



## **Network Asset Relocation and Undergrounding Policy Guidelines**

June 2010



## SCOPE

This publication outlines Ausgrid's policy for dealing with requests from local councils, resident groups or any other party to relocate its existing distribution assets, including requests to underground its existing bare overhead assets or to replace them with insulated overhead cables.

## INQUIRIES

For all inquiries in relation to this policy, refer to the Ausgrid contact details for the relevant area on pages 9 & 10 of this document.

## WARNING

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

Ausgrid may amend this document at any time without notice.

Any cost estimates provided in this document are indicative only.

## DOCUMENT AND AMENDMENT HISTORY

Version no.	Publish Date	Author	Summary of Changes
0.9	August 2005	Alex Miller	Circulated widely to key internal stakeholders.
1.0	October 2005	Alex Miller	Version for Network Management approval. Includes comments from key internal stakeholders.
1.1	November 2005	Alex Miller	Version approved by Network Management Group, November 2005, incorporating changes discussed at meeting on 13 October 2005.
1.2	January 2006	Alex Miller	Version for planned approval from Network Executive.
1.3	March 2006	Alex Miller	Including comments from Network Alliance Manager and Strategic & Executive Services Manager.
1.4	May 2006	Alex Miller	Approved for public release without alteration by Network Planning Sub-committee.
1.5	December 2008	Tony Markus	Updated version, to reflect latest market conditions.
1.6	1 June 2010	Tony Markus	Cost sharing provisions have been removed and minor editorial amendments have been made throughout the document. The policy now also applies to relocations or undergrounding at any voltage.

The latest version of this document can be freely downloaded from [www.ausgrid.com.au](http://www.ausgrid.com.au)

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# 1 Purpose

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Ausgrid receives requests from customers to relocate its existing distribution assets, place its overhead power lines underground, or replace its bare overhead power lines with insulated overhead cables. The purpose of this document is to outline Ausgrid's policy for dealing with these requests from local councils, resident groups or any other party (referred to hereafter as "the proponent"). In this document, the terms "asset relocation" or "relocation" will be used to denote either the re-positioning of an asset or the replacement of an overhead power line with either underground cables or insulated overhead cables.

# 2 Overview

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The features of Ausgrid's policy are:

- Ausgrid will consider all requests for relocation of its distribution assets and will determine each request on a case by case basis in accordance with this policy,
- If Ausgrid agrees to the request, proponents will be required to meet the full cost of the works,
- Relocation works consist of a design component and a construction component,
- Generally, the construction component will be treated as contestable. (Ausgrid's policy on the contestability of these projects is set out in section 4),
- The proponent will be required to engage a Level 1 Accredited Service Provider (ASP) to construct the works in accordance with Ausgrid's contestability guidelines,
- If Ausgrid decides that the design is to be regarded as contestable, the proponent will be required to engage a Level 3 ASP to design the works,
- Ausgrid may choose to carry out the design of the distribution works and charge a fee to recover the cost incurred. Ausgrid will always carry out the design of small relocation projects, and
- In some circumstances Ausgrid may choose to prepare the design and carry out the construction and will charge a fee to recover the full cost of design and construction (refer to section 5.2 for the pricing principles that apply in this regard).

Whilst Ausgrid will endeavour to agree to existing network asset relocations, in some circumstances it may be necessary to refuse relocation requests on safety or operational grounds. For further details see section 5.1.

Ausgrid is a regulated monopoly business and there is no scope for its network and general customer base to subsidise or contribute financially to projects where the benefits accrue solely to the direct beneficiaries of relocation works.

Proponents need to consider that construction works may vary significantly from location to location, depending on a range of factors including local network design constraints, geography, soil type, access, existence of other utility infrastructure and local traffic conditions. Therefore, actual costs and the specific approach adopted may vary significantly from project to project.

Ausgrid has decided to regard most asset relocation work as contestable, on the basis outlined in section 4. However, where the work cannot be made contestable, proponents should be aware that Ausgrid gives priority to network planning, augmentation and maintenance activities needed to maintain system reliability. Hence, Ausgrid will endeavour to provide realistic assessments of its capacity to undertake relocation projects and whether it is feasible to meet the proponent's timetable.

### 3 Undergrounding – General Principles

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Ausgrid's policy is to require cables to be placed underground at the developer's cost in new developments and urban subdivisions. All new developments and urban subdivisions must also meet the requirements of the relevant local council.

Ausgrid's document ES 10 *Requirements for Electricity Connection to Developments*, which is available on Ausgrid's website [www.ausgrid.com.au](http://www.ausgrid.com.au) includes the following stipulations relevant to undergrounding existing assets:

- Extensions to or relocations of the high voltage (11kV) network in urban areas shall be of underground construction with at least one spare conduit. Exceptions may be authorised in special cases, such as in flood prone areas and for minor extensions (nominally less than 100 metres), relocations or upgrading existing overhead network construction subject to a satisfactory evaluation of environmental impacts,
- All low voltage service mains in urban areas shall be underground in areas supplied by underground low voltage distribution mains, and
- New premises located in an urban overhead distribution mains area must make provision for (i.e. be capable of) connection to future underground distribution mains.

Where existing overhead assets are placed underground, street poles or columns are still required for the purpose of street lighting, hence not all street poles and columns can be removed as part of an undergrounding project. In addition, undergrounding will also normally require new street furniture in the form of above ground low voltage pillars for the connection of customers' new underground service cables to the new underground low voltage distribution cables.

The undergrounding of distribution lines is around five to seven times more costly than installing overhead cables, although it should be noted that this varies significantly between areas depending on ground conditions.

## 4 Contestability of Design and Construction

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Once Ausgrid has determined that the relocation is acceptable in principle it must also determine whether the design and construction will be contestable, i.e. whether the design and construction can be carried out by a person other than Ausgrid.

While Ausgrid is not obliged under the Electricity Supply Act or its regulatory determinations to make asset relocation works (such as the undergrounding of existing aerial mains) a contestable service, it has decided that such works will in general be treated as contestable.

It is important to note that relocation works and the undergrounding of existing overhead lines in particular usually affects the supply to adjacent customers as well as those for whom the undergrounding is being provided, and can involve significant technical and safety issues.

In determining whether a project should be made contestable, Ausgrid will need to ensure that the following conditions are satisfied:

- There will be no adverse impacts on adjacent customers (those customers not a party to the proposal) as a result of changes to supply arrangements; and
- Safety, technical, network performance or maintenance issues can be properly assessed and managed.

In some circumstances Ausgrid may determine that the associated risks are too great to allow the project to be contestable. In any event the design component of small relocation projects will not be made contestable.

The contestability process to be followed is based on Ausgrid's document ES 10 *Requirements for Electricity Connection to Developments* and is summarised below.

Ausgrid will on receipt of the proposal and adequate supporting information:

- Provide necessary Design Information to assist with the contestable design process (if the design is made contestable);
- Check and certify the design to ensure it has been completed in accordance with the Design Information, technical standards and to ensure there are no security, safety, technical or reliability issues;
- Require the proponent and (for large jobs - the proponents chosen ASP) to enter into an appropriate agreement similar to Ausgrid's document ES 9 *Agreement for Connection of Developments* modified to be relevant to asset relocation rather than customer connection;
- Require the proponent to make the arrangements with other interested parties as set out elsewhere in this document; and
- Conduct site inspections at various stages of the construction phase and facilitate the commissioning of the project.

Ausgrid will charge a fee to recover the cost of providing these facilitating services on a cost recovery basis

## 5 Ausgrid's Commitments and Terms and Conditions

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### 5.1 A Particular Asset Relocation Proposal may not be Approved

At the outset, proponents should be aware that some relocation proposals may not be acceptable to Ausgrid. The safe and reliable operation of the network is a key obligation under Ausgrid's licence to operate as a Distribution Network Service Provider; consequently, any asset relocation proposal that conflicts with these obligations will be refused. After evaluating a specific request and based on a consideration of risk and feasibility, Ausgrid will advise the proponent whether or not it is possible to undertake the proposed project.

Note: Although Ausgrid may agree to a relocation request, it may decide for the reasons of safety and reliability, to carry out the work itself rather than allow it to be contestable. For further details see section 4.

### 5.2 Pricing Principles Applicable when the Work is not made Contestable

Fees charged by Ausgrid for the design or construction of customer requested asset relocation works where this work cannot be made contestable for safety or other reasons are currently based on well recognised pricing principles. These works are classified as unregulated distribution services under the Australian Energy Regulator (AER) regulatory framework and will be subject to the pricing principles previously applied to excluded distribution services in the Independent Pricing and Regulatory Tribunal (IPART) Rule 2004/1 Regulation of Excluded Distribution Services. These pricing principles remain applicable to these services now classified as unregulated distribution services under the Transitional Rules applicable for the 2009-2014 regulatory period.

Information on these pricing principles can be found on Ausgrid's website.

### 5.3 Stages of a Relocation Project

There are generally three main stages to a project:

#### 5.3.1 Initial Assessment

The proponent will be required to fund an initial assessment and indicative cost estimate of the project by Ausgrid in order to determine its broad requirements, scope and overall feasibility. In most cases the initial assessment work will require substantial time to prepare.

Ausgrid usually charges a standard fee of **\$1,700** to process an initial request, but the fee may vary depending on the scale of the proposed project.

#### 5.3.2 Detailed Design

If the initial assessment and indicative estimate are acceptable and a decision is made to proceed with the project, the process in section 4 must be followed for contestable components of the project.

If design is **not contestable** it will be undertaken by the relevant staff in Ausgrid's local Customer Operations office. Ausgrid charges approximately **\$130 per hour** to perform this service. (This is a cost reflective rate). The total design cost will vary depending on the complexity of the job, but usually, small projects involve at least 40 hours work and 200 hours or more are required to design a large-scale project. The design charge covers site visits, searches, service undergrounding investigations, design plan and contract and preparation of an Environmental Impact Assessment, which is a mandatory requirement for Ausgrid under the planning laws.



### 5.3.3 Construction

The construction phase typically consists of the following broad cost components:

- Trenching and boring;
- Installation of assets;
- Service connections;
- Roadway/footpath reinstatement;
- Relocation of streetlights to dedicated street light poles or standards;
- Reconnection and possible relocation of substations;
- Dismantling and relocation and/or removal/disposal of overhead infrastructure; and
- Relocation of other utilities' assets.

#### (a) Relocation of Low Voltage and/or High Voltage Overhead Assets

Construction costs can vary significantly depending on site conditions and the extent of the network required to be relocated. Undergrounding of low voltage overhead assets (below 1,000 Volts) for instance, usually involves a minimum of two to three spans of an overhead line section. It is more expensive to underground both low and high voltage overhead assets.

Indicative costs for undergrounding small sections of the network, taken from Ausgrid's website, are shown in Table 1 below. These are Ausgrid's own indicative costs and it should be understood that: they are given here as no more than a general guide for information purposes; each job is priced according to local conditions; and for contestable jobs, the cost to the proponent will be the cost quoted by the proponent's chosen ASP, as well as fees and charges charged by Ausgrid to facilitate the work and to carry out any non-contestable work as described in section 6.

**Table 1: Indicative low voltage undergrounding costs from Ausgrid's website**

Option	Indicative Costs	Comment
Replacing overhead wiring with underground cables	\$56,000 - \$80,000 per span. (Typically 8 customers per span at \$7,000 - \$10,000 per customer)	Costs may vary significantly depending on location

In a typical suburban street, the indicative costs per span would underground the wires in front of approximately eight houses. The indicative costs represent the estimated costs taking into account the cost of new equipment and the cost to reinstate footpaths and roadways. (As noted, the actual costs will vary widely from location to location).

It should be noted that this indicative cost makes no allowance for:

- Unusual ground/site conditions;
- The cost of undergrounding the house service line (the wire from the street to the house); and
- Reconfiguration of any street lighting infrastructure.

Other factors that may result in additional costs to relocate network assets include:

- Traffic control on main roads;
- Reinstatement of footpaths (varies between local councils);
- Whether telecommunications cables are attached to the power poles;
- Within the proponent's specific area, the cost of undergrounding services may also be affected by the necessity to replace or relocate meter boards, access to narrow footways and large trees with extensively compacted root systems; and
- Excavation around significant trees.

Ausgrid will work with the proponent to develop a solution that optimises rollout costs and future maintenance costs.

**(b) House service lines**

The cost of undergrounding house service lines varies widely depending on the ground conditions and layout.

**(c) Relocation of other assets**

Where the project involves the relocation of additional assets (e.g. a pole transformer or the infrastructure of other utilities) there will be further significant additional cost.

**(d) Additional technical and safety considerations**

Technical and safety considerations may require more extensive ancillary work than may be requested or apparent at first. In particular, the introduction of short sections of high voltage underground cables which may eventuate from undergrounding projects could lead to earth potential rise problems.

**(e) Write-off of existing assets**

Where a relocation project requested by a proponent involves the early retirement and write-off of an existing asset, Ausgrid will generally recover this economic cost from the proponent.

## 5.4 Terms and Conditions

Customers are required to enter into standard commercial contracts for the provision of services provided by an ASP and/or by Ausgrid. These contracts include Ausgrid's terms and conditions for the project.

If the works are not contestable, Ausgrid provides written quotations to customers on request and these are generally valid for a period of one month. Customers must provide a signed 'Acceptance of Offer' (thereby constituting a contract) before the project can proceed. Written quotations for the construction phase can only be prepared after the proponent has paid for the design component of the project. A fixed price quote will include a 10% contingency allowance on the total direct labour charges.

### 5.4.1 Form of Payment

In most cases, payment for a project will be in the form of a fixed fee. The applicable form of payment will depend on contractual conditions, whether the project is contestable and the degree of uncertainty associated with the project.

## 5.5 Costs

Relocation projects are currently classified by the economic regulator as customer specific services and in accordance with that classification, it is standard Ausgrid policy to require that all project costs are fully borne by the proponent.

## 5.6 Telecommunications Infrastructure

Where overhead power lines are shared with telecommunications infrastructure such as broadband cables, indicative costs may be significantly higher due to the need to also relocate the telecommunications cables.

If a telecommunications company's cables are present on Ausgrid's poles, legal and safety requirements make it essential that these cables are removed before overhead mains and poles are removed. Ausgrid has no specific authority to force telecommunications companies to agree to the removal of their cables. The proponent will need to negotiate with the relevant telecommunications company to gain their approval to remove their existing overhead construction and provide written confirmation of this approval to Ausgrid.

## 5.7 Cost Reduction Opportunities

Opportunities for cost savings may arise in certain relocation projects. Such opportunities include situations where underground trenches are already required for sewerage, gas, or other utility works in the area, thereby enabling the undergrounding of electricity services at a lower incremental cost (e.g. reduced excavation and reinstatement costs) and with less disruption to residents. The potential for undergrounding of electricity supply to take advantage of such situations will be assessed on a case by case basis, after carefully considering policy differences between the utilities involved (e.g. distance from houses, depth of trenches etc.).

Although Ausgrid is able to participate in such arrangements, the proponent would need to assume responsibility for coordinating the process.

## 5.8 Service Connections

It is the responsibility of the proponent to make suitable arrangements (including funding) with individual customers to organise alterations to their individual service connections if they are affected by the proposal. Individual customer connections are a contestable service that may be undertaken by an ASP.

## 6 Proponent Responsibilities

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The proponent shall be responsible for the following:

- **Identify exact assets to be relocated** – in order to provide an accurate cost estimate (if requested) and assess all planning and safety requirements, Ausgrid needs to be given accurate information on the actual network assets to be relocated or undergrounded. Ausgrid may not agree to the full extent of the individual requests or, conversely, it may specify an extension of the requested works due to technical and safety considerations,
- **Write to Ausgrid regarding the specific relocation proposals** – the proponent should direct all correspondence to the local Ausgrid Customer Operations office,
- **Formally accept quotes provided by Ausgrid for work which is not made contestable** (this applies in the event that Ausgrid determines that all or a portion of the work will not be contestable). For the project to proceed, the proponent must formally accept Ausgrid's quote for all non-contestable components. Following acceptance of a cost estimate from Ausgrid in respect of the actual work, the proponent will be issued with the relevant standard contract for the construction phase,
- **Comply with the contestability procedures outlined in section 4 for projects that are contestable,**
- **Engage an ASP to carry out the contestable works**
- **Obtain permission from all affected parties to the proposal** - it is the proponent's responsibility to:
  - obtain written agreement to the relocation from all affected parties, including all residents whose service cables will need to be undergrounded as a result of the proposal; and
  - advise Ausgrid when this has been done.

The proponent should be aware that this is a prerequisite to the project proceeding as planned,

- **Liaise with telecommunications companies** – the proponent will need to negotiate with the relevant telecommunications companies to gain approval to remove their existing overhead construction and provide written confirmation of this approval to Ausgrid,
- **Liaise with other utilities where cost saving opportunities may arise** – as outlined above, where underground trenches are already required for work conducted by other utilities, the proponent shall coordinate the process of investigating cost savings opportunities, and
- **Single point of contact to be responsible for payment to Ausgrid for services performed** – for any project, Ausgrid will only deal with a single entity, who must assume responsibility for payment.

## 7 Suggested Way Forward

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For proponents interested in pursuing a specific relocation project, Figure 1 provides a broad overview of the next steps.

Ausgrid will work with the proponent to assist it in achieving its objectives, subject to commercial considerations, availability of staff and network planning requirements and priorities.

Proponents who have any further queries, or wish to lodge a formal request should contact the planning engineer from Ausgrid's local Customer Operations region in the first instance. For more information, please refer to the relevant local Customer Operations office (contact details shown below).

### **TUGGERAH**

Serving customers in the NSW Central Coast area.

Office Location: Unit 1, 14 Pioneer Ave, Tuggerah  
 Postal Address: PO Box 3744, Tuggerah NSW 2259  
 Office Hours: 7.30am to 4.00pm (Monday to Friday).

#### *Contact Details*

Customer Inquiries (02) 4399 8000  
 General Facsimile (02) 4399 8001

### **HORNSBY**

Serving customers from south of the Hawkesbury River to the north side of Sydney Harbour and the Parramatta River.

Office Location: Building 2, 51-59 Bridge Rd near Sherbrook Rd, Hornsby  
 Postal Address: GPO Box 4009, Sydney NSW 2001  
 Office Hours: 8.00am to 4.30pm (Monday to Friday).

#### *Contact Details*

Customer Inquiries (02) 9477 8201  
 General Facsimile (02) 9477 8207

### **MUSWELLBROOK**

Serving customers in the Muswellbrook, Scone, Merriwa and Singleton areas.

Office Location: 41 Thomas Mitchell Dr, Muswellbrook  
 Postal Address: PO Box 196 Muswellbrook 2333  
 Office Hours: 7.00am to 3.30pm (Monday to Friday).

#### *Contact Details*

Customer Inquiries (02) 6542 9017  
 General Facsimile (02) 6542 9037

**OATLEY**

Serving customers in the Inner West and Southern Suburbs of Sydney

Office Location: 33-45 Judd Street, Oatley (Building No. 1),  
south western corner of the ground floor of the Administration  
Building

Postal Address: GPO Box 4009 Sydney NSW 2001

Office Hours: 7.30am to 4.00pm (Monday to Friday).

*Contact Details*

Customer Inquiries	(02) 9585 5774
General Facsimile	(02) 9585 5817

**WALLSEND**

Serving customers in the Cessnock, Lake Macquarie, Newcastle, Maitland and Port Stephens areas.

Office Location: 145 Newcastle Road, Wallsend

Postal Address: PO Box 487, Newcastle NSW 2300

Office Hours: 7.30am to 4.00pm (Monday to Friday).

*Contact Details*

Customer Inquiries	(02) 4951 9930
General Facsimile	(02) 4951 9934

**SYDNEY CITY**

Serving customers in the Sydney CBD and eastern suburbs within the local government areas of City of Sydney, Woollahra, Waverley, Marrickville, Randwick and Botany.

Office Location: 130 Joynton Ave, Zetland (Building No. 4)

Postal Address: GPO Box 4009 Sydney NSW 2001

Office Hours: 8.00am to 4.30pm (Monday to Friday).

*Contact Details*

Customer Inquiries	(02) 9663 9332
General Facsimile	(02) 9663 9499

## 8 Figure 1: Overview of Way Forward for Proponent Relocation Requests

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