



ES 10

Requirements for Electricity Connection to Developments

DECEMBER 2008

Amendments included from CIA 1357 Nov 2010, CIA 1360 Feb 2011, CIA 1364 Jun 2011 & CIA 1369 Apr 2012



SCOPE

This publication contains essential information and requirements relevant to developers and customers requiring a new or altered electricity connection to their development.

WARNING

It is illegal for persons other than licensed electricians, or persons authorised by legislation, to work on the fixed wiring of any electrical installation.

Penalties for conviction are severe.

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

Ausgrid may amend this document at any time.

DOCUMENT AND AMENDMENT HISTORY

Issue No.	Date	Approved by	Summary of Changes
1	October 1993	Manager – Supply Policy	
2	October 1997	Manager – Supply Policy	<ul style="list-style-type: none"> • Title changed • Requirements extended to cover all developments, not just URD
3	March 2006	Manager - Connection Policy Coordination	<ul style="list-style-type: none"> • Title changed • Incorporates and supersedes: <ul style="list-style-type: none"> – CIA 1070, 26/7/99 – CIA 1200, 13/9/01 – CIA 1172, 30/1/03 – CIA 1276A, 20/11/03 – CIA 1281, 15/4/04 – CIA 1261C, 26/8/04 • General review and update • More comprehensive Community Title requirements • More comprehensive warranty requirements for contestable works • More comprehensive survey plan requirements for new developments • Return of free issue materials requirements • Incorporates CIA 1307A
4	December 2008	M - CPC	<ol style="list-style-type: none"> 1. Incorporates and supersedes: <ul style="list-style-type: none"> ▪ CIA 1293A, 8/9/06 ▪ CIA 1307A, 9/8/06 ▪ CIA 1314, 20/10/06 ▪ CIA 1315A, 5/9/07 ▪ CIA 1320B, 6/9/07 ▪ CIA 1325, 28/9/07 2. Contestability of asset relocation works, refer to clause 3.1 3. New pit cleaning provisions, refer to clause 11.15 4. Easements for kiosks in Community Title developments, refer to clause 10.5 5. Changes to Appendix H, E-type low voltage board 6. General review and update

This document can be freely downloaded from www.ausgrid.com.au

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ES 10

REQUIREMENTS FOR ELECTRICITY CONNECTION TO DEVELOPMENTS

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1 Introduction

This document sets out Ausgrid's general requirements specifically for the provision of electricity connection to the Ausgrid network for all developments (refer to clause 5) under the terms of Ausgrid's Standard Form Customer Connection Contract. These requirements however, may also be used where relevant as a guide for the delivery of contestable asset relocation works, as described in ES 8 and ES 5

A Developer requiring a connection must make an application for connection. Ausgrid will respond with general information on the type of connection, process for connection and responsibilities for costs. Where the developer has to meet the costs of all or a part of the works (the Contestable Works) the developer has the right to choose Accredited Service Providers to design and construct the Contestable Works.

In this document any reference to the Developer means a person who has obtained if necessary, development consent and is either the owner of the development or contractually acting for the owner of the development for its completion.

The applicant for electricity connection (referred to as the 'Developer') is required if necessary to have first lodged a Development Application with the relevant local Council as constituted under the Local Government Act 1993 (referred to as the 'Council').

Ausgrid may vary or add to these Requirements where a development is of a nature that application of these Requirements will not be relevant or appropriate. These Requirements and any additions or alterations to these Requirements for a particular development will be notified in writing to the Developer by Ausgrid and will be considered to be incorporated in and form part of the Agreement (see clause 4) between the Developer and its Accredited Service Provider and Ausgrid.

Information on any issues raised in this document may be discussed at the local Customer Operations office or by telephoning Ausgrid on 13 15 25.

1.1 Supply Voltage

Ausgrid will determine the supply voltage to the development after consideration of the load application and the location within the network. The Developer may request supply at an alternative supply voltage and pay the additional costs involved. Ausgrid will consider but may not be able to accede to such a request.

1.2 Private Generation

The developer must provide full details of any proposed private generation facilities and should refer to the *Service and Installation Rules of NSW* and AS/NZS 3000 Wiring Rules.

If it is intended to operate the private generation in parallel with Ausgrid's network either permanently or for extended periods for any reason, special arrangements and costs apply and the developer will be advised accordingly on application. Larger private generation facilities than those envisaged by the *Service and Installation Rules of NSW* will usually require the applicant to comply with the process detailed in the National Electricity Rules (Chapter 5 and Rule 5.2.5 in particular - refer to the Australian Energy Market Commission website: www.aemc.gov.au/rules.php).

In most cases the applicant for parallel generator connection will also be required to enter into a Standard Generator Connection Agreement with Ausgrid (Refer to Ausgrid's website: www.ausgrid.com.au/energy/ea.nsf/Content/Network+Standard+Generator+Connection+Agreement)

The larger applications will often require complex technical investigations at the applicants cost that can take time and it is advisable to contact Ausgrid as early as possible to avoid delays.

Many of the requirements of ES 10 will continue to apply and reference should also be made to Ausgrid's Network Standard NS 194 *Connection of Embedded Generators*, which deals with technical aspects.

1.3 Customer's Installation

The customer's electrical installation must comply with all of the following (as applicable):

- AS/NZS 3000 Wiring Rules
- Service and Installation Rules of NSW, (consult with Ausgrid for the application of these rules to 132kV installations)
- National Electricity Rules, (of particular relevance to customers supplied at High Voltage (HV), who should consult with Ausgrid on the application of the various rules)
- ES 1 Customer Connection Information
- NS 195 High Voltage Customer Connections (HVCs).

1.4 Reference Documents

- Service and Installation Rules of NSW
- National Electricity Rules
- Ausgrid's Standard Form Customer Connection Contract
- ES 1 Customer Connection Information
- Electricity Network Operation Standards (ENOS)
- ES 3 Metering Installations
- ES 4 Service Provider Authorisation
- ES 5 Charges for Network Miscellaneous and Monopoly Services
- ES 7 Application of Network Use of System Charges
- ES 8 Capital Contributions and Asset Relocation Works Guidelines
- ES 9 Agreement for Electricity Connection of Developments
- ES 9B Agreement for Small Asset Relocation Projects

2 Definitions

Accreditation Scheme

The '*Scheme for the Accreditation of Service Providers to Undertake Contestable Works*' published by the former Electricity Association of New South Wales in accordance with the Electricity Supply (General) Regulation 2001 and administered by the NSW Office of Fair Trading.

Accredited Service Provider (ASP)

A person accredited in accordance with the Accreditation Scheme as a Level 1 ASP (ASP/1) or as an Accredited Designer, refer below.

Note: Ausgrid is an ASP/1; refer to the Office of Fair Trading website for the contact details of all ASP/1s www.fairtrading.nsw.gov.au.

Accredited Designer

A person accredited in accordance with the Accreditation Scheme as a Level 3 ASP (ASP/3) to design the Works.

Note: Ausgrid is an ASP/3; refer to the Office of Fair Trading website for the contact details of all ASP/3s www.fairtrading.nsw.gov.au.

Compliance Officer

An Ausgrid officer, who carries out the following specific functions, to monitor compliance by ASPs with Ausgrid's Contestable Works specifications, standards and safety requirements:

- Inspection and facilitation of Level 1 ASP work and work practices and investigating and recommending ASP corrective/disciplinary processes
- Authorisation and worksite safety compliance auditing of Level 2 ASPs.

Contestable Works

Those works for which the customer is required to meet the cost and for which the Customer may choose the ASP under section 31 of the Electricity Supply Act (NSW) 1995. This also includes contestable asset relocation works.

Linkage Point

The point on the network where the use of the assets changes from being shared to being dedicated to one customer or one group of customers (seeking a new or altered network connection). This point is determined by Ausgrid.

Point of Supply

The point of demarcation at which the Contestable Works are connected to the customer's installation. This point is determined by Ausgrid. The customer's installation (with the possible exception of the metering equipment) is owned and maintained by the customer and is required to comply with AS/NZS 3000 Wiring Rules and to the *Service and Installation Rules of NSW* as relevant.

Service Mains

Overhead or underground mains (not exceeding 600/1000 volts) installed between the customer's Point of Supply and Ausgrid's (street) distribution mains. Refer to the *Service and Installation Rules of NSW*.

Shared Works

Works associated with the connection of electricity to the development, which also benefit or are shared by other existing customers. With the exception of connections to Large Load Customers (refer to clauses 1.3 and 4.2 of ES 8), these Works are not contestable and will be funded by Ausgrid unless otherwise agreed.

3 Costs of Connection Works

3.1 Contestable Works

The principles for determining the responsibility for costs associated with connecting electricity to a development are detailed in ES 8. This is based on the Independent Pricing and Regulatory Tribunal (IPART) Determination No. 1 of 2002 – ‘Capital Contributions and Repayments for Connections to Electricity Distribution Networks in New South Wales’.

The Developer is required to fund as Contestable Works any works which are dedicated to the development. Ausgrid will determine the extent of the Contestable Works (through its determination of the works which will be dedicated to the development and which in turn must be funded by the Developer).

Contestable Works include the design and construction of all of the following:

- HV and Low Voltage (LV) overhead and underground reticulation whether within or external to the development and its connection to the existing network
- adequate reticulation to facilitate future connections to vacant lots or premises which are part of the development
- all related civil works including all road and footway crossing ducts required solely for the development
- substation sites and enclosures including substation equipping costs
- service mains to all end-use customers and all lots within a subdivision
- all lighting including street lighting within a development
- Asset Relocation Works, refer to ES 8 and ES 5. NB Ausgrid may withdraw from contestability the design and/or construction of these projects or portions thereof at its discretion and carry out the works on a full cost recovery basis in accordance with the pricing principles and other requirements of IPART's Determination with respect to excluded distribution services.

and the associated testing and commissioning.

3.2 Only Ausgrid may carry out certain Work

Only Ausgrid may carry out certain categories of customer connection work during the construction stage, particularly in existing substations. This work, which the customer would otherwise be required to fund as a capital contribution, according to ES 8, will be funded by Ausgrid and it must be kept to a minimum consistent with the guidelines below. Ausgrid may for example choose to design and construct and fund some complex aspects of substations where relay protection and SCADA is involved (refer to paragraphs 5 and 6 of clause 8.1). Note however the following two exceptions where the customer will be required to fund the work carried out by Ausgrid:

1. Altering, relocating or removing a connection asset at the customer's request (this does not apply to installing a new connection or extending or increasing an existing connection to meet the customer's requirements)
2. Installation of additional equipment which is uneconomic and/or purely for added reliability (e.g. a second transformer) and exceeds Ausgrid's reliability guidelines.

This work must be clearly identified at the Design Information stage. The ASP/1 must not charge the customer for any of this work.

These works are typically:

- (a) All HV cable identification, stabbing and phasing. The ASP/1 will still carry out any associated customer funded excavation and jointing. Note: ASP/1s

are permitted to perform LV cable identification, stabbing and phasing in accordance with the requirements of Ausgrid's *Electrical Safety Rules*

- (b) HV testing of installed 11kV underground polymeric cables prior to commissioning, where the cables are to be locally energised at existing Ausgrid substations, (refer to Network Standard NS 161 *Specification for Testing of Underground Cables*)
- (c) All work within existing substations including Pole Transformer (PT) substations that are connected to the network and are energised. This includes: screening of LV boards; pulling into and connection and disconnection of any cables including service mains and consumers mains at these substations; and work on live LV boards of kiosks. Refer also to clause 9.6.
- (d) Induced HV tests on new transformers supplied by Ausgrid as free issue equipment and delivered to site by the manufacturer. NB However, where the customer is funding the transformer, the customer must arrange and fund this testing work.

This restriction (that only Ausgrid may carry out certain work) does not apply where:

- The entire substation is completely de-energised (i.e. all sources of HV and LV supply are appropriately isolated) and placed under *access permit* for the duration of the work. Except that work can be carried out by an ASP/1 on the LV side of a kiosk substation, providing the HV supply to the transformer is isolated and earthed and all existing LV distributors and circuits of the kiosk are isolated from all sources of supply
- The area to which access is required by the ASP/1 can be adequately quarantined from live parts of the substation by locked doors or by equivalent in situ screening requiring tools for removal
- The connection of service lines or consumers mains at new PTs can be carried out by the ASP/1, constructing the PT, whilst under an *equipping permit*. All other street or customer distributors/interconnectors must be isolated at the PT. The connection must be completed at the load side of the PT distributor/service fuses (with the fuse elements/links removed) through to the customer's service fuses/main switchboard. Ausgrid's district operator will energise the new PT and the service or consumers mains after carrying out the necessary phasing and commissioning checks. Note: The process for requesting any necessary *access permits* is set out in clause 12.3.

Note: Service connections at PTs are only permitted as a last resort and then only with the specific approval of Ausgrid.

Where Ausgrid is required to carry out the (approved) service connection at the PT, at least 4 weeks notice must be provided. The service mains must be provided by the ASP (similarly, consumers mains must be provided by the electrical contractor), coiled up in an appropriate manner, and with suitable termination and connection fittings installed. The ASP must also connect the service mains through to the customer's service fuses/main switchboard, prior to connection at the PT. The work by Ausgrid will only be done outside normal working hours in exceptional circumstances and a cost difference will be charged.

3.3 Shared Works or Non-Contestable Works

Ausgrid will fund the cost of all works or assets classed as 'Shared' with some exceptions according to the IPART Determination and ES 8.

Ausgrid will usually construct these works at no cost to the Developer. An exception would be where the policy calls for overhead construction and underground reticulation is requested, in which case Ausgrid will only fund shared assets to the equivalent of an overhead system.

3.4 Reimbursement for Non-Contestable Works

In some instances where these works in clause 3.3 are minor or where it may be more economical or efficient for the Developer/ASP/1, to carry out this work, the Developer may be requested to construct such works in conjunction with the associated Contestable Work. An example would be the installation of shared HV cables within a URD, in conjunction with the contestable LV trenching and cable installation or installing a LV network interconnector for a customer substation, in conjunction with the contestable HV trenching and cable installation. A reimbursement will be made to the Developer or ASP/1 for the satisfactory completion of this non-contestable construction work, in accordance with clause 1.5 of ES 5. This includes progress payments for satisfactory completion of stages of the work.

Note: Ausgrid does not reimburse the customer, developer or the ASP/3 for the design or re-design of any non-contestable works carried out in association with the contestable design.

Ausgrid funds the marginal cost for an ASP/1 to install non-contestable (i.e. shared asset) ducts and cables within existing contestable (customer connection) trenching. Ausgrid's reimbursement is based on the marginal cost of widening/deepening this existing trenching, in accordance with Ausgrid's Network Standards, plus the total material cost of providing the ducts, cables etc.

The customer however, funds the total cost of supplying and installing any spare ducts where they are either:

- (a) dedicated to the customer e.g. for a road crossing with 2 dedicated HV cables supplying a customer substation, the customer funds 2 spare ducts, installed as a precaution against future cable failure, or
- (b) installed as a standard Ausgrid requirement in the new relocated asset, of customer funded asset relocation work.

The Customer Operations Liaison Officer will provide the necessary job requirements in each case.

3.5 Fees for Monopoly Services by Ausgrid

Developers are required to pay fees to Ausgrid for monopoly services provided by Ausgrid to facilitate contestable connection works and contestable asset relocation works. These services and their associated fees are determined by IPART and are outlined in ES 5 and summarised below.

These fees apply regardless of which ASP is contracted to carry out the works and include the following categories:

- design information
- design certification
- design rechecking
- inspection and re-inspection
- access permit
- substation commissioning, (includes checking of protection installed by the ASP/1)
- administration
- notice of arrangement
- access (standby person)
- authorisation
- site establishment.

The Developer will be advised of the applicable fees on making an Application for Connection. In some instances however, fees based on hourly rates may not be

immediately assessable e.g. the Design Information fee for complex connections. Fees are normally payable in advance where they can be assessed in advance.

3.6 Materials

Electrical components and materials necessary to construct the HV and LV reticulation will be available for purchase from Ausgrid's Logistics and Training Branch at competitive prices. Details of materials and the conditions of purchase may be obtained directly from the Manager – Customer Service – Logistics, based at Homebush, on telephone number 02 9394 6001.

Alternatively, the Developer may obtain materials from other suppliers, but would need to demonstrate that the specifications and quality assurance requirements of Ausgrid are met. Details of these materials and the suppliers along with relevant test reports should be provided to Ausgrid prior to purchase. Ausgrid's material requirements and specifications are set out in its relevant Network Standards.

Ausgrid will in most instances supply some materials which it considers may later be economically recovered and reused and such materials are specified in the Design Information (clause 8.1). Ausgrid reserves the right to supply the materials which it funds.

3.7 Asset Ownership

Customers have the right of ownership of the assets where these are funded by the customer. Ownership brings with it certain statutory responsibilities including ongoing maintenance, insurance and licence requirements. Customers contemplating this course of action should first seek advice from Ausgrid.

Note: This document is written on the basis that on satisfactory completion, all the assets in public roadways or within easements in Ausgrid's favour and the service mains will be owned and maintained by Ausgrid (at its cost) and become part of its distribution network. This arrangement will be confirmed in the Agreement (refer to clause 4).

4 Agreements with Developers/Customers

The Developer is required to enter into an agreement with Ausgrid to design and construct the contestable works to the appropriate standards and specifications provided by Ausgrid. The ASP/1 when appointed by the Developer is also required to be a party to this agreement. The agreement is contained in Ausgrid publication *ES 9 Agreement for Connection of Developments* in which the Developer (referred to as the Customer in ES 9) in conjunction with the ASP/1 as appropriate, specifically agree to all of the following:

- use only Accredited Designers and Service Providers
- comply with applicable standards, specifications and legislation
- maintain insurances, lodge warranty bonds, provide and bear the costs of leases and easements and pay all applicable fees to Ausgrid
- use approved materials, build the Contestable Works and other works by agreement, provide test reports and facilitate inspections
- guarantee the design and the work and provide certificates to this effect
- rectify defects in the works.

The ES 9 Agreement is also necessary when Ausgrid is engaged by the developer (under a separate contract) as the ASP/1 for Contestable Works. Ausgrid will sign ES 9 as the ASP/1. The Developer is still required to make application for connection on the form in Appendix A.

This agreement is not necessary where LV service mains only are required to connect the development and no ASP/1 is required, but will be required for all other connection work requiring the services of an ASP/1. The requirements for carrying out LV service work when no other connection work is necessary are outlined in other ES documents, including ES 1 Customer Connection Information.

4.1 Warranty Bond

The Developer or the ASP/1 by agreement will be required to lodge a Warranty Bond, (detailed in ES 9) with Ausgrid as one of the conditions of electrification of the Contestable Works. The bond, equal to 10% of the total cost of the Contestable and Non-Contestable Works excluding free issue equipment (as advised by the Client and assessed by Ausgrid), will apply from the date of lodgement to 3 years from the date of electrification of the works. The bond applies to all the Works (Contestable and Non-Contestable) carried out by the ASP/1, but excludes any Ausgrid supplied and funded (free issue) equipment. The bond will be returned to the client on request upon expiry of the warranty period, subject to a final warranty check of the works by Ausgrid and rectification of any defective works to the reasonable satisfaction of Ausgrid. The bond does not cover damage caused by a third party as the cost of repairing such damage is recovered from the third party.

Where requested by a developer, Ausgrid will issue a letter (Notice of Arrangement, refer to clause 13 and Appendix C) stating that the developer has made satisfactory arrangements for the provision of electricity supply to the development (e.g. subdivision). Such a letter will be provided only after the design drawing for the project has been certified by Ausgrid, ES 9 has been signed and an additional Warranty Bond (detailed in ES 9) is provided, sufficient to cover Ausgrid's costs if it has to complete the works.

Bonds may be lodged by way of an unconditional Bank Guarantee (see Appendix B).

4.2 Rectification of Defects after Electrification

Ausgrid may direct the Customer to arrange and fund the prompt rectification of any defective works identified by Ausgrid during the Warranty Period (particularly any defects discovered at or shortly after final testing/commissioning), which are attributable to or caused by the ASPs work. Ausgrid, however, will normally need to carry out repairs to any defects discovered subsequently and will in the first instance invoice those repair costs to the ASP/1 or the Customer. This applies where electricity supply to other customers or the safety of the public may be compromised or where the ASP does not carry out the repairs within the specified time limit, as directed by Ausgrid. If payment for these repair works carried out by Ausgrid is not received in the required time, Ausgrid may pursue recovery of the balance directly from the Customer instead of from the Warranty Bond.

Where doubt exists as to the exact cause of the defective or damaged assets, Ausgrid will carry out the repairs. Where however, it is subsequently determined that the defects were attributable to or caused by the ASPs work, then the cost of those repairs will be invoiced to the Customer or the ASP.

All of Ausgrid's repair costs (outlined above), including any associated fault location testing and investigation, shall be charged in accordance with clause 4 Emergency Recoverable Works of ES 5. These costs shall include ancillary work such as fault location detection and circuit breaker fault overhauls. Cost recovery only shall be charged where Ausgrid carries out the work.

Note: After electrification, Ausgrid will carry out repairs to damaged assets caused by third parties. Ausgrid will seek to recover the cost of these repairs from the responsible third party.

Works must be found free of major defects after inspection or they will not be accepted for electrification. Such acceptance is not an acknowledgement that the works are free of defects.

5 Types of Developments

The following definitions describe most of the types of development covered by these Requirements. These Requirements do not apply where small LV service mains only are necessary to connect the development, although exceptions to this may occur where work is required in public streets and an ASP/1 is engaged. For example, where a single lot within an existing subdivision is further subdivided and requires the installation of a new pillar(s) and service mains in the street etc. by the Developer's ASP/1 and consequently requires an Agreement as outlined in clause 4.

The Developer is responsible for ensuring at its cost that a suitable electricity connection is provided to or is available for each lot or end-use customer in the subdivision or other type of development.

5.1 Multi-tenanted Residential Developments

These may be single or multi-dwelling developments. The latter may consist of company title and strata title home units, residential flats (whether strata title or not), non-subdivided dual occupancy developments and subdivisions.

5.2 Commercial or Industrial Developments

These may consist of any non residential individual customer, or group of customers, small or large, such as:

- schools, shopping centres, offices, swimming pools
- service stations, factories, workshops
- subdivisions.

5.3 Developments in Non-Urban or Rural Areas

These developments may consist of but are not limited to:

- Individual or groups of customers who require a new or increased electricity connection which requires an extension of the existing network. Individual customers are encouraged to determine if other adjacent property owners might wish to join in sharing the connection costs.
- They are also encouraged to consider the alternative of non-grid connected supply such as stand-alone Remote Area Power Systems (RAPS)
- Non-urban subdivisions where the Developer is usually required to fund the HV (more likely to be dedicated than in urban areas) as well as the LV reticulation to the development
- Non-urban commercial or industrial developments such as service stations, farms or pumping stations.

5.4 Community Title and Community Developments

These are developments where the common estate is held in private ownership.

These developments may include:

- Residential or commercial or mixed developments
- Small shopping centres, service stations, squash courts, and other similar developments
- School Developments
- Primary, secondary or tertiary education schools
- Community Use Developments

- A development used by a non-profit local community group and/or Church and without limitation, including Churches, Church Halls, Scout and Guide Halls, Baby Health/Early Childhood Centres and Child Care Centres.

Notes:

1. Existing Dwelling or Other Premises

Premises connected to Ausgrid's mains which are to remain connected or removed when the proposed development is completed.

2. Residue Lot

A lot in a subdivision on which no structure or building exists, for which electricity supply is not required at the time of the development and which is capable of further subdivision.

All the LV reticulation including the street lighting within new Community Title Developments (CTDs) must be installed, owned, operated and maintained by the customer, as a customer's private installation and will not form part of Ausgrid's network. This reticulation must be designed and constructed to comply with all of the following requirements:

- AS/NZS 3000 Wiring Rules
- Service and Installation Rules of NSW.

CTDs will be provided with a single 'point of supply' (point of demarcation) from Ausgrid's network, either at low or HV, as appropriate. CTDs taking supply from Ausgrid's LV network will need to establish this point of supply as close as possible to the street boundary (within 1 metre) and include the metering for the street lighting. The point of supply must be established adjacent to Ausgrid's substation(s), where installed. As a minimum, the point of supply must be a consumer's termination enclosure (electrical pit, pillar or cabinet) with fault current limiting fuses, (where installed) (refer to the *Service and Installation Rules of NSW*).

Special relaxation of the *Service and Installation Rules of NSW* will be permitted, in terms of metering location and grouping, to allow metering to be installed on individual premises, as for a subdivision development (non CTD) with public dedicated streets. Note: street lighting and other common services must be separately metered, in a similar manner to houselight metering in a multiple occupancy development. The tenure for this common metering, where it is installed in a particular customer's premises, must be incorporated in the Deed or Title for that particular premise.

Note: Each occupancy within such a CTD will require its own meter position and must not contain the metering for other external occupancies. Further, only one supply is permitted to any occupancy and cross-property wiring is not permitted between occupancies. Alternatively, the metering may be grouped in a 'common area' within the CTD, supplying individual submains to each occupancy, analogous to a URD (non CTD).

If HV cables and any substation(s) are necessary within the CTD to supply the development they must always be installed on the same policy basis as for any other type of development, in accordance with Ausgrid's Network Standards (including separation from other services) and they will form part of Ausgrid's network.

Refer to clause 10.5 for information on lease and easement requirements for CTDs.

5.5 Connections to Embedded Networks (e.g. RailCorp)

The connection of an embedded network to Ausgrid's distribution network will be treated like any other customer connection; hence it will require compliance with all of the following:

- Service and Installation Rules of NSW
- AS/NZS 3000 Wiring Rules
- Ausgrid's ES documents, including ES 10
- Ausgrid's Network Standards, including NS 195 HV Customer Connections (HVCs)
- Ausgrid's Standard Form Customer Connection Contract (refer to Clause 18 in particular)
- Any other special requirements or arrangements to be advised by Ausgrid on a case by case basis at the Design Information stage.

If the connection is at HV, then as for all HVCs, the customer must also prepare an Installation Safety Management Plan as required by Ausgrid's Customer Installation Safety Plan. In some instances such as RailCorp, the customer may have a Network Management Plan registered with the Department of Water and Energy and this should also be acceptable as the Installation Safety Management Plan.

Note: Some HVCs such as RailCorp will also have agreed to a formal operating protocol with Ausgrid and all HVCs must also have their own documented set of Electrical Safety Rules acceptable to Ausgrid, refer to the Service and Installation Rules of NSW and Ausgrid's Electrical Safety Rules.

6 Overhead and Underground Mains Policy

Ausgrid will determine the form of construction to be used for individual projects, including contestable works. Ausgrid's geographic area has been categorised as urban and non-urban. Non-urban areas are generally considered to be rural or semi-rural in character which may include isolated industrial/commercial developments.

All connections to the network (whether or not on the customer's premises and up to the 'point of supply' as defined in AS/NZS 3000 Wiring Rules and the *Service and Installation Rules of NSW* shall comply with Ausgrid's policy on the extension or alteration of mains for its network, which is stated as follows.

Note: This policy complies with Ausgrid's Bush Fire Risk Management Plan.

6.1 Urban Area Works

Extensions to or relocations of the **HV** (11kV) network shall be of underground construction with at least one spare conduit. **Exceptions** to this may be authorised in special cases, such as in flood prone areas (see Note below) and for minor (nominally less than 100 metres) extensions, relocations or upgrading of existing overhead network construction, all subject to a satisfactory evaluation of environmental impacts.

Note: **Flood Prone Areas**, are those subject to a 1 in a 100 year flood, for normal infrastructure. For critical infrastructure, Ausgrid may specify a greater period.

In such exceptions, new HV construction can be overhead (in accordance with NS 0126 Design and Construction of High Voltage Overhead Mains) i.e. either of the following:

- Covered Conductor Thick (CCT) - (to AS/NZS 3675)
- Bare Aluminium (AAC) - (to AS 1531)
- Bare Aluminium Alloy (AAAC) - (to AS 1531)
- Bare Aluminium Conductor Steel Reinforced (ACSR) - (to AS 3607).

Approval however, may also be given to the use of one of the following overhead alternatives:

- Aerial Bundled Cable (ABC) - (to AS/NZS 3599.2)
- Bare Hard Drawn Copper - (to AS 1746)
- Bare Galvanised Steel Conductor - (to AS 1222.1).

Note: Bare conductor overhead lines must be designed and installed to avoid conductor clashing, throughout the life of the lines.

All new and replacement bare conductor HV (11kV, 22kV and SWER) overhead distribution construction must utilise conductor with a minimum ultimate tensile strength of 8kN.

All **LV service mains** shall be underground in areas supplied by underground LV distribution mains. The premises listed below, which are in an existing urban overhead distribution mains area, must make provision for connection to future underground distribution mains:

- A commercial property frontage greater than 50 metres
- A multiple residential development (e.g. home units or villa homes) not including duplexes.

In such developments the customer must install:

- An underground service line to a suitable existing street pole, or

- Sheathed underground consumers mains to a private Pole A on the customer's premises, erected within 1 metre of the front property boundary.

Note: Where neither of the above methods of supply is suitable contact the local Customer Operations office.

No new street poles will be erected to reduce the cost of such services.

All LV extensions, relocations and reconductoring in overhead areas must use ABC construction.

All new residential subdivisions must utilise LV underground construction, except in special cases such as flood prone areas, as confirmed by Ausgrid (refer to the first Note in this clause above).

All new commercial and industrial subdivisions must utilise either overhead or underground (except in flood prone areas, as confirmed by Ausgrid, refer to the Note above) LV mains that comply with the local Council's Development Consent requirements and Ausgrid's Network Standards.

6.2 Non-Urban Area Works

New **HV** construction (11kV) must be overhead (in accordance with NS 0126 *Specification for High Voltage Overhead Conductors*), i.e. either of the following:

- Covered Conductor Thick (CCT) - (to AS/NZS 3675)
- Bare Aluminium (AAC) - (to AS 1531)
- Bare Aluminium Alloy (AAAC) - (to AS 1531)
- Bare Aluminium Conductor Steel Reinforced (ACSR) - (to AS 3607).

Approval however, may also be given to the use of one of the following overhead alternatives:

- Aerial Bundled Cable (ABC) - (to AS/NZS 3599.2)
- Bare Hard Drawn Copper - (to AS 1746)
- Bare Galvanised Steel Conductor - (to AS 1222.1).

Note: Bare conductor overhead lines must be designed and installed to avoid conductor clashing, throughout the life of the lines.

All new and replacement bare conductor HV (11kV, 22kV and SWER) overhead distribution construction must utilise conductor with a minimum ultimate tensile strength of 8kN.

Underground HV construction shall also be considered, and may be specified where practical and justified.

HV air break switches shall be installed where necessary to achieve operational flexibility and system reliability.

All **LV overhead extensions, relocations and reconductoring** must use ABC construction.

All new subdivisions must utilise construction that complies with all of the following:

- local Council's Development Consent requirements
- Ausgrid's Network Standards
- flood prone area requirements, as identified by Ausgrid, (refer to the first Note in clause 6.1 above).

6.3 Subtransmission Works (33kV and above)

These are infrequent and will be dealt with on a case by case basis

6.4 Developments in Overhead Mains Areas

In a development involving existing roads containing overhead mains, and where underground service mains are required in accordance with the policy set out above, Ausgrid may initially connect the underground service mains from the existing overhead mains and may require an underground road crossing to a suitable pole within the development at the Developer's cost.

Where a development provides for the underground conversion of an existing dwelling supplied from the overhead mains, the cost of the conversion will be borne by the Developer.

Where the policy calls for overhead construction and underground reticulation is requested, Ausgrid will only fund shared assets to the equivalent of an overhead system. The difference cost between the underground system and the equivalent overhead system for shared assets is funded by the Developer.

The existing (redundant) overhead mains will be dismantled at the Developer's cost, when the new underground electricity supply is available.

7 Environmental Assessments

The Environmental Planning and Assessment Act (EPA Act) requires that an Environmental Impact Assessment (EIA) be prepared for all activities such as the construction of electricity reticulation. The degree and extent to which the EIA is carried out may vary depending on the extent and complexity of the works. However, the correct process described in the legislation must be adhered to so that all matters likely to affect the environment are taken into account to the fullest extent possible. The necessary precautions and actions recommended in the EIA for inclusion in the design and incorporation into the actual construction must be implemented.

The Developer must arrange for the EIA to be undertaken by a person suitably qualified to carry out the assessment (such qualification depends on the level of assessment required). The completed EIA and details of the assessor's qualifications must be submitted to Ausgrid with the Design for the development.

Ausgrid is able to provide quotations on request, for experienced environmental consulting services.

Ausgrid is the Determining Authority for works to be connected to its network and may require design modifications to ensure that the requirements of the EPA Act are complied with.

8 Design Information and Contestable Design

The Developer must engage the services of an ASP/3 to prepare the contestable design of the Contestable Works. Note: certain designs such as the design of small asset relocation projects will not be made contestable and will be carried out by Ausgrid.

The ASP/3 must base the design on the Design Information supplied by Ausgrid (referred to as the Applicable Specification in ES 9).

To initiate the Design Information the Developer must submit to Ausgrid relevant information, including:

An Application Form, as shown in Appendix A.

Where applicable, two sets of Council-approved engineering design drawings of the development showing levels, layout of lots, public recreation areas, location of vehicular kerb and gutter crossings, and water sewerage and storm water reticulation.

Where appropriate, two copies of the Council-approved development plan showing the complete development layout, including lot frontages, as specified in Appendix D.

For subdivisions, an electronic copy of the development layout plan in CAD Format (.dwg or .dgn), as specified in Appendix D.

If street lighting is required, the style of street lighting, column/standard and luminaire, desired by the customer.

The above information and requirements must be supplied following Council approval of any engineering design drawings and in any case before road works are commenced.

8.1 Design Information from Ausgrid

The Design Information will be provided upon payment of the necessary monopoly fees as advised, including the Design Information Fee as listed in ES 5.

Ausgrid will supply the Design Information relating to the Development which will form the basis of the design. This information will be limited to the minimum information necessary to enable the design and include details of the system in the vicinity, acceptable cable types and routes, substation types and ratings (refer to clause 9.2), equipment types, connection or linkage point (refer to ES 8) and lease and easement requirements. It will also include Specifications and Network Standards for the contestable works and agreed non-contestable works and their connection to the network and is required regardless of whether Ausgrid is contracted to be the ASP/3 for the development.

The Design Information will include an inventory of all redundant substation equipment (including oil filled equipment), which is required to be returned to Ausgrid and its return location. It will also include any relevant procedural arrangements and specific requirements, such as the need to dismantle certain types of E-kiosks on-site, prior to their transportation. The Design Information will also include any relevant safety hazard information applicable to the substation site, such as the presence of confined spaces, asbestos, CCA poles etc. Refer to clause 11.13.

The Design Information will also include an electronic copy of Ausgrid's existing distribution system in the vicinity in CAD Format (.dwg or .dgn). NB. This information is subject to a disclaimer and the ASP/3 will need to visit the site to verify the accuracy of the provided information against the actual existing construction and to alter this information as necessary.

Where the substation is of a type which requires a protection and/or a control system using relays and associated instrument transformers, Ausgrid will provide

the protection and control design for the substation for the applicable monopoly hourly rate. All or a preliminary part of the design may be provided with the Design Information and finalised if necessary at the Design Certification stage. The design will identify the relays and instrument transformers and other equipment to be used such as a battery and a SCADA unit and also nominate the settings. The ASP/1 will install and terminate the necessary protection and control wiring, panel and relays to drawings provided by Ausgrid and also install the settings. Ausgrid will inspect and check the satisfactory operation of the protection and control system prior to electrification for the relevant monopoly fees. Note: the ASP/1 will be required to provide a 60Amp 3 phase supply where necessary, refer to clause 12.3.

Where Ausgrid has prepared the design for complex work Ausgrid may decide to also carry out the matching construction.

(Note: It will be necessary for details of the customer's installation to be made available to finalise the protection settings prior to commissioning.)

A minimum of 10 working days is required for the provision of this service by Ausgrid. Some developments however, may require more extensive investigation by planning and engineering staff and the Design Information Fee and the time required will be advised as soon as practicable after receipt of the details of the proposed development from the Developer.

8.2 The Contestable Design

The design must comply with all of the following:

- the Design Information
- Ausgrid's current Network Standards
- Ausgrid's environmental requirements
- Relevant safety and environmental legislation, particularly the Environmental Planning and Assessment Act.

The design must provide references to or include or incorporate the following in sufficient detail to enable construction:

- The location of substations and details of the layout of equipment and installation requirements
- electrical cabling/wiring including the location, number and size of all mains and ducts required to be installed including trenching, road and footpath crossings
- protection and/or control design where provided by Ausgrid including details of the connection to and relevant details of the customer's own installation to enable protection coordination
- location and dimensions of any necessary easements and leases for mains and substations, based on the design information

8.3 Identification of HV Cables for Design Purposes

Ausgrid will not de-energise its in-service HV cables, for cable identification purposes, for an ASP/3s design purposes. Ausgrid however, will where necessary assist the ASP/3 to identify such cables where this cannot otherwise be done by reference to available drawings and will charge for this assistance at an hourly rate based on the monopoly fee for Design Information.

8.4 Design Certification by Ausgrid

The completed design must be submitted to Ausgrid for certification, for which a minimum of 5 working days should be allowed. If the design is unacceptable a resubmission may be necessary for rechecking before certification.

Notwithstanding certification, Ausgrid does not accept any responsibility for the adequacy of the design. A Design Certification Fee (and if necessary a Design Rechecking Fee), will be charged for these services, in accordance with ES 5.

The design **must be** submitted in approved electronic format i.e. CAD Format (.dwg or .dgn) and comply with NS 104 Network Project Design Plans.

8.5 Additional Charges for Changes to the Development

If any of the development details (including matters relating to future ownership of contestable works) are amended after the supply of initial information or engineering drawings, the Developer must supply amended drawings without delay to enable Ausgrid to review the requirements. This may include changes to cables or ducts, substation sites and types and easements for cables. The Developer must pay the cost of any additional work incurred by Ausgrid.

The Developer must lodge an amended design with Ausgrid for rechecking and certification. The Developer must pay the cost of any additional design certification work incurred by Ausgrid.

Contestable Work must not commence until the design has been certified by Ausgrid.

8.6 Currency Periods for Design Information and Design Certification

Design information is valid for a maximum period of 12 months. This is from the date of provision by Ausgrid to the date of submission of the design for design certification. Note: Customer's preparing designs based on design information more than 6 months old are to check with Ausgrid that the network information provided is still valid prior to submission.

Design certification is valid for a maximum period of 12 months. This is from the date of provision by Ausgrid to the date of commissioning of the works. For chamber substations however, this period is 2 years.

Where a customer proposes to use design information or a certified design, which has gone beyond the above currency periods, they must first check with Ausgrid to ensure the design information or certified design is still valid. This may attract additional monopoly fees. The customer must ensure that their design complies with current Network Standards before submitting it to Ausgrid for design certification or rechecking. Ausgrid's current Network Standards (including the latest amendments) are available on our website www.ausgrid.com.au

Notwithstanding the above, Ausgrid reserves the right to require customers to comply with Network Standard amendments which may occur within the above currency periods, where they implement critical or mandatory safety or legislative requirements. The customer will be liable for any costs associated with complying with these Network Standard amendments.

9 Substations

9.1 Siting Information (Supplementary to Network Standards)

Substation(s) may be required to supply the development and must be located off-road within the development on a suitable site either free-standing or within a structure. These sites are to be shown on the development survey plan as unencumbered, obstruction-free sites. In residential and some other subdivisions, kiosk substations are usually suitable. Kiosk substation sites including for URD developments must be covered by a suitable easement, refer to NS 141 *Site Selection and Site Preparation Standards for Kiosk Type Substations*.

Substations may be pole-mounted, kiosks, free-standing enclosures or incorporated within a building or structure at ground or basement level. Second and additional substations within a building may be located at any level provided they comply with for example, requirements for access, layout, ventilation, special equipment, fire and blast rating and environmental protection.

Developers should be aware of the stringent structural, ventilation, fire segregation, environmental and access requirements that apply to the provision of substations. 24 hour access is needed for large and heavy equipment and for personnel. The time taken to fully equip a substation after construction can vary between four and sixteen weeks for 11000/433 Volt substations depending on the type and location. These factors can delay supply if not planned for at the outset.

The substation site must be selected having regard for compliance with environmental legislation, in particular noise constraints and the environmental consequences of oil spills. Adequate containment measures are required to minimise the risk of contaminating the environment and waterways.

Particular attention must be paid when siting the substation to ensure that the fire and blast segregation requirements outlined in the relevant Network Standard are complied with.

Surface substation sites must be located such that the area below them is clear of any underground infrastructure services, such as sewerage, storm water, water, gas and telephone. If such services are encountered during substation construction, it's the Developer's responsibility to arrange for their relocation clear of the substation site.

Substation enclosures will in all cases be provided by the Developer at its cost and in general the Developer will pay for the cost of equipping. The transformer, relays and standard switchgear will still be provided in most cases by Ausgrid at no charge. Special charges may apply in certain circumstances (refer to ES 8).

The customer's metering installation including any associated current and voltage transformers must be located within the customer's installation and must not be located within or on Ausgrid's substation or equipment. Refer also to NS 195 *HV Customer Connections (HVCs)* and ES 3 *Metering Installations*.

9.2 Substation Design, Equipment Rating and Routine Maintenance

The substation installation should be designed having regard for:

- (a) Its ability to supply the load required by the customer under normal and emergency conditions (i.e. if a component should fail in service)
- (b) The need to carry out routine maintenance requiring substation equipment to be taken out of service.

Substations located in the area designated by Ausgrid as the area supplied by the Sydney Central Business District (CBD) triplex system must be designed for connection to that system. Refer to the Sydney CBD design in Appendix B of NS 112 and clause 6.2.2 of NS 114.

The substation equipment may include transformers and HV and LV switchgear and will be the minimum necessary to supply the load and will not be duplicated to cater for failures of substation equipment unless funded by the developer. For e.g. two transformers will not be supplied where one fully loaded transformer is adequate to supply the load.

Transformer sizing is based on Ausgrid's assessment of initial load plus a reasonable allowance for growth; refer to Appendix C - Tables for Assessment of Maximum Demand, of NS 112 Design Standards for Industrial/Commercial Developments and NS 109 Design Standards for Overhead Developments. Ausgrid reserves the right to use any spare capacity to supply customers external to the development, but there will be no requirement by Ausgrid for the installation of **additional** transformers for this purpose.

Equipment requested by developers, which is additional to that nominated in the Design Information, must be funded by the developer, refer to clause 3.7 of ES 8.

Planned interruptions or load restrictions may be necessary for the carrying out of periodic routine maintenance by Ausgrid, for the life of the substation installation depending on its configuration and the equipment installed, refer to all of the following:

- NS 112 Design Standards for Industrial/Commercial Developments
- NS 109 Design Standards for Overhead Developments
- Standard Form Customer Connection Contract (SFCCC), (clause 12.3)
- Electricity Network Operation Standards (ENOS), (clause 4.1).

Ausgrid will give at least 2 business days written notice of the time and duration of such planned interruptions, in accordance with clause 12 of the SFCCC. It may be possible for Ausgrid to reschedule these interruptions, on request by the customer, in accordance with clause 12.5 of the SFCCC, however, it's the customer's responsibility to arrange and fund their own back-up supply e.g. a generator, where continuity of supply is required, refer to clause 4.1 of ENOS.

Note: the customer may be required to provide personnel to operate their equipment or to exchange operating agreements with Ausgrid staff, for planned interruptions on *customer substations*.

The Design Information package shall also include the above requirements for planned interruptions or load restrictions etc.

9.3 Right to Supply other Customers

Ausgrid reserves the right to use spare substation capacity for supply to other customers. If the supply to other customers exceeds 50% of the ultimate design capacity of the substation, the substation will be equipped at no cost to the Developer and Ausgrid will supply and install all substation equipment at its cost except for the supply cables to the development. Particular attention should be paid to clause 3.9 of ES 8 for the conditions which apply to this funding by Ausgrid.

9.4 Upgrading of Existing Customer Substations

Proposals which depend on the upgrading of an existing customer substation to accommodate a customer's additional load requirements must not proceed until Ausgrid's Regional Customer Operations staff have granted approval. This approval will be based on an assessment of the substation's suitability for upgrading to current Network Standards. Ausgrid does not guarantee that an existing substation that was constructed with provision for additional capacity (in accordance with Network Standards current at the time of installation), will necessarily be suitable for this upgrading in accordance with current Network Standards. Where approval is granted subject to the completion of modification works at the substation, the customer must meet the cost of these modification works in accordance with Ausgrid's current connection policies (including ES 8).

9.5 Direct Distributors

A Direct Distributor is a dedicated LV distributor that supplies one customer. It is connected directly to the customer's installation (e.g. main switchboard or link box) and to its dedicated LV protection within Ausgrid's substation. The substation is remote from the customer's premises and can be either a network substation on public land or a customer substation on another customer's premises.

Only an ASP/1 can carry out the contestable work associated with installing a Direct Distributor, as this usually involves a substantial run of underground LV cable along public land and requires a certified design and EIA. The work within an energised substation will be carried out by Ausgrid and will not be contestable.

9.6 Installation and Connection of Consumers Mains in Substations (Restrictions on Electrical Contractors)

Electrical Contractors (ECs) are NOT permitted to enter any of Ausgrid's substations (including kiosk substations) or to excavate under kiosk substations, which are or can be connected to the network, to pull-in, install and connect the customer's consumers mains to the substation LV board. This restriction applies, regardless of the presence of an Ausgrid standby person. This work must be carried out in accordance with one of the 3 scenarios below, as appropriate.

The EC however, must carry out all of the following associated work:

- supply and install the consumers mains up to a 'point of entry' to the substation (and left coiled up) nominated by the ASP/1 or Ausgrid, as appropriate, see below.
- NB. ECs should take extra care and avoid machine excavation when excavating in the vicinity of substations, to avoid damaging the substation earthing or other cables. ECs are generally not permitted to excavate within kiosk easements, refer to NS 141 Site Selection and Site Preparation Standards for Kiosk Type Substations.
- provide the consumers mains cable termination lugs and suitable equipment for their installation, as required
- if possible, the EC should install the lugs on the consumers mains. Alternatively, the ASP/1 or Ausgrid, as appropriate, may quote to install the lugs on the consumers mains, on behalf of the EC.

(a) At new contestable customer substations, under construction by ASP/1s:

Where a new contestable customer substation is under construction (under an EP), then the ASP/1 constructing the substation (nominated on the EP) must pull-in and install the consumers mains within the substation and connect them to the substation LV board, on behalf of the EC, before the substation is commissioned. The EC must coordinate directly with the ASP/1 to arrange the completion of this contestable work.

(b) At existing customer substations, under access by ASP/1s, for associated contestable substation upgrading works:

Where an existing substation is under access by an ASP/1, for associated contestable substation upgrading works, the ASP/1 (*access permit* recipient) must pull-in and install the consumers mains within the substation and connect them to the substation LV board, on behalf of the EC, before the substation is re-energised. The EC must coordinate directly with the ASP/1 to arrange the completion of this contestable work.

(c) At all other customer substations, e.g. new customer substations where Ausgrid funds the labour costs of equipping, or existing customer substations with no associated contestable substation upgrading works or with associated asset relocation works:

Ausgrid will carry out the pulling-in, installation and termination of the consumers mains to the substation LV board and any associated work required to safely carry out the customer requested connection (e.g. switching by district operators, LV parallels to allow de-energising of adjacent LV panels, screening of the LV board etc.), at no charge to the EC

(during normal working hours). A difference charge applies where this work is requested to be carried out outside normal working hours.

Note: The EC must provide a minimum of 4 weeks notice to Ausgrid so that suitable arrangements can be made to schedule and provide the above connection services.

9.7 Metering Installation

The customer's metering installation, including any associated Current and Voltage Transformers (CTs & VTs), must be located within the customer's installation and external to Ausgrid's substation or equipment. Refer also to NS 195 *HV Customer Connections (HVCs)* and ES 3 *Metering Installations*. Where the customer's metering equipment was previously installed in Ausgrid's substation (e.g. a HV metering unit), or embedded within Ausgrid's switchgear (e.g. CTs and VTs), it must be relocated into the customer's installation and external to Ausgrid's equipment, at the customer's cost, where this metering equipment or switchgear requires replacement for any reason.

10 Leases and Easements

Leases for a period of 50 years are required for chamber substations, while easements are required for kiosk type substations, mains and associated works and to secure rights of way and access to these works.

Leases and easements and associated survey plans must be provided in accordance with Ausgrid's relevant Network Standards and on the terms set out in Ausgrid's registered lease and easement memoranda, which are included as Appendices F and G respectively.

These memoranda contain Ausgrid's standard lease and easement terms and must be used when creating leases or easements to be granted to Ausgrid. The Department of Lands registration numbers for the memoranda are:

- Lease Memorandum: AG823634P
- Easement Memorandum: AG823691B.

Leases and Easements must be granted by the owner of the property which is being developed. Ausgrid will not accept a sub-lease.

The customer is responsible for the restoration of any easement surface (including paving, landscaping etc.) where Ausgrid is required to disturb the surface to carry out any work on its distribution system assets. Buildings and other improvements may be erected up to easement boundaries, provided adequate structural support is maintained for them and the easement remains fit for purpose. No encroachment can be made on an easement without Ausgrid's written approval.

The Developer must provide satisfactory information to Ausgrid as to the proposed finished surface levels, indicating adequate surface drainage of land abutting lease and easement sites.

More detailed requirements are specified in Ausgrid's relevant Network Standards which form part of the Design Information.

10.1 Deeds of Agreement with Landowners for Property Rights

Because a required lease and/or easement will not usually be registered prior to the electrification of the new connection (refer to pre-conditions of connection in clause 4.4 of ES 9), it is necessary for the landowner to enter into a corresponding Deed of Agreement (DoA) for each project, to ensure the granting and registration of the lease and/or easement at the earliest practicable time.

It is a condition of supply to the premises that these DoAs be completed and it is the responsibility of the Developer to arrange for their completion.

The DoA is a legally enforceable agreement between Ausgrid and the landowner for the future granting of a lease and/or easement by the landowner to Ausgrid. A DoA must be signed by the landowner in conjunction with the certification of the contestable design and the signing of the ES 9 Agreement. There are two different types of DoA as outlined in table 1 below. These DoAs together with the *Directions for Signing a Deed* document are available on Ausgrid's website: www.ausgrid.com.au (located under ES 9 Agreement for Connection of Developments).

Table 1 The 2 Deeds of Agreement and their applications

Deed of Agreement	Application
1. Deed of Agreement for Easement	<ul style="list-style-type: none">• Ausgrid requires an easement• Developer is not the landowner - deed is between the developer, landowner and Ausgrid• Developer is the landowner - deed is between the landowner and Ausgrid.
2. Deed of Agreement for Lease	<ul style="list-style-type: none">• Ausgrid requires a lease and any associated easement on the same parcel of land i.e. the same owner• Developer is not the landowner - deed is between the developer, landowner and Ausgrid• Developer is the landowner - deed is between the landowner and Ausgrid.

10.2 Registration of Leases and Easements prior to Electrification

Where practicable, a normal pre-condition to the electrification of supply to a development is for all easements, leases or licences required by Ausgrid to be stamped with stamp duty (if applicable) and registered at Land and Property Information NSW (if registrable). Prior to registration the final Survey Plan showing the lease and easement must be submitted for approval by Ausgrid.

10.3 Designs and Survey Plans

All proposed lease and easement allocations, including easements on adjacent properties, must be shown on the Design of the Contestable Works for the development when it is submitted for certification. A Survey Plan must also be funded by the customer and prepared by a registered surveyor appointed by the customer.

The developer or ASP/1 must ensure that prior to electrification the easement shown on the survey plan is located over the actual position of the electricity cables and/or ducts (shown as a red line) indicating the offsets of the cables and ducts to the easement and other boundaries. This is best achieved for underground construction by having the plan prepared after excavation and prior to backfilling. This red lined plan, which may be a "work in progress" survey plan completed to the fullest extent possible, must be signed by the registered surveyor and a hard copy submitted to Ausgrid prior to electrification. This copy may be in pdf or tif format. In addition to the signed red-lined hard copy, the survey plan should be submitted utilising the preferred formats of AutoCAD (dwg) or Microstation (dgn) data projected using Real World Projection MGA56(m).

The final survey plan signed by the registered surveyor must be submitted as soon as the substation is built, all the cables are installed and jointed, and all final access ways have been confirmed.

10.4 Contestable Works across Adjacent Property

Leases and easements and associated survey plans must be provided in accordance with Ausgrid's relevant Network Standards and the conditions set out in its registered lease and easement memoranda, which are included as Appendices F and G respectively. These memoranda outline Ausgrid's standard lease and easement terms and must be used for all jobs requiring leases and easements on behalf of Ausgrid. These memoranda must be provided with the Design Information in every case. These memoranda and their numbers are recorded at the Department of Lands.

10.5 Community Title

Ausgrid's property and access rights must be secured by easements and leases, as appropriate when supply requires one or more substations and HV cables within the development, as for any other private land.

An easement for electricity purposes including access may need to be granted over the whole road reserve area (property line to property line), generally described as Lot 1 and include the site of any proposed kiosk type substation site which will become part of Lot 1. The easement must be created in accordance with S88B of the Conveyancing Act 1919.

The developer must lodge a suitable Management Statement and corresponding working plan in accordance with Section 36 of the Community Land Development Act, 1989 and these must incorporate the prescribed diagrams/survey plans showing the lease and easement requirements along with the connection assets required initially and must make provision for any future extension of these assets as determined by Ausgrid to satisfy the supply requirements of the development.

The project cannot be finalised until these documents have been received and approved by Ausgrid.

10.6 General

The developer must include details of all leases and easements to be created in favour of Ausgrid on the final subdivision plan lodged with the Land and Property Information NSW. If land involved with the required easements is not subject to subdivision a separate Plan of Easement and the required Transfer of Grant will be needed.

Easements are to be created in accordance with:

For Torrens Title

Section 88B of the Conveyancing Act, 1919 as amended.

Note: Refer to clause 5.7 of ES 1 for service connection and land tenure requirements for Torrens Title subdivisions. In particular the tenure requirements for any shared consumers mains arrangements for e.g. the need for an additional 88BA Positive Covenant over the jointly owned mains.

11 Connection Works

The Developer is responsible for ensuring that connection works which are contestable are undertaken by a suitable ASP.

All works must be carried out in accordance with the appropriate safety and environmental legislation; relevant local council requirements, all applicable laws and with Ausgrid's Safety Rules and technical and environmental standards.

Ausgrid as an ASP will on request provide a quote for all or part of the contestable works.

11.1 Authorisation

Before commencing works, the ASPs employees must be authorised by Ausgrid for work on or near its network assets and be assessed for their competence in complying with any unique or complex aspect of Ausgrid's requirements (refer to ES 4).

If these employees cannot be authorised or have their competence established, they will not be permitted to carry out the works and the Developer will be informed.

ASPs should approach Ausgrid well in advance and preferably on Accreditation, to arrange for the authorisation of their staff, as required. This is particularly relevant when proposing to undertake works at higher voltages. Ausgrid will require evidence of training and competence to carry out such works.

11.2 Prior to Commencing the Contestable Works

Work should not commence until:

- any development approval has been granted by the Local Council,
- required environmental controls have been defined,
- a registered surveyor has been appointed,
- ES 9 has been signed, and
- the design has been certified.

Where Ausgrid will be performing a segment of the works whether contestable or otherwise, it should be noted that its projects are programmed well in advance and the Developer must therefore, notify Ausgrid well in advance of its program for connecting the development. Ausgrid will not be liable to the Developer for any losses incurred, due to any delays in the execution of works, being undertaken by Ausgrid

Immediately before work commences, all easements and site and lot boundaries must be surveyed and pegged by a registered surveyor, at the Developer's cost. The pegs must suitably define all curves and bends. Any required re-pegging will also be at the Developer's cost.

11.3 Works on Private, Common or Community Property

Electricity reticulation on the customer's side of the 'point of supply' (as defined in the *Service and Installation Rules of NSW*) including common property under the Strata Titles Act or community property under the Community Land Development Act, will remain under private ownership and control, and must be installed by the Developer in accordance with AS/NZS 3000 Wiring Rules. This is the customer's installation.

Unless otherwise specified, Contestable Works (Non-Electrical and Electrical as defined in clauses 11.5 and 11.6 below), will be vested in Ausgrid on acceptance or be covered by a lease or easement, and become part of Ausgrid's electricity distribution system.

11.4 Works on Existing or Future Dedicated Public Roadways or on Leases or Easements in Favour of Ausgrid

Unless otherwise specified, all Electrical and Non-Electrical Works in dedicated roadways, or covered by a lease or easement, associated with the installation of the electricity reticulation to the Development, will be vested in Ausgrid on acceptance and become part of Ausgrid's electricity distribution system.

11.5 Non-Electrical Works

Non-Electrical Works include all of the following:

- preparation of substation sites and cable routes, including installation of footings, piers, batters, and survey pegging of easements etc
- construction of substation enclosures or chambers and associated ventilation and access
- installing ducts
- restoration of levels and surfaces.

11.6 Electrical Works

The Electrical Works include all of the following, required to connect the Development to Ausgrid's distribution system:

- installation of poles and overhead mains
- installation and jointing of underground cables
- installation of pillars and pillar standards
- substation equipping.

11.7 Temporary Connections

A temporary electricity connection may be required for a number of reasons including construction or sales promotion purposes or where permanent connection cannot be made to a development, or part of a development, from existing mains, because of the nature or stage of the development.

The full cost of establishing the temporary connection (with the exception of any recoverable equipment supplied free by Ausgrid at its discretion) and the subsequent cost of disconnection and removal and return of certain assets must be borne by the developer. The connection works will include the creation of easements or other guaranteed occupancy and access rights. The works to be removed and returned would be all materials (e.g. transformers) supplied free by Ausgrid. In addition should it be necessary for the developer to remove some connection works in public streets including civil works, then this will be specified in the Design Information and the certified design.

Regardless of which ASP carries out the work, the developer must also pay in advance to Ausgrid as a refundable deposit, the cost of the recoverable equipment that would normally have been supplied free of charge for a permanent supply. Ausgrid will refund all or part of this amount depending on its condition on return of the equipment to Ausgrid. An unconditional bank guarantee will be acceptable in lieu of a cash deposit, to be drawn on if the equipment is not returned within an agreed time. If the time period cannot be accurately determined in advance the requirement should be for Ausgrid to collect the money on demand if the equipment is not returned on demand. These details should be written into the Reference Schedule in ES 9.

The costs of installation and removal are matters for determination by the customer and the service provider. If it becomes necessary for Ausgrid to disconnect a supply that has been abandoned and recover its equipment, the costs of disconnection and recovery may be deducted from any refund or drawn against the guarantee

Ausgrid may consider funding those temporary connection assets (for example the HV or LV cabling in the street) which it considers to have value in the foreseeable future for supplying other customers external to the development.

All work funded by the developer is contestable.

11.8 Underground Service Mains

The underground service mains in URD subdivisions are considered to commence at the service pillar or streetlight pillar standard, erected within the footpath area, as part of the Contestable Works. The service pillar or streetlight pillar standard is considered as an above-ground connection point for the underground service mains. Where the design of the project requires service tails to be installed to allow for future connection to a lot or end use customer, this also forms part of the Contestable Works.

Service tee joints are only permitted as a last resort and only where individually approved by Ausgrid.

11.9 Level 2 Work associated with Level 1 Work

A suitably qualified Level 2 ASP (ASP/2) must carry out any service line work (e.g. disconnecting and reconnecting overhead and underground service mains) that is associated with a Level 1 contestable project (refer to ES 4). The ASP/1 is responsible for ensuring that the ASP/2 possesses the appropriate category of authorisation to carry out the type of Level 2 work involved. The ASP/1 may either subcontract the Level 2 work to an appropriately qualified ASP/2 or possess the appropriate Level 2 accreditation and authorisation, to independently carry out the work.

11.10 Joint Use Trenching

It is the Developer's responsibility to negotiate joint use trenching arrangements with other service providers or utilities, on terms acceptable to Ausgrid.

11.11 Street Lighting within Dedicated Roadways of New Subdivisions

Street lights must conform to the requirements of the local Council and Ausgrid.

During the initial planning stages of the development, the Developer is responsible for determining these requirements and obtaining the approval of the local Council. Ausgrid's requirements are outlined in its relevant Network Standards.

The supply and installation of the street lighting luminaires, brackets and standards and their connections to the LV mains are Contestable Works, funded by the Developer. These assets (except for the abovementioned connections) become the property of the local Council, who may enter into a maintenance arrangement with Ausgrid for an appropriate tariff or charge.

11.12 Street Lighting in Private Roads & Areas

Installation of street lighting in other than public dedicated roadways such as private and community roads, pathways, parks and other areas not dedicated to the public will be the responsibility of the Developer. It will be a private, separately metered, electrical installation, owned, controlled and maintained by the customer. Refer to the *Service and Installation Rules of NSW*, for signage requirements for these installations.

11.13 Return of Free Issue Equipment

When customer substations are decommissioned, relocated or altered and the work is contestable, the customer or developer is responsible for the recovery and return of any redundant free issue (recoverable) equipment e.g. transformers and HV switchgear. The ASP/1 must return this equipment to Ausgrid's nominated depot location, in an as found condition and in a safe and timely manner. The customer is also responsible for the recovery and independent disposal from these sites, of other redundant substation equipment not required by Ausgrid (refer to clause 3.11 of ES 8).

The handling and transportation of oil filled equipment to Ausgrid must be included by the Designer (ASP/3) as part of the contestable project's Environmental Impact Assessment submitted with the Design for certification and in any consequent Environmental Management Plan. This plan must also address the handling and independent disposal of any equipment containing asbestos, such as a LV board. Refer to clause 8.1 for the relevant Design Information, which will be provided by the local Customer Operations Liaison Officer.

The ASP/1 must make a safety and environmental assessment of the substation site and the equipment to be recovered, prior to commencing work. This will include safe work procedures for working in a confined space and working with asbestos, as applicable. The ASP/1 must also check for the presence of PCB contaminated oil by arranging for Ausgrid to carry out PCB testing of all oil filled equipment, prior to handling and transporting this equipment. This will involve the ASP/1 taking an oil sample from the equipment and delivering it to Ausgrid for testing, please refer to the procedure below. Ausgrid will test for PCB and also the general condition of the oil and fund the actual oil test. The oil test results must accompany the returned equipment.

Note A: Ausgrid may have previous PCB test results for the equipment oil, which may avoid the need for further testing. Consult with the local Customer Operations Liaison Officer.

Note B: The need for the oil test may be waived if the ASP/1 assumes that PCB is present and handles and transports the oil filled equipment accordingly, i.e. with the appropriate licence, see Note C.

Note C: A licence is required under the Environmentally Hazardous Chemicals Act 1985 (NSW) for the handling and transport of greater than one tonne of Scheduled PCB contaminated oil filled equipment. ASP/1s without such a licence must subcontract this segment of the work to persons with a licence.

The ASP/1 must take the appropriate safety and environmental precautions and arrange for the appropriate licenses and authorisations in handling and transporting hazardous equipment and any oil filled equipment, to ensure compliance with relevant legislation and Ausgrid's NUS 174 *Environmental Procedures*.

Table 2 below lists the various local depots for the return of equipment. The particular return location for a project will be nominated in the Design Information, refer to clause 8.1. The ASP/1 must contact the depot contact officer a minimum of 5 working days prior to the proposed delivery time of the equipment, to confirm the arrangements

Ausgrid will arrange for the disposal or re-use of the equipment and its contents, as appropriate, on return by the ASP/1.

The ASP/1 is responsible for any site testing and remediation made necessary by their equipment recovery and return work.

Oil Sample Procedure:

- Oil samples must be taken in a clean clear glass jar.
- The jar should be labelled with the equipment type and its serial number, or the "T" number of the transformer, to uniquely identify the equipment from which the sample was taken.
- A minimum of 1L of fluid should be drained off before taking the actual oil sample, to avoid water in the sample.
- A minimum of 5mL of oil must be taken as a sample (should be brown in colour).
- Care should be taken to avoid any cross-contamination of oil samples from different items of equipment.
- Oil samples should be delivered to the Senior Scientific Officer - Chemical at Ausgrid, 14 Nelson Street, Chatswood, telephone: 02 9410 5117.

- Contact details i.e. email address or fax number should be provided for provision of test results.
- ASP/1s should allow a minimum of 1 week for provision of test results, by Ausgrid.

Table 2: Local Ausgrid depot locations and contacts for the return of free issue equipment (subject to change)

Depot	Address	Contact Officer & telephone nos.
Chatswood	337-355 Mowbray Rd, Chatswood	John Casey, 02 9410 5268, 0408 605 534
Oatley	33-45 Judd St, Oatley	Col Bramley 02 9585 5814 0412 170 781
Homebush	25-27 Pomeroy St, Homebush	Paul Riley 02 9394 6804 0412 413 402
Zetland	130 Joynton Ave, Zetland	Bob Jones 02 9663 9435 0418 815 714
West Gosford	Racecourse Rd, West Gosford	Allan Morris 02 4325 8690 0417 283 076
Maitland	84 Green St, Rutherford	Daryl Redman 0407 896 061

11.14 Field Recordings of Assets 'as built'

The ASP/1 or the developer must provide a field recording of the Contestable Works after construction and 2 weeks prior to electrification as required by Network Standard NUS 100. Recording of underground cables and ducts must be made after trenching and prior to backfilling. Recording of the commissioning joints may be submitted immediately after the commissioning.

11.15 Pit Access

Accessing, de-watering and cleaning of existing underground cable pits (required in conjunction with contestable cable work) is also contestable work; which can only be carried out by an **ASP/1**, as part of a contestable project under an ES 9 Agreement. This includes any associated work such as confined space safety procedures, EIA preparation, traffic management, as well as taking the necessary safety measures where asbestos may be present.

Where an **ASP/3** however, requires the above pit access services (including any associated cable identification work), to facilitate the completion of a contestable design, prior to the appointment of the ASP/1 and the signing of the ES 9 Agreement, Ausgrid can provide these services on a monopoly basis and will charge the ASP/3 in accordance with the Design Information hourly rate in ES 5, as appropriate. The ASP/3 should consult with the Regional Planning office, nominally 4 weeks in advance for the provision of these services by Ausgrid. Alternatively, if the ASP/1 has been appointed under an ES 9 Agreement when the ASP/3 requires these pit access services, the ASP/3 can engage this ASP/1 to carry out this work on a contestable basis. Note: any associated HV cable identification work remains an Ausgrid monopoly function, refer to clause 3.2).

Any necessary repairs to (pre-existing) damaged or defective pits will be carried out and funded (initially) by Ausgrid. Note: Ausgrid will seek to recover these repair costs from the responsible party, where applicable.

12 Testing, Inspection and Connection

Testing must be carried out in accordance with Ausgrid's relevant Network Standards.

All HV underground cables and associated HV installations must be tested as required by Ausgrid's Network Standards prior to commissioning. Note that some tests must be performed by a qualified and competent NATA accredited tester, such as Testing and Certification Australia.

The Developer and its service providers (whether accredited as ASPs or not) must permit Ausgrid to inspect and approve aspects of the works prior to their completion during the course of construction as provided for in the ES 9 Agreement. Two weeks notice must be given prior to commencing any of the works, and four days notice must be given prior to carrying out certain works. These will vary depending on the project and the following is a typical list:

- erection of poles
- commencement of any cable laying
- commencement of any jointing
- proving of conduits
- backfilling of trenches
- installing substation footings
- pouring of concrete
- installing an earthing system
- testing of works.

12.1 Substation Pre-Commissioning Testing by an ASP/1

The ASP/1 constructing any new distribution substation (kiosk, chamber or PT) must ensure that any substation pre-commissioning testing and completion of test reports, required to be carried out by the ASP/1, is carried out by a person with appropriate qualifications. The minimum qualifications are an electrical tradesperson or technician, in accordance with the requirements of the NSW Scheme for the Accreditation of Service Providers (Level 1) and ES 4. This means a person that has successfully completed an electrical apprenticeship and who holds an Electrical Certificate of Proficiency issued by the Department of Education and Training. Note: this person may in addition also hold a current Office of Fair Trading Qualified Supervisor Certificate (Electrician) however, this additional qualification is not essential for this particular work. This person may be either an employee of the ASP/1 or a sub-contractor, as appropriate.

12.2 Inspection by Compliance Officers

Compliance Officers may inspect the connection works and report on defects (technical and safety), which will be recorded against the person responsible, as well as the ASP. This includes all defects in the connection works due to the workmanship of **all** service providers employed by the developer to construct those works. If defects are detected in the civil works component, these defects will also be reported to the ASP and possibly to the developer; and any associated works carried out by the ASP will not be accepted until these defects are rectified.

NB. A minimum of 4 working days notice is required for the carrying out of inspections by Compliance Officers.

12.3 Acceptance of the ASP/1s Work, for Commissioning and Connection to the Network

All ASP/1s are required to prepare and display Equipping Permits (EPs) as required by Ausgrid's *Electrical Safety Rules* when constructing assets prior to their connection to the network. The ASP/1 must sign off on the front of the EP and ensure that the work groups listed on the front of the EP have been signed off in conjunction with cancellation of an *access permit* where applicable, and before the actual connection on completion of the work. Compliance Officers who have inspected the works under the EP will also list themselves on the front of the EP and subsequently sign off their workgroup on the front of the EP, when such inspections are completed.

Note: Only a Compliance Officer can add the "Compliance Officer" workgroup to an EP.

In conjunction with signing the EP and prior to arranging access for connection, the ASP/1 must confirm with the appropriate Customer Operations Liaison Officer that all necessary obligations, prior to the connection and supply of electricity, have been complied with, including satisfactory progress towards completion of all ES 9 contract obligations. The ASP/1 must also have rectified all major electrical and safety defects identified by the Compliance Officer up to the time of commissioning. Where necessary the ASP/1 must forward the following documentation in writing to the Compliance Officer a minimum of 5 weeks in advance:

- Access Permit Requests for commissioning and connection (including details of access required)
- Substation Equipment Inventory Paperwork

A declaration and inspection that the work has reached practical completion along with the following documentation must be submitted in writing to the Compliance Officer a minimum of 2 weeks prior to the scheduled commissioning:

- Field recordings of the connection assets "as built" and the "red lined" preliminary survey plan
- All required Substation Commissioning Paperwork (including test reports, earthing details, substation checklists, signed ES 9 Appendix A, IAMS data sheets, compaction certificates for reinstatement and pole checklists).

An access permit fee will apply, refer to ES 5. The certificate in Appendix A of ES 9 must be submitted and may be used as the declaration of practical completion.

The ASP/1 must also provide a 60Amp 3 phase supply (portable generator or other source) where necessary, to enable Ausgrid to carry out pre-commissioning protection checks.

13 Notice of Arrangement for Developments/Subdivisions

When satisfied that the Works are suitable for connection to its network Ausgrid will on request issue a Notice of Arrangement (of the form shown in Appendix C) stating that the Developer has complied with Ausgrid's requirements in relation to the development.

Before the issue of this Notice by Ausgrid the Developer must:

- complete an Application Form as shown in Appendix A,
- complete the works in accordance with Ausgrid's requirements set out in this and other referenced documents, including substations and ducts, service mains to the customer's 'point of supply' and peg all easements and lot frontages and complete the works,
- where easements are required in favour of Ausgrid, submit to Ausgrid six copies of the final plan together with a copy of Form 21 according to the provisions of Section 88B of the Conveyancing Act 1919, as amended,
- where easements are not required, submit to Ausgrid four copies of the final plan of subdivision of the development,
- for a Community Title development, submit to Ausgrid a copy of the Management Statement acceptable to Ausgrid and the corresponding working plan, and
- satisfy any other reasonable and relevant requirement.

Ausgrid however, may issue a Notice of Arrangement prior to completion of the Contestable Works provided:

- the contestable design has been certified, and
- an additional bond has been deposited either in cash or as a Banker's Guarantee as in clause 4, consisting of an amount equal to the value of the Contestable Works remaining to be completed. This additional amount as assessed by Ausgrid will be returned when all of the above requirements have been satisfied.

14 Dispute Resolution

If a dispute arises in negotiations between Ausgrid and the Developer and/or the ASP/1 concerning any matters relating to these Requirements, the resolution procedures contained in Ausgrid's *Standard Form Customer Connection Contract* will apply. The steps to be followed are:

- initial discussion with Ausgrid's management
- independent conciliation and mediation (if necessary)
- arbitration (if necessary).

Resolution of disputes between the Developer and any ASP or subcontractor or third party in relation to the design or implementation of the works is the responsibility of the Developer.

Appendix A Application Form



APPLICATION FOR PROVISION OF ELECTRICITY CONNECTION TO A DEVELOPMENT
DETAILS OF THE ANTICIPATED ELECTRICAL DEMAND SHOULD BE PROVIDED ON A SEPARATE
ATTACHMENT

(Delete clauses if they are not applicable)

Constituent Council Ref. No.

Development Location Street
Town/Suburb

Type of Development (See clause 5 of ES 10)

Subdivision DP or Title Reference

Torrens/Strata/Community

Nearest Cross Street

Name of Developer

Name of Developer's Representative

Address for all Correspondence

Telephone No Fax No

Is Ausgrid requested to digitise the Plans? Yes/No

Name of the Designer

Name of Accredited Service Provider

Telephone No Fax No

The drawings specified in clause 8 of ES 10 are attached.

Lot Numbers of Residential Building Lots Total

Lot Numbers of Existing Dwellings to be retained

Lot Numbers of Medium Density Areas - No. of Units

Lot Numbers of Dual Occupancy Lots

Lot Numbers of Special Use Areas (include details if any)

Lot Numbers of Residue Lots

Lot Numbers of Public Reserves, Road Reserves etc.

Anticipated Date of Completion of Subdivision/Development

Lot Numbers affected by Existing Overhead Powerline Easements

(also show on plan)

Programmed Date of Completion of Road Construction

Anticipated Date of Commencement of House/Unit/Building Construction

Is private generation to be installed in this development Yes/No

If Yes, is it intended to run this generator in parallel with Ausgrid's system for extended periods - provide full details (type and rating) Yes/No

Is gas Reticulation to be installed in this Development? Yes/No

Is common trenching with other utilities proposed? Yes/No - Show on Plan

- a) I/We hereby submit the above information and drawings and wish to be advised of Ausgrid's requirements with regard to the provision of electricity to the above development.
- b) I/We agree that, at all times, this application is subject to the conditions of the Agreement for Connection of Developments (Ausgrid publication ES 9) and the Requirements for Electricity Connection to Developments as determined by Ausgrid from time to time and detailed in publication ES 10.
- c) In particular I/we agree that notwithstanding the issue of a Notice of Arrangement by Ausgrid I/we may be subject to a further Payment as detailed in the Agreement (ES 9) and in ES 10.
- d) I/WE ACKNOWLEDGE THAT I/WE HAVE READ THE REQUIREMENTS CONTAINED IN PUBLICATION ES 10 AS IN FORCE AT THE DATE OF THIS APPLICATION AND AM/ARE FAMILIAR WITH ITS CONTENTS.
- e) I am a proper officer of the Developer - Company/Owner, duly authorised to sign this application on behalf of such Company.
- f) I/WE agree to enter into a formal Agreement (refer to ES 9) with regard to reticulation works where required by the above Requirements.

DEVELOPER

Date: / /

Signature of Developer

Position Held

(Manager, Owner)

COMPANY

The Common Seal of)

)

was hereunto affixed in accordance with)
the Articles of Association and by)
authority of the Board in the presence)

Director

of:)

)

DEVELOPER'S REPRESENTATIVE

Date: / /

Signature of Developer's Representative

The Company Seal of

Appendix B Bank Guarantee

(Refer to clause 4)

Example of form acceptable to Ausgrid

(May be used as the actual guarantee)

BANK GUARANTEE

BY:

TO: AUSGRID

Sirs,

At the request of (hereinafter called "the Owners") and in consideration of Ausgrid accepting this undertaking as security for all or any amounts payable now or in the future to Ausgrid by the Owners pursuant to the Requirements in ES 10 and ES 9 *Agreement for Connection of Developments* in their application for connection to the subdivision or development of

The

(hereinafter called "the Bank") unconditionally undertakes to pay on demand any sum which may from time to time be demanded by Ausgrid to a maximum aggregate sum of

This undertaking is to continue until a notification has been received from Ausgrid either that such sum is no longer required by Ausgrid or until payment to Ausgrid by the Bank of the whole of the said sum or such part as Ausgrid may require.

Should the Bank be notified in writing, purporting to be signed for and on behalf of Ausgrid that Ausgrid desires payments to be made of the whole or any part or parts of the said sum, it is unconditionally agreed that such payment or payments will be made to Ausgrid forthwith without further reference to the Owners, and notwithstanding any notice given by the Owners to the Bank not to pay same. Provided always that the Bank may at any time without being required to do so pay to Ausgrid the said sum of

..... less any amount or amounts it may previously have paid under this undertaking or such lesser sum as may be required and thereupon its liability here under shall immediately cease and determine.

It is further agreed that the Bank shall not be discharged or released from this undertaking by any arrangement made between the Owner and Ausgrid with or without the assent of the Bank or by any alteration in the obligations of the Owner or by any forbearance whether as to payment, time, performance or otherwise.

IN WITNESS whereof THE BANK has executed this deed the

..... day of 20.....

..... signed

..... witnessed

Appendix C Notice of Arrangement

(Refer to clause 13)

TYPICAL NOTICE OF ARRANGEMENT LETTER

Telephone:

Reference:

Project No.:

Date:

Name of Applicant

Applicant's Postal Address

Dear Sir/Madam,

NOTICE OF ARRANGEMENT FOR THE PROVISION OF AN ADEQUATE ELECTRICITY SUPPLY TO: (Development/Subdivision Description)

I refer to your letter dated () (reference: Enquiry Reference) concerning the development/subdivision at () and wish to advise that satisfactory arrangements have been made with Ausgrid for the provision of an adequate electricity supply to (). This letter is not however, a notification that the project has reached Practical Completion.

Accordingly, no objection is raised to Local Council's release of the plan of subdivision to allow registration of the development/subdivision.

The issue of this Notification is subject to the establishment of all necessary easements pursuant to the provisions of Section 88B of the Conveyancing Act, 1919 as amended. In the case of Community Land Development the lodgement of a suitable Management Statement and corresponding working plan in accordance with Section 36 of the Community Land Development Act, 1989 is also required. It is also subject to the requirements outlined in Ausgrid's publication ES 10 Requirements for Electricity Connection to Developments.

Where this notice is being provided prior to the completion of the contestable works for this project, it is conditional on prior completion of the Design Certification process and the signing of the ES 9 Agreement for the contestable work and the prior lodgement by the developer of a bank guarantee equal to the sum of:

- 10% of the value of the completed contestable work in satisfaction of the requirement for the warranty bond (ES 9) and
- the full value of the contestable work still remaining.

On completion of the contestable work by the Accredited Service Provider, the guarantee will be cancelled and replaced by the lodgement by you or by your Accredited Service Provider of the warranty bond, equal to 10% of the value of the completed contestable work.

This letter is valid for a period of 6 months from the date of this letter. Due to the regular changes in Ausgrid's supply network, re-confirmation of supply arrangements should be sought if the project is not completed within this period.

Yours faithfully,

.....

Position (location) -

Appendix D Development and Design Plans

(Refer to clause 8)

1. DEVELOPMENT PLAN AND ELECTRICITY RETICULATION DESIGN PLAN - PAPER COPY

General

The paper copy will be used as a file record of the Development and must be a single sheet drawn to a scale of 1:1000 or 1:500 showing the proposed development and existing adjoining lots.

Required Information

The plan must contain the following details:

1. Existing adjoining lots, road boundaries and general notes as relevant
2. Proposed lots, lot numbers, road boundaries, pathways, lot dimensions and general notes as relevant
3. Future development stages, if relevant, detailing lots and streets.

2. DEVELOPMENT PLAN AND ELECTRICITY RETICULATION DESIGN PLAN - CAD FILE (.dwg or .dgn format)

General

Ausgrid requires a file in CAD Format (.dwg or .dgn) to form the base of drawings and maps to design, construct and record the Development. The drawing file must be to an appropriate scale (1:500, 1:1000 etc.) showing details of the proposed development and comply with NS 104 Network Project Design Plans.

Developers must carry out checks for computer viruses during submission of any electronic information to Ausgrid (CDs or via email – limited by size of attachments).

Required Information

The information is required in 3 separate categories:

1. EXISTING details: lot and road boundaries, and other information to determine the scope and location of the project.
2. PROPOSED details: information about the development in this application.
3. FUTURE details: information explaining the future planned developments related to this stage of the development. Information on a future stage will assist the design and planning aspects of this project.

Ausgrid's CAD Layering Standards

Refer to NS 104 Network Project Design Plans, for Ausgrid's CAD Layering Standards.

Details to be Supplied with CDs

CDs enclosed with the application must be clearly labelled with the following information:

- Applicant's Name
- Date of Application
- CD number and total number of related CDs (e.g. CD 1 of 1)
- CAD File Name (e.g. PROJECT1.DWG, PROJECT2.DGN)
- Drawing Scale (e.g. 1:1000)

Appendix E Typical Sequence of Main Events

1. Developer/Customer makes initial enquiry at Ausgrid's local Customer Operations Office
2. Ausgrid sends initial letter and ES 10 containing Application Form, information on Works and Fees
3. Developer returns Application Form with payment of relevant fees requesting 'Design Information' and nominates the ASP/3 and if possible the ASP/1
4. Ausgrid provides copy of ES 9, applicable Deeds of Agreement and Design Information (including a digital CAD file of the existing distribution system in the vicinity) to enable preparation of design
5. ASP/3 submits design (including the digital CAD file) to Ausgrid for checking/certification
6. Ausgrid design checking and certification process commences on payment of fees by Developer
7. Developer appoints the Registered Surveyor and enters into the ES 9 Agreement and arranges signing of the applicable Deeds of Agreement with Ausgrid and if possible at this stage the ASP/1 also signs onto the ES 9 Agreement
8. Note: this ES 9 Agreement is always required if any ASP/1 is necessary to carry out the works
9. Ausgrid certifies the Design
10. The Developer appoints the ASP/1 and the ASP/1 signs on to the ES 9
11. Developer requests quote from ASP/1 to carry out the Contestable Works
12. The ASP/1 nominates its employees for authorisation by Ausgrid to enable the contestable work to commence
13. Developer and the ASP/1 provide notification for inspection as required by clauses 5.14 of 6.8 of ES 9
14. Ausgrid inspects work in progress
15. Any defects are notified to the ASP/1 and/or the Developer, who must rectify these defects
16. On practical completion of the work, Ausgrid verifies that the pre-conditions to electrification set out in clause 4.4 of ES 9 are satisfied and commissioning takes place. This includes submission of the Warranty Bond and ES 9 certificates by the ASP/3 and the ASP/1
17. On request, Ausgrid provides Developer with 'Notice of Arrangement' unless provided earlier (but not before step 9 above) in accordance with clause 13
18. Three year warranty period commences
19. Ausgrid accepts Works as part of its Network.

Appendix F Memorandum AG823634P (for the lease)

Form: 16LM
 Licence: 05-11-693
 Licensee: Softdocs

MEMORANDUM
 New South Wales
 Section 80A Real Property Act 1900



AG823634P

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

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(B) APPLICANT

AUSGRID ABN 67 505 337 385

(C) The applicant requests the Registrar General to record this memorandum, comprising 11 pages including this page, which contains provisions deemed to be incorporated in any instrument which refers to it.

- (D) i. For option to renew see clause Not applicable
 ii. For option to purchase see clause Not applicable

(E) Signature of applicant or applicant's representative: *Bronwyn Badcock*
 Name of signatory: *BRONWYN BADCOCK*
 Capacity of signatory (if applicable): *Applicant's solicitor*
 Date: *15 February 2012*

**ANNEXURE "A" (COMPRISING 10 PAGES) TO MEMORANDUM LODGED ON BEHALF
OF AUSGRID DATED THIS DAY OF 200**

1. (Definitions)

In this Lease, unless the contrary intention appears:

- a) *Customer* has the meaning it has in the Electricity Supply Act.
 - b) *Distribution System* means the Electricity Works used to convey and control the conveyance of electricity to the Property and other Customers, but does not include a Transmission System.
 - c) *Electricity (Consumer Safety) Act* means the Electricity (Consumer Safety) Act 2004.
 - d) *Electricity Safety Act* means the Electricity Safety Act 1945.
 - e) *Electricity Supply Act* means the Electricity Supply Act 1995.
 - f) *Electricity Works* means any electricity power lines or associated equipment or electricity structures that form part of any of the Lessee's transmission or distribution systems and includes plant, electricity conductors, wires, cables, transformers, switchgear and other apparatus for conveying, controlling or storing electricity or data signals (including signals transmitted through optical fibre).
 - g) *Law* includes any statute, regulation, ordinance, by-law, order, consent or requirement, present or future, whether local, state, federal or otherwise, or industry code or Australian standard, and any Network Standard. It also includes any amendment, consolidation or replacement of them.
 - h) *Lessee* means the lessee described on the front page of this Lease (and where the context permits, its employees, agents and contractors), and its successors and assigns.
 - i) *Lessee's Costs of Relocation* means the Lessee's reasonable estimate of the costs (including any administrative, design, approval, consulting, legal, stamp duty, registration, consultant's or other costs) which have been or will be incurred by it in connection with:
 - removing the Lessee's Electricity Works from the Premises or the Property; and
 - if required under this Lease, relocating, whether permanently or temporarily, the Lessee's Electricity Works or installing new Electricity Works at the Temporary location or the New Location or both.
- The Lessee may determine such costs in accordance with its standard practices. A certificate signed by a general manager, authorised representative of a general manager or internal auditor of the Lessee as to the Lessee's Costs of Relocation is prima facie evidence of such costs.
- j) *Lessor* means the lessor described on the front page of this Lease and its successors and assigns (or, if the Lessor is a natural person, its executors, administrators and assigns) and in either case its employees, agents and contractors.

- k) *Lessor's Supply Requirements* means the amount of electrical load to be supplied to the Property from the Electricity Works contained within the Premises as agreed from time to time between the Lessee and the Lessor.
- l) *Liability* means claims, causes of action, damages and costs (including legal costs on an indemnity basis, whether or not the subject of a court order) and other liabilities, whether in contract, tort (including negligence), under statute or otherwise.
- m) *Network Standard* means any policy or technical standard published by the Lessee from time to time.
- n) *Plan* means the plan annexed to this Lease.
- o) *Premises* means that part of the Property leased to the Lessee as shown on the Plan.
- p) *Property* means the Land and/or building in which or upon which the Premises are situated.
- q) *Terminating Date* means the date so described on the front page of this Lease.
- r) *Transmission System* has the meaning it has in the Electricity Supply Act.

2. (Interpretation)

Unless the contrary intention appears:

- a) the singular includes the plural and vice versa;
- b) an agreement, representation or warranty on the part of two or more persons binds them individually and together (that is, jointly and severally);
- c) a reference to a statute includes all regulations, proclamations, ordinances and by-laws issued under it;
- d) "including", when introducing an item or items, is illustrative only, not exhaustive;
- e) a reference to the whole includes part.

3. (Implied Covenants and Powers)

The obligations and powers implied by sections 84, 84A and 85 of the *Conveyancing Act 1919* are excluded.

4 (Statutory Powers and Functions)

Nothing in this Lease affects the Lessee's powers, rights and functions under the Electricity Supply Act, the Electricity Safety Act or the Electricity (Consumer Safety) Act.

5 (Rent)

At the end of the term, the Lessee must pay the rent of \$1.00 per annum (if demanded in writing).

6 (Use of the Premises)

The Lessee may:

- a) use the Premises as an electricity substation;
- b) from time to time install, extend, alter, construct, dismantle, inspect, repair, replace, renew and maintain on and within the Premises such Electricity Works or other plant and equipment as the Lessee determines; and
- c) use Electricity Works contained within the Premises to supply other Customers whether directly or indirectly from the Distribution System.

7 (Access)

The Lessee may, and the Lessor must ensure that the Lessee and persons authorised by it may, access the Premises 24 hours a day without restriction, with or without tools, materials, plant and other apparatus. The Lessor must supply the Lessee with keys or any other device which may be necessary to obtain access.

8 (Security of the Premises)

- (a) The Lessee will ensure that all exterior doors and any other point of access in or to the Premises, are securely fastened at all times when the Lessee's employees, agents or contractors are not in attendance on the Premises.
- (b) If the Lessor becomes aware that those exterior doors or points of access are not securely fastened, it must promptly notify the Lessee.

9 (Lessee's Electricity Works)

The Electricity Works installed in, affixed to or in the Premises, the Property or any easement created in connection with this Lease, remain the Lessee's property, even after the Lease ends, and may be removed by the Lessee.

10 (Services to the Premises)

- a) In this clause, "Upgrade" means alteration, modification or upgrade to the Premises (excluding the Electricity Works) or to the services to the Premises, or to any easement or right of way referred to in the Plan, necessary:
 - (i) for the safe use of the Premises, easement or right of way or
 - (ii) for the Premises, easement or right of way to comply with a Network Standard.
- b) The Lessee may notify the Lessor of any Upgrade which the Lessee (acting reasonably in order to comply with relevant Laws) considers is necessary.
- c) The Lessor must, at the Lessor's cost, promptly carry out the Upgrade in a proper and workmanlike manner in accordance with all Laws and the requirements of all relevant authorities.

- d) If the Lessor does not carry out the Upgrade promptly after receiving the Lessee's notification, the Lessee may:
- (i) cease to operate the Electricity Works in the Premises or to supply electricity to the Property until the Upgrade has been carried out, if it, acting reasonably, believes it is unsafe to continue operation; and/or
 - (ii) elect to carry out the Upgrade. The Lessor must pay all costs incurred by the Lessee in connection with the Upgrade promptly on receipt of a tax invoice (as that term is defined in the A New Tax System (Goods and Services Tax) Act 1999 (Cth)) from the Lessee setting out such costs.

11 (Repair)

The Lessee must within a reasonable time repair any damage to the Premises or any other part of the Property caused by the Lessee's wilful or negligent act or omission, or its default under this Lease.

12 (Lessee Works)

The Lessee:

- a) must not (except in the case of an emergency) alter, interfere with or make any connections to the Lessor's fixtures or services without the Lessor's consent. However, the Lessor must not unreasonably withhold its consent; and
- b) must ensure that any works it carries out within the Premises are carried out in a proper and workmanlike manner and in accordance with all Laws and the requirements of all relevant authorities.

13 (Use of Common Areas)

The Lessee may, for the purposes of this Lease, use any areas of the Property provided by the Lessor for common use, but must obey all reasonable directions and rules notified by the Lessor relating to the use of those areas.

14 (Lessor to Maintain)

The Lessor must:

- a) maintain in a serviceable condition any right of way or easement referred to in the Plan and any drainage system which may affect the Premises;
- b) ensure that any safety equipment, ventilation, air ducting and doors provided for the Premises are not obstructed or impaired;
- c) ensure that any part of the Property which encloses or forms part of the Premises (including any external doors, gates, ventilation panels and external finishes) is structurally stable, in good condition and complies with all Laws and the requirements of all relevant authorities;
- d) take all necessary steps to keep dry the internal surfaces and spaces within the Premises;
- e) not do anything or omit to do anything that might contravene a Network Standard or adversely affect the Lessee's use of the Electricity Works; and
- f) immediately repair any damage to the Premises caused by the Lessor's act or omission, negligence, or default under this Lease.

15 (Lessor Works)

- a) The Lessor must not without the Lessee's prior written consent:
 - (i) alter existing ground levels on or adjacent to the Premises or to any easement created in connection with this Lease; or
 - (ii) carry out any works (including any storage, demolition, excavation, erection, installation, maintenance, alteration, removal or replacement) within, above, below, or which may detrimentally affect, the Premises, the ventilation provided for the Premises or any easement created in connection with this Lease.
- b) If the Lessee consents to the Lessor carrying out the works referred to in clause 15(a), it may impose such reasonable conditions with respect to its consent as it determines.

16 (Quiet Enjoyment)

The Lessor covenants with the Lessee that, subject to the Lessee performing its obligations under this Lease, the Lessee may peaceably possess and enjoy the Premises for the term of this Lease, without any interruption or disturbance from the Lessor.

17 (Damage and Destruction)

- a) The Lessor must immediately notify the Lessee if the Premises are damaged, affected or destroyed so as to become substantially inaccessible or unfit for use in accordance with this Lease.
- b) The Lessee may terminate this Lease by giving the Lessor not less than 30 days' notice after the damage, affectation or destruction occurs.
- c) If the Lessee terminates this Lease under clause 17(b), neither party is liable to the other for damages, costs or expenses, unless arising out of a breach of this Lease occurring before the termination.

18 (Easements)

- a) The Lessee has the full right and liberty for its employees, agents and contractors with or without tools, materials, plant and other apparatus, and vehicles to pass and repass at all times of the day or night during the term of this Lease over any land marked "Right of Way" on the Plan ("right of way") and, during such times as the Lessee considers necessary, to park vehicles upon the right of way.
- b) The Lessee has the full right liberty and licence for:
 - (i) its employees, agents and contractors during the term of this Lease to construct, lay down, dismantle, replace, repair, renew and maintain underground and/or overhead electricity cables through, beneath or over any land marked "Easement for Electricity Purposes" or "Easement for Electricity Works" on the Plan ("easement"); and
 - (ii) free and uninterrupted passage of electricity and signals through the cables within the easement.

19 (Demolition)

If the Lessor wishes at any time to demolish improvements on or about the Property in a manner inconsistent with the Lessee's rights under this Lease:

- a) the Lessor must give the Lessee at least 12 months' prior written notice that it intends to demolish the improvements;
- b) the Lessee must surrender this Lease within a reasonable time after all of the following have occurred:
 - (i) the 12 months' notice period has expired; and
 - (ii) the Lessor and all the Lessor's tenants or other occupants of the Property (other than the Lessee) have vacated the Property; and
 - (iii) the Lessee has transferred its Electricity Works from the Premises to a new location and has connected it and/or other or additional Electricity Works to the Distribution System; and
- c) the Lessor must pay the Lessee's reasonable legal costs and all stamp duty and registration fees in connection with the surrender of this Lease.

The parties acknowledge that any new supply to the Property will be the subject of a new Customer Connection contract and that the Lessor will be responsible for the costs of establishing that new supply.

20 (Relocation of Premises)

If the Lessor at any time wishes to construct, install, remove, redevelop or otherwise change improvements on or about the Property in a manner inconsistent with the Lessee's ongoing rights under this Lease, but wishes to maintain electricity supply to the Property while doing so:

- a) the Lessor must give the Lessee at least 12 months' prior written notice, and consult with the Lessee, in relation to the relocation of the Premises;
- b) the Lessor may, after such consultation, nominate for the Lessee's approval:
 - (i) a new location or locations for the Premises on the Property ('**New Location**'); and
 - (ii) if required by the Lessee, a temporary location for the Premises ('**Temporary Location**'),which must both be of a size and standard stipulated by the Lessee and must comply with the Law;

- c) if the Lessee approves of a Temporary Location and/or New Location, the Lessee will at its discretion , subject to clause 20(e), relocate the Electricity Works or install new Electricity Works including any required additional Electricity Works at the Temporary Location and/or New Location within a reasonable time;
- d) after the completion of the construction, installation, removal, redevelopment or other change to improvements on or about the Property, the Lessee will, subject to clause 20(e), relocate the Electricity Works or install new Electricity Works including any required additional Electricity Works at the New Location within a reasonable time after receiving notice of completion;
- e) before any relocation or installation under this clause 20, the Lessor must pay to the Lessee the Lessee's Costs of Relocation as a debt due and payable to the Lessee; and
- f) immediately upon each relocation or installation under this clause 20, at the Lessor's cost:
 - (i) the Lessor must do all things necessary to grant to the Lessee a registered lease on the same terms as this Lease (with only those changes necessary to make it appropriate to the Temporary Location or the New Location, as the case may be); and
 - (ii) the Lessee will do all things necessary to surrender this Lease and accept a new lease in its place.
- g) For the purposes of clauses 20(c) and 20(d), "reasonable time" will be the time that in the Lessee's reasonable opinion it will require:
 - (i) to transfer Electricity Works from the Premises to the Temporary Location and/or the New Location or to install new Electricity Works;
 - (ii) to install additional Electricity Works if required; and
 - (iii) to connect the Electricity Works to the Distribution System.

21 (Make Good)

On the expiration or the earlier termination of this Lease, the Lessee:

- a) must vacate the Premises;
- b) must decommission the Lessee's Electricity Works contained in the Premises or the Property; and
- c) may remove all the Lessee's Electricity Works in or on the Premises or the Property, which were not installed by the Lessor.

22 (Restoration)

On vacating the Premises, the Lessee must:

- a) remove all rubbish;
- b) repair any damage it has caused in the course of removing its Electricity Works, except that:
 - (i) the Lessee need not re-instate any permanently finished surfaces damaged by the removal;
 - (ii) if the ground is dug up in the removal, the Lessee need only backfill and temporarily seal the opening;
 - (iii) the Lessee need not rectify or renew any landscaping; and
 - (iv) the Lessee need not restore or replace any thing erected in or on or obstructing any easement or right of way shown in the Plan, if that thing has been damaged or removed in the course of the removal.

23 (Indemnities)

The Lessor and the Lessee covenant as follows:

- a) The Lessee indemnifies the Lessor against all losses, damages and costs incurred by the Lessor which arise directly out of the Lessee's negligence in exercising its rights under the Lease or as a direct result of the wilful misconduct of the Lessee, its employees or agents or contractors. Any liability of the Lessee under this indemnity is to be proportionately reduced to the extent that any losses, damages or costs are caused or contributed to by:
 - (i) negligent or wilful acts or omissions of the Lessor, its employees or agents or contractors, the Lessor's tenants or other occupants of the Property (other than the Lessee) under any arrangement and whether with or without the Lessor's consent; or
 - (ii) any breach by the Lessor of any provision of this Lease; or
 - (iii) any failure by the Lessor to comply with any Law.
- b) The Lessor indemnifies the Lessee against all losses, damages and costs incurred by the Lessee which arise directly out of negligent or wilful acts or omissions of the Lessor, its employees or agents or contractors or other occupants of the Property (other than the Lessee) under any arrangement and whether with or without the Lessor's consent. Any liability of the Lessor under this indemnity is to be proportionally reduced to the extent that any losses, damages or costs are caused or contributed to by:
 - (i) negligent or wilful acts or omissions of the Lessee, its employees or agents or contractors; or
 - (ii) any breach by the Lessee of any provision of this Lease; or
 - (iii) any failure by the Lessee to comply with any Law.

24 (Assignment and Subletting)

- a) The Lessee must not assign, transfer or dispose of its interest under this Lease to any entity that is not a New South Wales authority, agency or State-owned corporation without the prior written consent of the Lessor, which consent cannot be unreasonably withheld.
- b) However, clause 24(a) does not apply to any assignment by the Lessee in connection with a disaggregation of the Lessee into separate retail and distribution businesses or entities.
- c) The Lessor may assign its interest in this Lease upon prior written notice to the Lessee.

25 (Holding over)

If the Lessee continues to occupy the Premises beyond the expiry of this Lease:

- a) the Lessee occupies the Premises as a tenant from year to year at a rental equal to the rent set out in clause 5; and
- b) the tenancy will continue on the conditions of this Lease so far as they are applicable to a tenancy from year to year.

26 (Costs)

- a) Subject to clauses 19 and 20 of this Lease, each party must pay their own costs, charges and expenses (including legal costs) in relation to preparing, negotiating and executing this Lease.
- b) The Lessor must pay any costs in connection with:
 - (i) obtaining all consents in relation to this Lease, and
 - (ii) the Lessee considering any proposed relocation of the Premises, including any temporary relocation (and regardless of whether relocation occurs).
- c) Subject to clauses 19 and 20, the Lessee must pay all stamp duty and registration fees in connection with this Lease.
- d) A party who defaults ('Defaulting Party') must pay the other party's reasonable costs and disbursements in connection with the other party exercising rights to take action because of the Defaulting Party's default.

27 (Rates and Taxes)

The Lessor must pay any rates and taxes that may be levied in connection with the Premises or in connection with that part of the Property of which the Premises form part.

28 (GST)

- a) Words and expressions used in this clause which are defined in the *A New Tax System (Goods and Services Tax) Act 1999* (Cth) have the same meaning in this clause.

- b) Any consideration to be paid or provided for a supply made under or in connection with this Lease unless expressly described in this Lease as 'GST inclusive', does not include an amount on account of GST.
- c) Despite any other provision in this Lease, if a party ('Supplier') makes a supply under or in connection with this Lease on which GST is imposed (not being a supply the consideration for which is specifically described in this Lease as 'GST inclusive'):
 - (i) the consideration payable or to be provided for that supply under this Lease but for the application of this clause ('GST exclusive consideration') is increased by, and the recipient of the supply ('Recipient') must also pay to the Supplier, an amount equal to the GST exclusive consideration multiplied by the prevailing rate of GST; and
 - (ii) the amount by which the GST exclusive consideration is increased must be paid to the Supplier by the Recipient without set off, deduction or requirement for demand, at the same time as the GST exclusive consideration is payable or to be provided subject to the production of a tax invoice.
- d) If a payment to a party under this Lease is a reimbursement or indemnification, calculated by reference to a loss, cost or expense incurred by that party, then the payment will be reduced by the amount of any input tax credit to which that party is entitled for that loss, cost or expense.

29 Grant of new lease

The Lessor agrees to grant a new lease under this clause 29 on the Terminating Date to commence on the next day only if:

- a) the Lessee gives the Lessor a notice stating that it wants a new lease of the Premises for a term of 25 years; and
- b) the Lessor receives that notice within the period from and including the day that is twelve months before the Terminating Date to but excluding the Terminating Date; and
- c) when the Lessee gives that notice, and on the Terminating Date, the Lessee is not in breach of this Lease.

The new lease is to be identical with this Lease except that:

- d) the term is to be 25 years; and
- e) the commencement date is to be the day after the Terminating Date; and
- f) the terminating date is to be the day which is 25 years after the commencement date; and
- g) the new lease must reflect any variations to this Lease, whether registered or not, which become effective during the term of this Lease.

Appendix G Memorandum AG823691B (for the easement)

Form: 16LM
 Licence: 05-11-693
 Licensee: Softdocs

MEMORANDUM
 New South Wales
 Section 80A Real Property Act 1900



AG823691B

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

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(B) APPLICANT

AUSGRID ABN 67 505 337 385

- (C) The applicant requests the Registrar General to record this memorandum, comprising 4 pages including this page, which contains provisions deemed to be incorporated in any instrument which refers to it.
- (D) i. For option to renew see clause Not applicable
 ii. For option to purchase see clause Not applicable
- (E) Signature of applicant or applicant's representative: *Robadiah*
 Name of signatory: BRONWYN BADCOCK
 Capacity of signatory (if applicable): Applicant's Solicitor
 Date: 15 February 2012

ANNEXURE “A” (COMPRISING 3 PAGES) TO MEMORANDUM LODGED

ON BEHALF OF AUSGRID DATED THIS DAY OF 200

Ausgrid

Easement memorandum

Part A

Definitions and interpretation

- 1 (a) The following terms have the following meanings:

ancillary works means works ancillary to the functions performed by *electricity works*, including structures (whether above, on or below the ground), equipment for signals, signals cables, service cables, connecting cables, and supports (including towers and poles).

easement area means that part of the *land* shown as the site of an “easement for electricity and other purposes” on any plan registered with New South Wales Department of Lands.

electricity works means any electricity power lines or associated equipment or electricity structures (whether above, below or on the ground) that form part of *Ausgrid’s* transmission or distribution network and includes mains, wires, cables (including optic fibre cables), pipes or conduits, switches, switchgear, fuses, control equipment, pillars, kiosks, transformers (including pole-mounted and pad-mounted transformers), substations (including pole-mounted and pad-mounted substations) and their contents, pits, ducts and *ancillary works*.

land means the land over which this easement is granted (being the land burdened by this easement).

landowner means the owner of the *land* and any person having an estate or interest in the *land*.

person includes a body corporate.

signals includes data or signals of any kind.

- (b) A reference to a person includes its successors and assigns.

Page 2 of 4

Part B

Easement for electricity works

- 2 *Ausgrid* and all persons which it authorises may:
- a) construct, place, alter, extend, repair, inspect, renew, replace, maintain, remove, and use, on, to and from the *easement area*, any *electricity works* for conveying electricity or *signals* (or both); and
 - b) convey, or permit the conveyance of, electricity or *signals* (or both) through the *electricity works*.

Part C

General provisions of easements

- 3 For the purpose of exercising its rights under the easement for electricity works, *Ausgrid* and all persons which it authorises may:
- a) enter the *land* at any time, with or without vehicles, plant and equipment, for any purposes within the terms of the easement; and
 - b) do anything reasonably necessary to obtain access to the *easement area*; and
 - c) cut fences and walls in or on the *land* and install gates in them; and
 - d) on any part of the *easement area*, cut, trim or remove any trees, vegetation, undergrowth or anything that may interfere with the exercise of *Ausgrid's* rights under the easement; and
 - e) do anything reasonably necessary for the exercise of *Ausgrid's* rights under the easement.
- 4 The *landowner* acknowledges that ownership of all *electricity works* remains with *Ausgrid*.
- 5 *Ausgrid* covenants with the *landowner* that:
- a) it will endeavour to keep the *electricity works* in good repair; and
 - b) in exercising its rights under the easement, it will do as little damage as practicable to the *land*; and
 - c) it will repair any damage it causes to the *land*, except that if after this easement is granted the *landowner* installs paving or other works to the surface of the easement area *Ausgrid* will not be obliged to restore the paving or those works; and
 - d) subject to its rights under the easement, it will not unreasonably impede the *landowner's* reasonable use of the *land*.
- 6 The *landowner* covenants with *Ausgrid* that it will not:
- a) do or allow anything that may interfere with, damage, or destroy the *electricity works* or interfere with the effective operation of the *electricity works*; or
 - b) obstruct *Ausgrid* in the exercise of its rights under the easement; or
 - c) alter or permit to be altered the existing ground level within the *easement area*, or place or allow to be placed on the *easement area* any building, structure, driveway, paving, plant or item without *Ausgrid's* prior written permission, such permission not be unreasonably withheld.

Appendix H Charging for the New Standard E-Type LV Switchboard

Ausgrid introduced a new standard LV switchboard for chamber substations from 2 April 2007. The switchboard is manufactured by Schneider Electric and is known as the 'E'-type LV switchboard, refer to NS 114 *Electrical Design and Construction Standards for Chamber Type Substations*. All Design Information issued from 2 April 2007 calls for this new board, in lieu of the existing superseded 'H'-type (Sydney) and 'N'-type (Newcastle) boards. Note: the new E-type board consists of manufactured panel modules with a dead-front enclosed assembly and internal arc classification.

The customer will be required to procure (from Ausgrid's Stores only) and fund this complete new board for dedicated customer substations, as it is not free-issue equipment, refer to clause 3.6.2 Connection Works Funded by the Customer of ES 8. Procurement enquiries can be made directly to Ausgrid's Michael McHatton, Manager - Customer Service - Logistics, on telephone number 02 9394 6001. Note: the installation of this board within these substations is contestable, in accordance with ES 8.

Ausgrid, however, will reimburse the customer the material cost of the following component SAIF fuse strips, refer to table 3 below:

- supplying another customer external to the development (may be a future customer)
- supplying Ausgrid's LV network.

Table 3: The available SAIF fuse strips and their respective Ausgrid stockcodes

SAIF Fuse Strips	Ausgrid Stockcode
400A	178411
800A	178412

This one-off reimbursement payment will be made after the substation is commissioned. Refer to the 2 examples below.

Note: SAIF fuse distributor panels and their SAIF fuse strips and are sold as complete integrated units as outlined in table 4 below.

Table 4: The **only** three available SAIF fuse distributor panels / SAIF fuse strip combinations and their respective Ausgrid stockcodes

SAIF Fuse Distributor Panel (1600A total rating)	Ausgrid Stockcode
4 x 400A	179618
2 x 800A	179990
1 x 800A plus 2 x 400A	179651

Example 1: for the 1 x 800A plus 2 x 400A SAIF fuse distributor panel, where:

- the 800A fuse strip supplies the on-site customer;
- one 400A fuse strip supplies a future direct distributor to a premises external to the development; and
- one 400A fuse strip is a LV interconnector or network distributor.

Ausgrid will reimburse the customer for the 2 x 400A SAIF fuse strips, i.e. 2 x stockcode 178411.

Example 2: for the 4 x 400A SAIF fuse distributor panel, where:

- one 400A fuse strip is a LV interconnector or network distributor; and
- the other three 400A fuse strips are spare.

Ausgrid will reimburse the customer for the 1 x 400A SAIF fuse strip (supplying the network), i.e. 1 x stockcode 178411.

It should be noted the current lead time for the supply of the E-type LV board is around 24 weeks, however, this should reduce to approximately 16 weeks as usage increases.