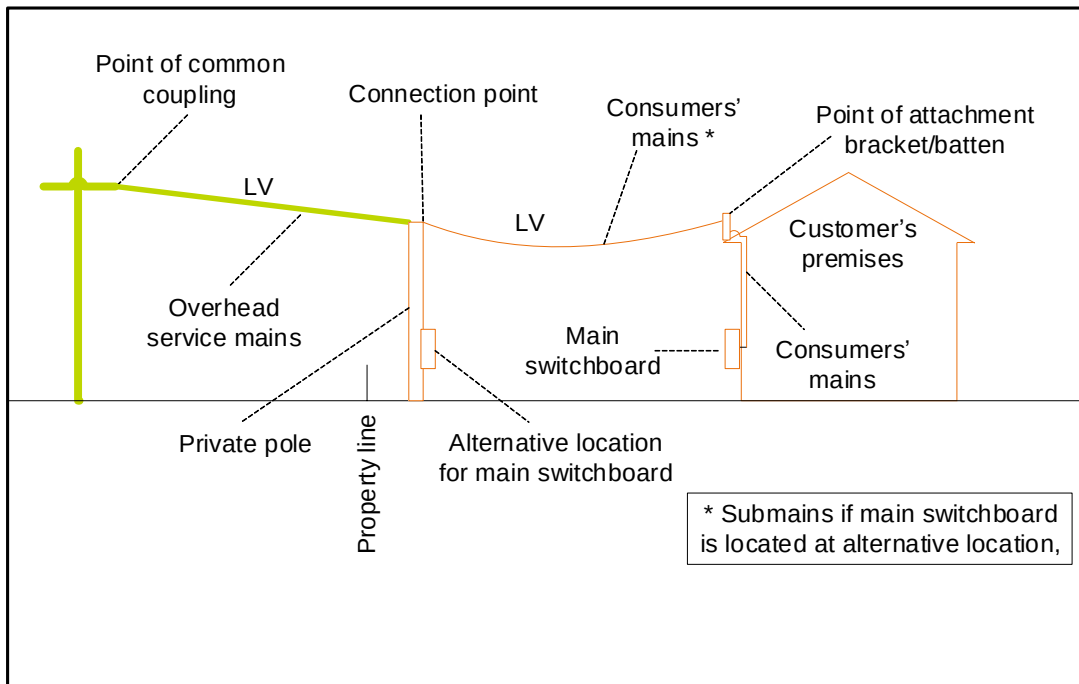


Figure 2 - Overhead service to point of attachment on customers premises by the way of an intermediate pole

5.3 Customer supplied at low voltage, direct from distribution substation on the customer's property (Figure 3)

a) Responsibility of Endeavour Energy:

- Inspection and maintenance of all overhead high voltage mains and associated poles.
- Maintenance of substation, including pole, transformer and substation LV switchgear.
- Connection between substation LV switchgear and consumer's mains.
- Inspection of vegetation clearances to all the overhead lines, and removal of any vegetation that may be required to maintain clearances up to the point of common coupling.
- Inspection of all overhead mains and all poles to which overhead mains are attached.

b) Responsibility of customer:

- Consumer's mains from connection point to the main switchboard/meter box.
- Management of vegetation associated with all low voltage mains on the property.
- Point of attachment bracket and/or wooden batten, including supporting bolts and the connection device, including any mains connection box.
- Main switchboard/meter box.
- Remainder of customer's installation.

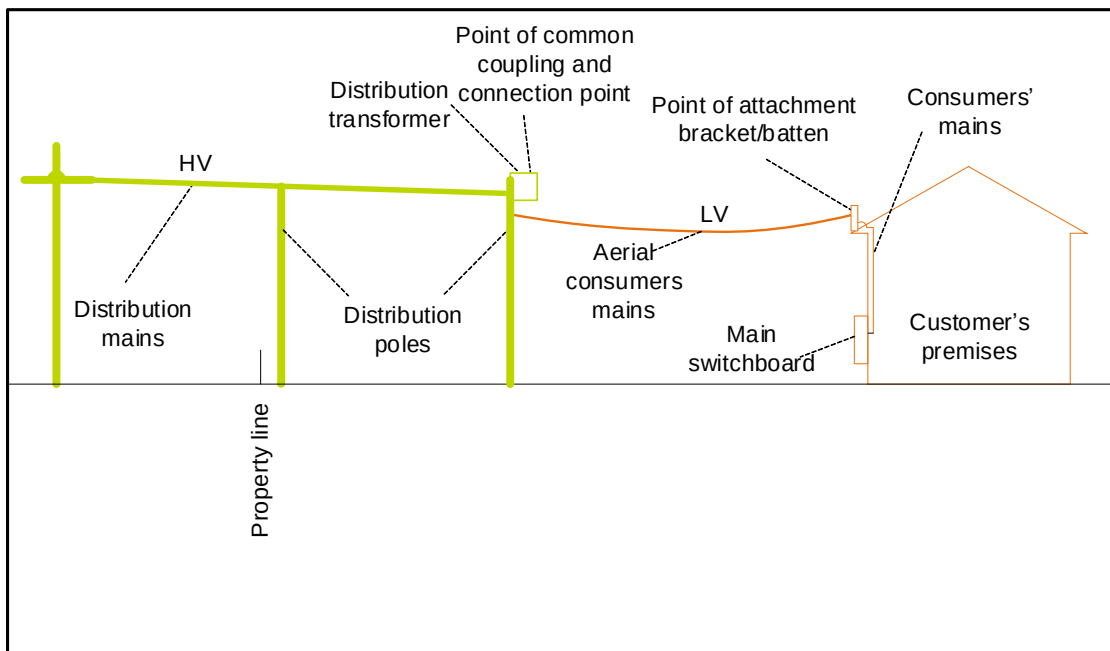


Figure 3 - LV customer supplied direct from substation located on customers property

5.4 Customer supplied at low voltage, direct from distribution substation with intermediate poles on the customer's property (Figure 4)

a) Responsibility of Endeavour Energy:

- Inspection and maintenance of all overhead high voltage mains and associated poles.
- Maintenance of substation, including pole, transformer and substation LV switchgear.
- Connection between substation LV switchgear and consumer's mains.
- Inspection of vegetation clearances to all the overhead lines, and removal of any vegetation that may be required to maintain clearances up to the point of common coupling.
- Inspection of all overhead mains and all poles to which overhead mains are attached.

b) Responsibility of customer:

- Consumer's mains from connection point to the main switchboard/meter box.
- Management of vegetation associated with all low voltage mains on the property.
- Point of attachment bracket and/or wooden batten, including supporting bolts and mains connection box.
- Main switchboard/meter box.
- Remainder of customer's installation.

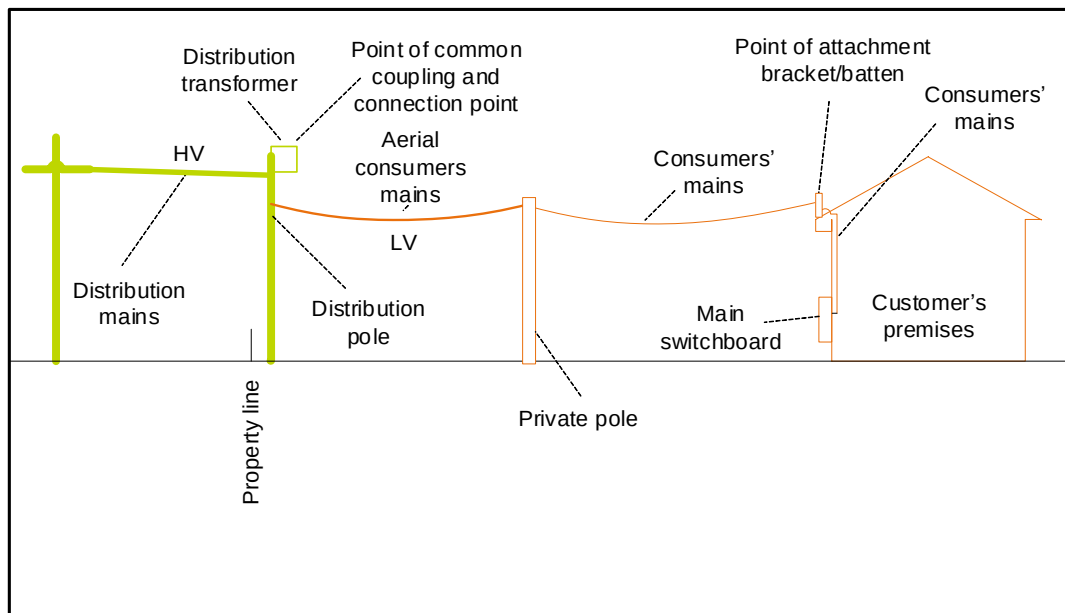


Figure 4 - LV Customer supplied direct from substation with intermediate poles located on customer's property

5.5 Overhead low voltage supply to a single customer that traverses a property (or properties) in addition to that on which the customer's premises are located and there are no registered easements over the lines (Figure 5)

a) Responsibility of Endeavour Energy:

- Maintenance of overhead service mains from the point of common coupling to the connection point.
- Inspection of vegetation clearances to all the overhead lines and any vegetation removal from neighbouring property that may be required to maintain clearances up to the point where the service mains cross the customer's property boundary, and near service mains where the service mains cross property other than that being supplied, including public land.
- Insulators, strain clamps and the like, associated with Endeavour Energy's mains only, at the service pole.
- Inspection and maintenance of any connection between overhead service mains and the consumer's mains.
Note: The service mains and the consumers' mains can be continuous in legacy installations where a physical break has not been established at the connection point.
- Inspection of all overhead mains, and all poles to which overhead mains are attached.

b) Responsibility of customer:

- Maintenance and replacement of all private poles and overhead mains forming part of the consumer's installation including the service pole.
- Point of attachment bracket and/or wooden batten at customer's premises, including supporting bolts and the connection device, including any mains connection box.
- Mains from the connection point to the customer's premises.
- Mains between point of attachment bracket and main switchboard/meter box, including the connection.
- Remainder of customer's electrical installation.
- Management of vegetation and any vegetation removal that may be required to maintain clearances near the overhead service mains supplying the customer on the customer's premises and all of the private overhead mains that are part of the installation.

MMI 0021 – Guide to rights and obligations for electricity mains located on private property

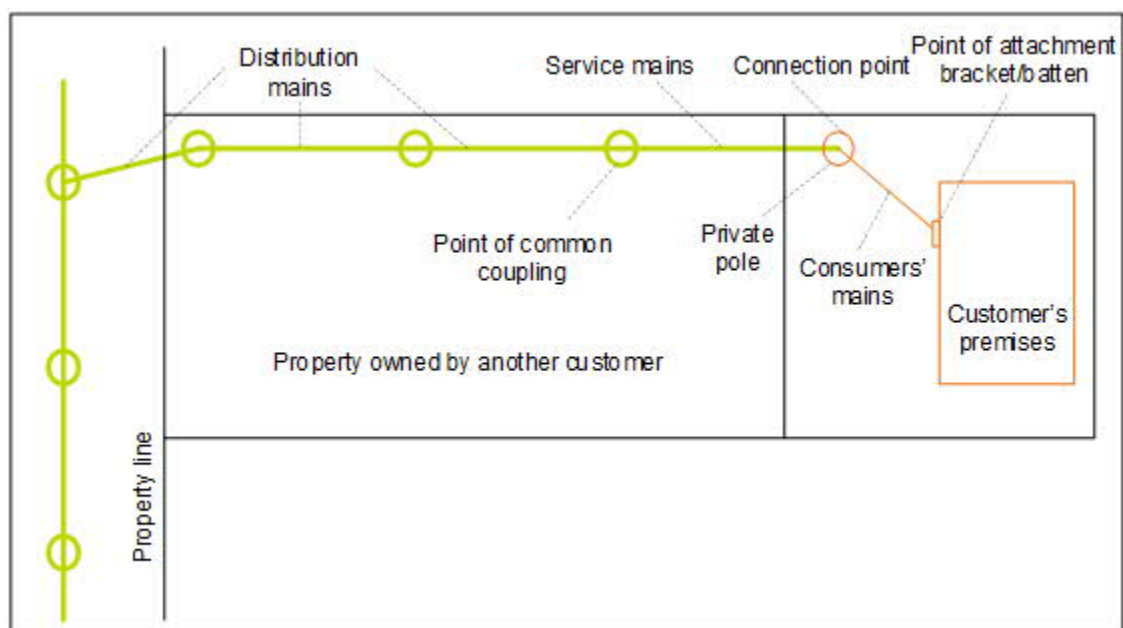


Figure 5 - Customer's premises supplied by overhead service that crosses another property

5.6 A number of separate customers on separate lots supplied from low voltage distribution mains traversing private property (Figure 6)

The general principle applied is that Endeavour Energy considers that overhead mains supplying more than one customer are distribution mains, unless a specific contrary arrangement has been implemented (refer to clause 4.4.2).

Other examples include internal reticulation installed by a high voltage customer, or premises under community title where there is a documented agreement that the community owns and maintains the internal reticulation.

a) Responsibility of Endeavour Energy:

- Maintenance of the distribution mains and overhead service mains.
- Inspection of vegetation clearances to all the overhead lines and any vegetation removal that may be required to maintain clearances to distribution mains.
- Inspection of vegetation clearances to all the overhead lines and any vegetation removal from neighbouring property that may be required to maintain clearances up to the point where the service mains cross the customer's property boundary, and near service mains where the service mains cross property other than that being supplied, including public land.
- Inspection of any connection between overhead service mains and the consumer's mains.
Note: The service mains and the consumers' mains can be continuous in legacy installations where a physical break has not been established at the connection point.
- Insulators, strain clamps and the like associated with Endeavour Energy's mains only, at each service pole or POA for a direct service to a building.
- Inspection of the service pole.
- Inspection of all overhead mains and inspection of all poles to which overhead mains are attached.

b) Responsibility of customer:

- Maintenance and replacement of all private poles and overhead mains forming part of the customer's electrical installation, including the private service pole.
- Point of attachment bracket and/or wooden batten at customer's premises, including supporting bolts and the connection device, including any mains connection box.
- Mains between attachment bracket and main switchboard/meter box, including the connection for customers no's 1, 3 and 4.
- Each consumer customer is responsible for management of vegetation near service mains and private lines on the property.
- Remainder of customer's electrical installation.

MMI 0021 – Guide to rights and obligations for electricity mains located on private property

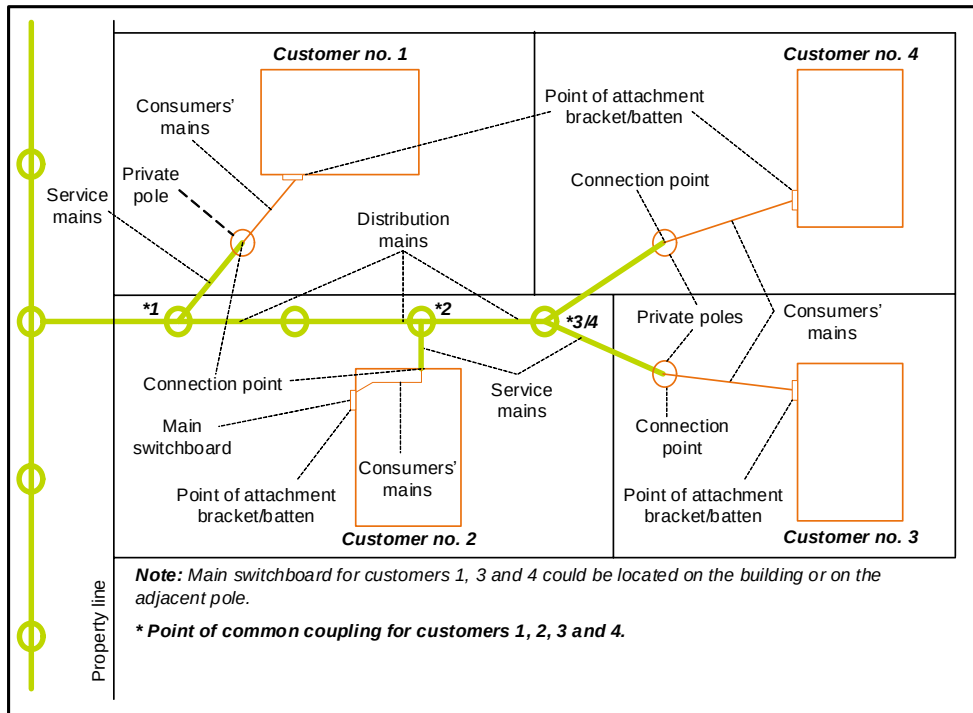


Figure 6 - Number of premises on separate lots, supplied by low voltage distribution service, crossing private property

5.7 Single customer or entity with multiple low voltage installations (Figure 7)

This covers premises with separate metering points, for example, a residence plus a shed and/or pump.

The **connection point** is the connection between the overhead service mains and the consumer's mains at the service pole.

a) Responsibility of Endeavour Energy:

- Maintenance of overhead mains up to the **connection point**.
- Inspection of any connection between overhead service mains and the consumer's mains.
Note: The service mains and the consumers' mains can be continuous in legacy installations where a physical break has not been established at the connection point.
- Inspection of vegetation clearances to all the overhead lines and any vegetation removal that may be required to maintain those clearances up to the point of common coupling, and includes vegetation removal from neighbouring property near service mains where service mains cross any other property other than that being supplied, including public land.
- Insulators, strain clamps and the like associated with Endeavour Energy's mains only, at the service pole.
- Inspection of all poles.

b) Responsibility of customer:

- Consumer's mains and sub-mains from the **connection point** to main switchboards/meter boxes.
- All private poles including first service pole.
- Point of attachment bracket and/or wooden batten at customer's premises, including supporting bolts and **the connection device, including any** mains connection box.
- Remainder of customer's electrical installation.
- Management of vegetation near service mains and any private overhead lines extending beyond the **connection point**.

MMI 0021 – Guide to rights and obligations for electricity mains located on private property

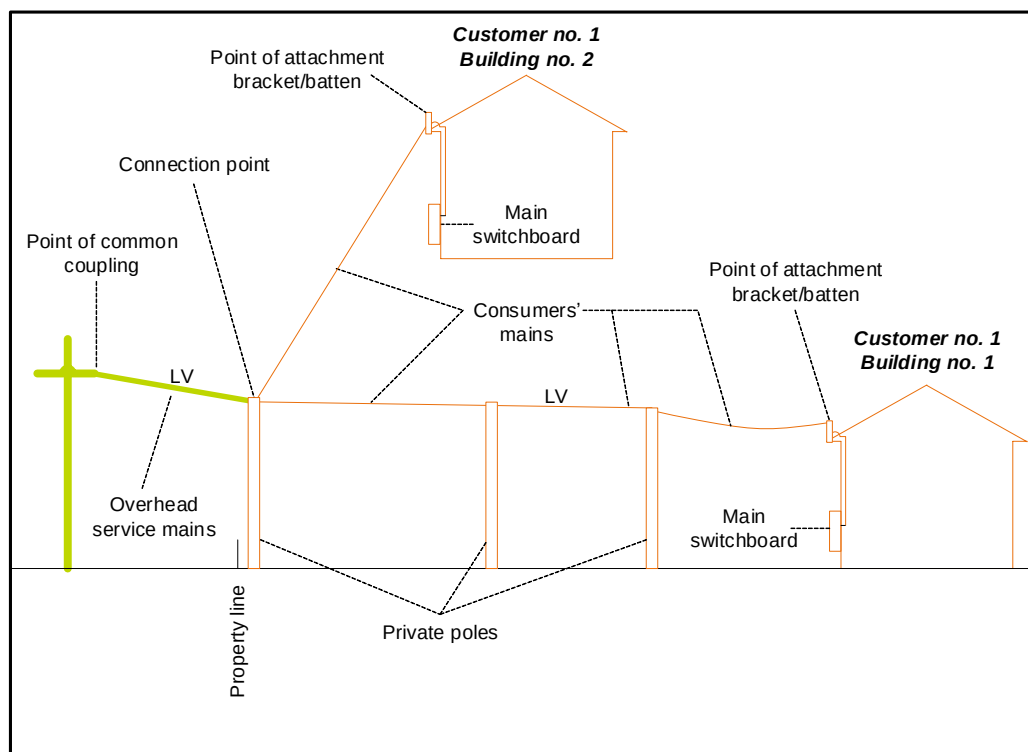


Figure 7 - Single LV Customer with multiple installations

5.8 Low voltage customer with remote metering point (Figure 8)

The **connection point** is the connection between the overhead service mains and the consumer's mains to the main switchboard.

a) Responsibility of Endeavour Energy:

- Maintenance of overhead mains from the point of common coupling up to the **connection point** on the service pole (metering-point).
- Insulators, strain clamps and the like associated with Endeavour Energy's mains only, at the **connection point** pole.
- Inspection of all overhead mains and inspection of all poles to which overhead mains are attached.
- The pole at the **connection point**.
- Inspection of vegetation clearances from the overhead service mains for their entire length, and the removal of any vegetation from neighbouring property that may be required to maintain clearances near the overhead service mains where the service mains cross any other property other than that being supplied, including public land.

b) Responsibility of customer:

- Consumer's mains between Endeavour Energy service mains and main switchboard.
- Main switchboard.
- Maintenance of mains between metering point and rest of electrical installation.
- Management of any removal of vegetation that may be required to maintain clearances from aerial consumer mains or sub-mains on the property being supplied.
- Point of attachment bracket and/or wooden batten at customer's premises, including supporting bolts and the connection device, including any mains connection box and the pole located outside of the private property.
- Remainder of customer's electrical installation.

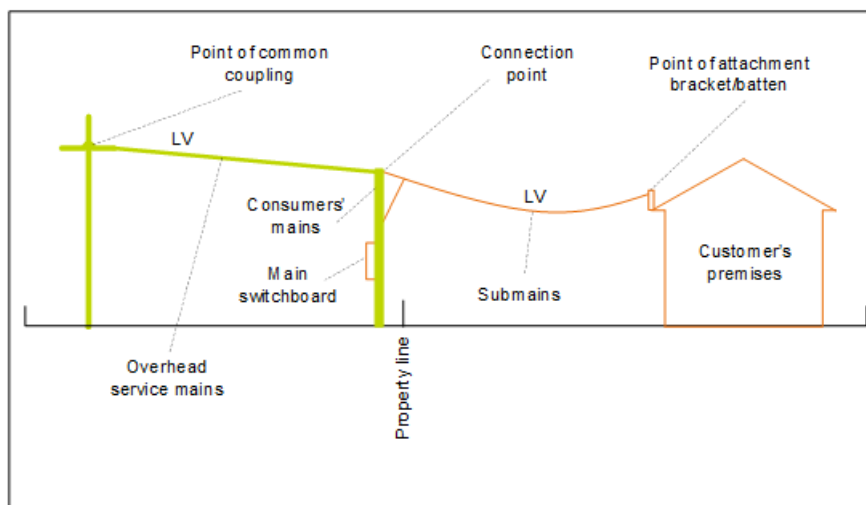


Figure 8 - LV Customer with remote metering point

5.9 High voltage customers - HVC (Figure 9)

The **connection point** is the connection between the overhead high voltage mains and the high voltage metering unit.

a) Responsibility of Endeavour Energy:

- Maintenance of overhead HV mains up to the agreed **connection point** (as defined in the HV Operating Agreement).
- Inspection of poles and mains up to the HV protection point.
- Management of vegetation relating to HV mains up to the **agreed connection point**.

b) Responsibility of customer:

- HV metering unit.
- Metering point pole.
- Main switchboard.
- Mains between metering unit and rest of installation (including inspection and maintenance of all poles beyond the HV protection point).
- All substations and associated switchgear.
- All LV mains.
- Point of attachment bracket and/or wooden batten at customer's premises, including supporting bolts and mains connection box.
- Management of vegetation relating to all mains from the **connection point**.

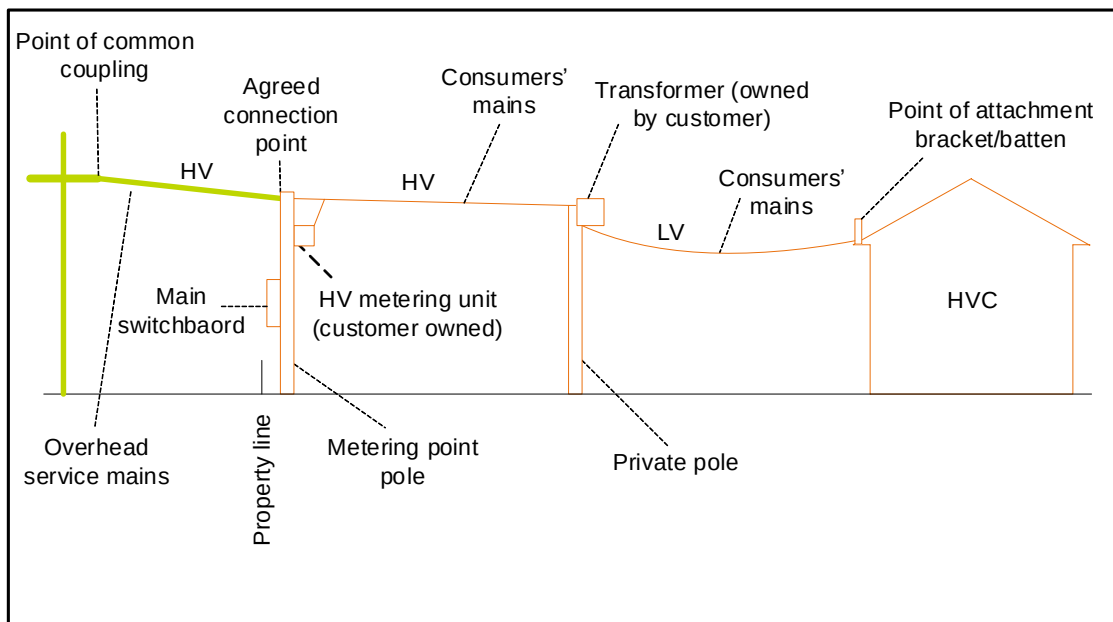


Figure 9 - High voltage customer (HVC) installation

5.10 Overhead low voltage service to underground-to-overhead (UG/OH) service pole (Figure 10)

The connection point is the connection between the overhead service mains and the consumer's mains at the underground-to-overhead (UG/OH) pole.

a) Responsibility of Endeavour Energy:

- Maintenance of overhead service mains from the point of common coupling to the connection point at the UG/OH pole.
- Inspection of the connection between overhead service mains and underground consumers' mains.
- Inspection of vegetation clearances from the overhead service mains for their entire length, and the removal of any vegetation on neighbouring property that may be required to maintain clearances near the overhead service mains where the service mains cross any other property other than that being supplied, including public land.
- Maintenance of insulators, strain clamps, and the like associated with Endeavour Energy's service mains only, at UG/OH pole.

Note: Endeavour Energy will inspect the UG/OH pole, but any subsequent maintenance is the customer's responsibility.

b) Responsibility of customer:

- Management of vegetation on the customer's property.
- UG/OH pole (private pole).
- Underground consumer's mains or sub-mains (if the main switchboard is located on the pole) to the customer's premises, and conduits containing service mains. Also the connection device between the service mains and the consumer mains.
- Main switchboard/meter box.
- Remainder of customer's electrical installation.

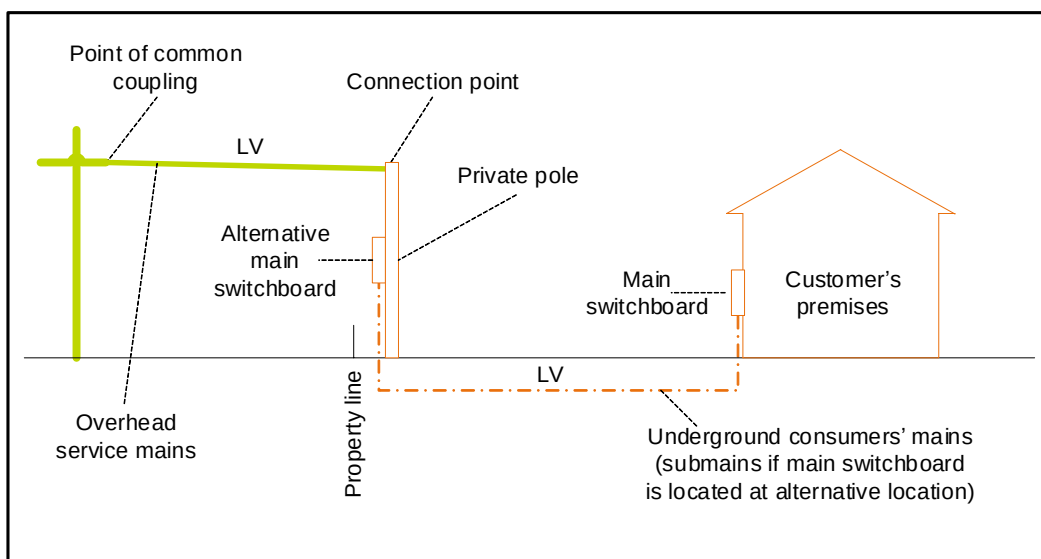


Figure 10 - Overhead service to UGOH service pole

5.11 Low voltage underground service - older style (Figure 11)

The **connection point** is the connection between the underground service mains and the underground consumer's mains, generally located just inside the front property line.

a) Responsibility of Endeavour Energy:

- Maintenance of underground service mains and the conduit containing the service mains from distribution pillar/column to connection to the underground consumer's mains.
- Maintenance of the connection between Endeavour Energy underground service mains and the underground consumer's mains (provided that ground level has not been significantly altered since original installation).

b) Responsibility of customer:

- Underground consumer's mains and the conduit containing the consumer's mains to the customer's premises.
- Main switchboard/meter box.
- Remainder of customer's electrical installation.

Note: It is always the customer's responsibility to provide access to the **connection point** where this point is located within the customer's property. Where customers wish to install improvements (such as gardens, concrete driveways and stone retaining walls), due allowance should be made for future access to the **connection point**. Under some circumstances, and at the customer's expense, a new **connection point** may be established clear of surface improvements.

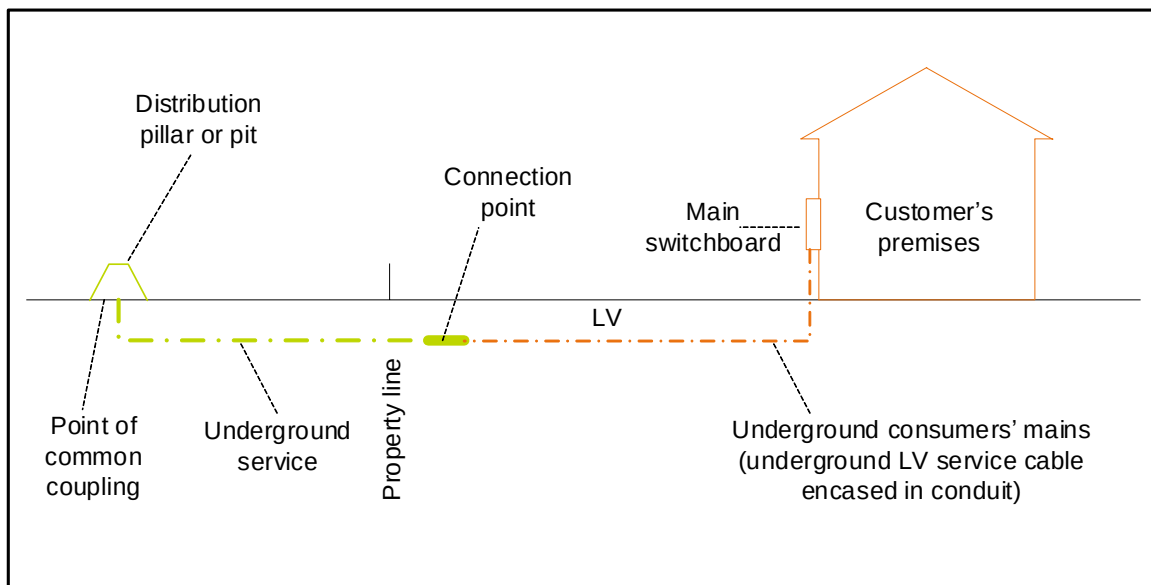


Figure 11 - LV underground service (older style)

5.12 Low voltage underground service - current style (Figure 12)

The **connection point** is the connection between the underground service mains and the customer's main switchboard (generally service fuses or active links).

a) Responsibility of Endeavour Energy:

- Maintenance of the entire length of underground service mains, and the conduit containing the service mains **which is not located** on the customer's property.
- Inspection of the connection between service mains and consumers' **installation at the connection device, located at the connection point.**

b) Responsibility of customer:

- Main switchboard/meter box.
- Maintenance of the conduit containing the service mains on the customer's property.
- If conduits are not provided, responsibility for ground surface restoration following maintenance or replacement of underground service mains on private property.
- Remainder of customer's electrical installation.

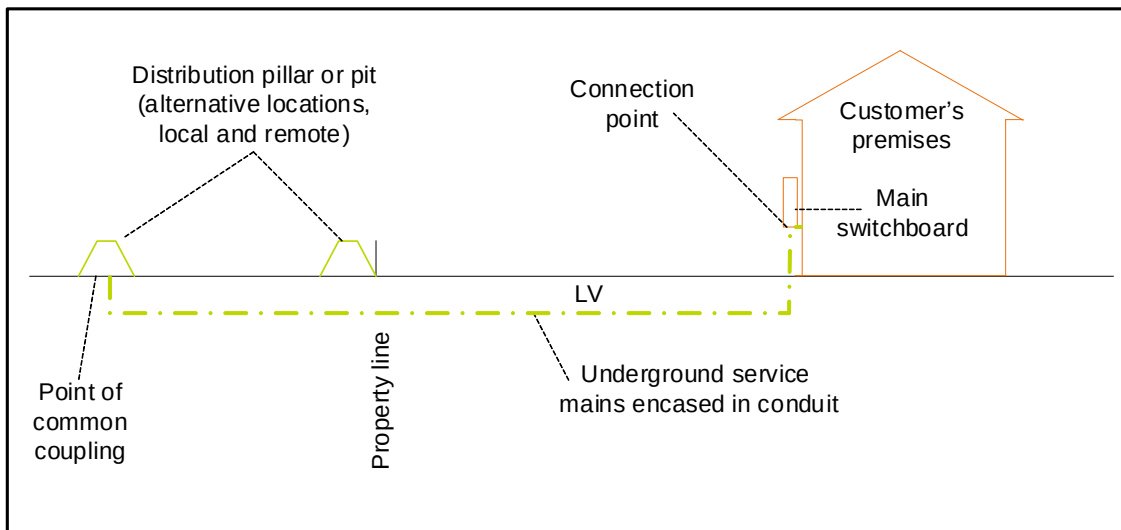


Figure 12 - LV underground service

5.13 Underground service direct from Endeavour Energy overhead mains (Figure 13)

The connection point is the connection between the underground service mains and the customer's main switchboard (generally service fuses or active links).

a) Responsibility of Endeavour Energy:

- Maintenance of the entire length of the underground service mains, and the conduit containing the service mains which is not located on the customer's property.
- Inspection of the connection between service mains and consumers' installation at the connection device, located at the connection point.

b) Responsibility of customer:

- Main switchboard/meter box.
- Maintenance of the conduit containing the underground service mains on the customer's property.
- If conduits are not provided, responsibility for ground surface restoration following maintenance or replacement of underground service mains on private property.
- Remainder of customer's electrical installation.

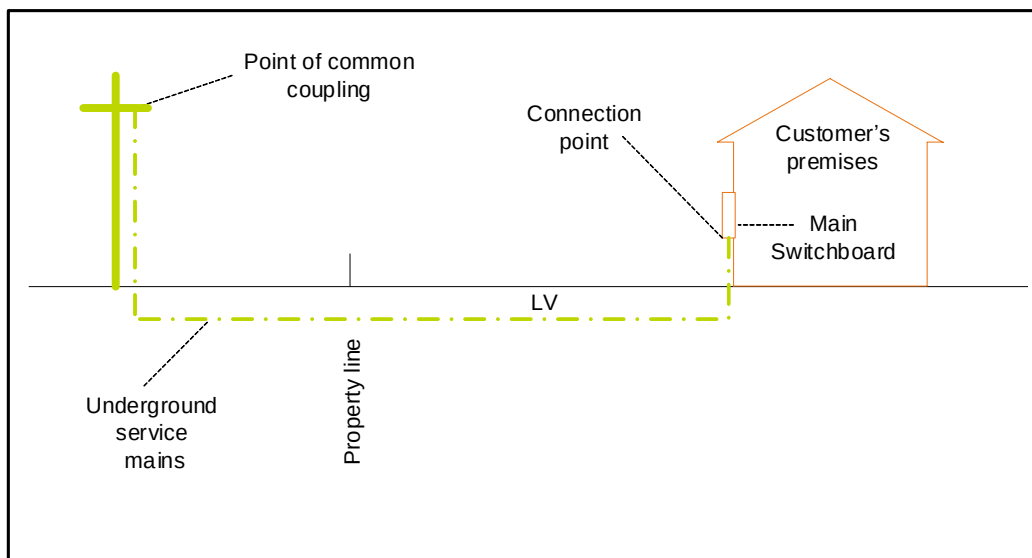


Figure 13 - Underground LV service direct from overhead mains

5.14 Underground service direct from Endeavour Energy padmount substation on the relevant land (Figure 14)

The connection point is at the substation LV terminals. The point of common coupling is any other LV switchgear terminals within the substation or may be on the HV network where LV loads could affect the power quality of other LV connections.

a) Responsibility of Endeavour Energy:

- Inspection and maintenance of the substation
- Maintenance of the HV conduit and cable into the substation
- Inspection of the connection between consumers' mains and the LV switchgear within the substation.

b) Responsibility of customer:

- Main switchboard/meter box.
- Maintenance of the underground consumers' mains on the customer's property, including conduits if installed.
- If conduits are not provided, responsibility for ground surface restoration following maintenance or replacement of underground consumers' mains on private property.
- Remainder of customer's electrical installation.

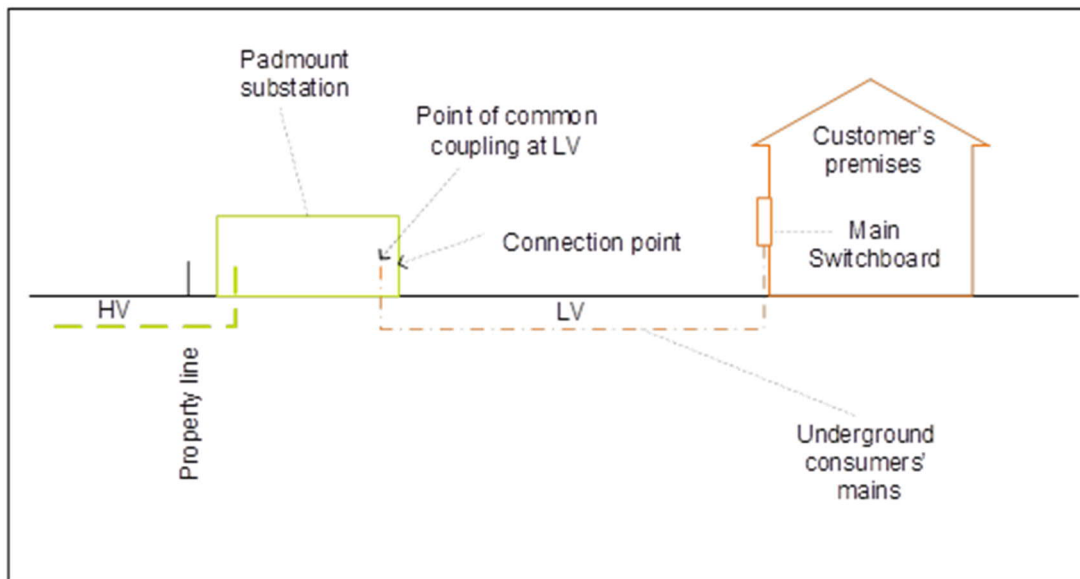


Figure 14 - Underground LV connection direct from padmount substation

6 Authorities and Responsibilities

General Manager Asset Management has the authority and responsibility for approving this Standard.

Manager Asset Standards and Design has the authority and responsibility for reviewing this instruction and making recommendations to the **General Manager Asset Management**.

Manager Network Connections has the authority and responsibility for reviewing this instruction and making recommendations to the **Manager Asset Standards and Design**.

Mains Assets Manager has the authority and responsibility for updating this instruction in accordance with Company Policy and Procedures.

Vegetation Control Manager has the authority and responsibility for managing vegetation impacting on electricity mains located on private property in accordance with this instruction.

OLI/GLI Manager has the authority and responsibility for managing defects on electricity mains located on private property in accordance with this instruction.

Endeavour Energy employees and/or contractors have the authority and responsibility for:

- maintaining and/or repairing all assets up to the defined **connection point**;
- carrying out the requirements of this instruction; and
- seeking clarification of this instruction, where necessary, from Endeavour Energy.

Produced by Asset Standards and Design Branch

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