

Policy for ASP/1 Premises Connections

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1 Overview of the Document

1.1 Purpose of document

This document provides details of design and construction requirements to assist connection applicants and Accredited Service Providers (ASPs) in understanding and satisfying their contractual obligations during a project to construct (or relocate) new infrastructure or premises connection assets. These contractual obligations are contained in Ausgrid's Model Standing Offer Standard Connection Services for Contestable ASP/1 Premises Connections no greater than 11 kV.

There is also an explanation of the process of providing electricity connections to customer's premises from Ausgrid's network for contestable projects.

1.2 Intended audience

The document is intended to be used by customers and ASPs involved in the connection or asset relocation project.

1.3 How to use this document

This document is broadly divided into two sections, as follows:

- (a) Details of the design and construction requirements, sections 1 to 9, and
- (b) A description of the process when ASPs are engaged to build or relocate network infrastructure and network connections, section 10.

1.4 Additional information

Customer requested asset relocation works are generally regarded by Ausgrid as contestable, with some exceptions, and generally follow the same process as contestable connection projects. Further details on asset relocation are available in Ausgrid's Network Asset Relocation and Undergrounding Policy Guidelines, available at www.ausgrid.com.au (follow the links: Our network / Standards and guidelines / Electrical supply standards).

For details of how to connect a private electrical installation to Ausgrid's network where only Low Voltage (LV) service mains are required to connect the premises and no other network augmentation work is necessary, refer to *ES1 Premises Connection Requirements*, available at www.ausgrid.com.au (follow the links: Our network / Standards and guidelines / Electrical supply standards).

Details of the funding arrangements and monopoly fees associated with the connection of customer's premises to Ausgrid's network are covered in Ausgrid's Connection Policy – Connection Charges (the Connection Policy), available at www.ausgrid.com.au (follow the links: Our network / Connecting to the network / Connection charges).

Technical information regarding the design and construction requirements for Ausgrid's network assets is covered by Ausgrid's network standards, available at www.ausgrid.com.au (follow the links: Our network / Standards and guidelines / Network standards).

2 Introduction to Contestable Work

2.1 Regulatory framework

A customer who intends to connect a new premises or alter a network connection is required to fund all or a portion of the costs of the work. Developers who require network connections for new housing, industrial or commercial developments are also required to fund all or a portion of the work to construct the infrastructure for the development.

The funding arrangements are governed by the Connection Policy. The Ausgrid Connection Policy is consistent with both:

- (a) Chapter 5A Electricity connection for retail customers, of the National Electricity Rules (NER), and
- (b) 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 IPART determination).

NOTE: The IPART determination operates instead of the Australian Energy Regulator (AER) Connection Charge Guidelines until 1 July 2014 under the transitional provisions of the NER (see rule 11.46.5 Interim Connection Charging Rules).

If a customer is required to fund the connection work then Section 31 of the Electricity Supply Act (NSW) 1995, allows the customer to choose an ASP to do the work. The work performed by the ASPs is generally called contestable work.

There is an accreditation scheme for ASPs in NSW – Accreditation of Service Providers to Undertake Contestable Services, Level 1 (the ASP scheme) and this is published and administered by NSW Trade & Investment. ASPs who work on or near the Ausgrid network must be both accredited by NSW Trade & Investment in accordance with the ASP scheme and authorised by Ausgrid before undertaking any work.

2.2 Accredited Service Providers

The ASP scheme is governed by the Electricity Supply (General) Regulation 2001 and establishes a competitive framework for the provision of connection works.

There are three levels of accreditation for the performance of contestable connection services in New South Wales:

- Level 1 (ASP/1) work involves the construction of transmission and distribution works such as the installation of high and low voltage distribution cables and substations. The infrastructure might be installed within a development or in public roads to connect the development to the Ausgrid network. Any civil work required for conduits and/or substations is also contestable,
- Level 2 (ASP/2) work involves the installation of overhead and underground service mains and metering equipment, the disconnection and reconnection of electricity to enable work to be carried out on an electrical installation and electrifying installations. Connections for houses and small commercial premises are generally constructed by an ASP/2, and
- Level 3 (ASP/3) work involves the design of the connection assets to be constructed. This includes the design of new overhead and/or underground transmission and distribution works. After the design is certified by Ausgrid an ASP/1 would construct the new infrastructure. For new subdivisions the design would include all the streetlighting within a development.

The extent of the contestable works that needs to be designed and constructed will generally be determined by the location of the linkage point, which is defined in the IPART determination and the Connection Policy. This is the point on the network where the use of the assets changes from being dedicated to one customer (or one group of customers), to being shared with customers generally. More information on the linkage point can be found in the Connection Policy.

Shared assets that are not included in the contestable works will be funded by Ausgrid. Ausgrid may construct this part of the project or may offer the work to the ASP/1 who is doing the infrastructure construction.

2.3 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. Refer to NS 143 *Easements, Leases and Rights of Way*.

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.

These memoranda and their numbers are recorded at the Department of Lands. They 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, and
- 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.

2.4 Deeds of Agreement with landowners for property rights

Because a required lease and/or easement may not be registered prior to the electrification of the new connection, 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 prior to any construction 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 prior to the commencement of construction of any contestable work.

There are 4 different types of DoAs 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/connectingtothenetwork

Table 1: The 4 DoAs and their applications

Deed of Agreement	Application
1. Deed of Agreement for Lease (Contestable ASP/1 Connection)	<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
2. Deed of Agreement for Lease (Ausgrid Augmentation Works)	
3. Deed of Agreement for Easement (Contestable ASP/1 Connection)	<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
4. Deed of Agreement for Easement (Ausgrid Augmentation Works)	

2.4.1 Red line survey

A registered surveyor is responsible for preparing the red line survey.

Where an easement, lease or licence is required by Ausgrid, the customer must provide a copy of the survey plan showing in red ink the centre line of the electricity cables (or cable ducts) as installed with offsets to the easement or other boundaries and the location of any substation.

For underground construction this is best achieved by preparing the plan after excavation and before backfilling.

The registered surveyor must sign one copy and provide a hard copy together with an accompanying statement to certify that the information shown in red ink has been accurately located to their satisfaction.

2.5 Ausgrid's Monopoly Services

Ausgrid provides a number of services that facilitate the contestable works carried out by ASPs. These services are called monopoly services. Examples of monopoly services include design information, design certification, inspection, access permit, substation commissioning (electrification), notice of arrangement and authorisation. Full descriptions of these services and their associated fees are contained in the Connection Policy.

2.6 Ownership of assets

Once the works have been satisfactorily completed, inspected and electrified the newly constructed assets will be accepted, owned and maintained by Ausgrid as part of its distribution network.

The infrastructure to be transferred may have been installed in public roads, or on the customer's premises within suitable easements or leases.

The electrical infrastructure that will transfer to Ausgrid may include:

- poles and overhead mains,
- underground cables and associated ducts and cable pits,
- pillars, and
- substations.

Ownership of certain associated non-electrical infrastructure will also transfer to Ausgrid and this may include:

- footings and piers associated with kiosk substations that are constructed directly on the ground,
- cable pits, and
- concrete ductlines within a customer's premises,

but would not include a customer's building enclosure for a chamber substation.

During the construction phase the ASP/1 who has been engaged by the connection applicant will be required to rectify all defects found during routine inspections.

If defects are found within 3 years after electrification, Ausgrid will request the responsible ASP/1 to rectify the defects if it can be done with minimal disturbance to other customers or network operations. Alternatively, Ausgrid will rectify the defects and bill the ASP/1 or the customer directly for the associated costs.

3 Types of Development

3.1 Introduction

The process described in this document covers the following types of developments or connections:

- multi-tenanted residential developments,
- commercial or industrial developments,
- developments in non-urban or rural areas,
- community title developments,
- connections to embedded networks,
- streetlighting projects, and
- asset relocation projects.

The property developer is responsible for ensuring that a suitable electricity connection is available for each lot or end-use customer in the subdivision or other type of development, as outlined below.

3.2 Multi-tenanted residential developments

Examples of multi-tenanted residential developments include:

- company title and strata title home units,
- residential flats (whether strata title or not),
- non-subdivided dual occupancy developments, and
- subdivisions such as Underground Residential Distribution (URD).

3.3 Commercial or industrial developments

These are any non-residential individual customer or group of customers, small or large. Examples include:

- schools, shopping centres, office blocks, swimming pools,
- service stations, factories, workshops, and
- industrial subdivisions.

3.4 Developments in non-urban or rural areas

Developments in non-urban or rural areas may consist of but are not limited to:

- Individual or groups of customers who require a new or increased electricity connection and the proposed connection requires an extension of the existing network. Customers are encouraged to determine if other adjacent property owners might wish to join in sharing the connection costs,
- Non-urban subdivisions where the developer is usually required to fund the High Voltage (HV) as well as the LV infrastructure for the development. The HV infrastructure is likely to be dedicated to the development in a rural area and the developer will be required to fund the dedicated infrastructure, and
- Non-urban commercial or industrial developments such as service stations, farms, pumping stations, mines, or business parks.

3.5 Community Title Developments (CTDs)

Community Title Developments are developments where the common estate is held in private ownership and may include residential or commercial or mixed developments.

Within new CTDs the customer (or community, as defined in the CTD management statement) must install, own, and operate all the LV reticulation, including all streetlighting. This will be the customer's private electrical installation and will not form part of Ausgrid's network.

If HV cables and any substation(s) are necessary within a CTD to supply the development they must be installed in accordance with Ausgrid's network standards (including separation from other services) and they

will form part of Ausgrid's network. Note: Different arrangements are applicable to HV customers, refer to NS 195 *HV Customer Connections (HVCs)* and the Service and Installation Rules of NSW

Leases, easements and rights of way are required for CTDs for Ausgrid's HV cables and substations, as for any other private land.

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

CTDs will be provided with a single point of supply (connection point) (or point of demarcation), from Ausgrid's network, either at LV or HV, as applicable. Where supply is taken from Ausgrid's LV network a point of supply must be provided as close as possible to the street boundary (within 1 metre) and include the metering for the streetlighting.

3.6 Connections to embedded networks

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,
- Ausgrid's network standards, including NS 195 *HV Customer Connections (HVCs)*, and
- 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.

3.7 Private generation

If a customer is applying to connect a grid connected generator to operate in parallel with the Ausgrid network, either permanently or for extended periods for any reason, special arrangements and costs may apply.

This will usually require the customer to comply with:

- the process detailed in the NER, and
- the Service and Installation Rules of NSW.

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

Many of the requirements of this document will apply and customers should also refer to Ausgrid's ES 11 *Requirements for Connection of Embedded Generators* and NS 194 *Connection of Embedded Generators*, which deals with technical aspects.

3.8 Short term connections

A short term 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.

These connections are treated the same as a permanent connection. The full cost of establishing the connection in accordance with the Connection Policy and the subsequent cost of disconnection and removal and return to Ausgrid of any reusable equipment must be borne by the connection applicant.

Ausgrid may also require a refundable bond to be provided by the customer to cover the cost of Ausgrid disconnecting and removing these assets.

4 Infrastructure Funding

4.1 Overview of funding responsibilities

This table describes how different types of construction work are typically funded.

If the works are funded by ...	then they are ...
customer	contestable, except for monopoly services carried out by Ausgrid
Ausgrid	shared assets and not contestable

4.2 Ausgrid responsibilities

As well as funding shared or non-contestable works, Ausgrid is also responsible for funding and carrying out some categories of customer connection work, which would otherwise be contestable. These categories of works are known as 'connection works funded by Ausgrid' and are outlined in the Connection Policy.

4.3 Customer responsibilities

As well as funding contestable works, the customer is also responsible for the costs of:

- altering, relocating or removing a connection asset,
- installing alternative or additional equipment to what Ausgrid has assessed is necessary for a connection,
- establishing and disconnecting a short term connection, and
- installing streetlighting.

4.4 Ausgrid funded work

4.4.1 Introduction

In certain situations, Ausgrid may ask the ASP/1 who has been engaged by a customer to construct infrastructure that Ausgrid must fund. Ausgrid will pay the ASP/1 for this work if it is appropriate for the ASP/1 to carry out the work, in accordance with the Model Standing Offer Standard Connection Services for Contestable ASP/1 Premises Connections no greater than 11 kV and the ASP Level 1 Authorisation Agreement.

Examples:

- the installation of shared HV cables within a URD, in conjunction with developer funded LV trenching and cable installation,
- the installation of a LV network connection for a customer substation in conjunction with the developer funded HV trenching and cable installation, and
- installation of additional ducts.

4.4.2 Spare Ducts

The customer will fund the supply and installation of spare ducts that are:

- dedicated to the customer, for example, two dedicated HV cables supplying a customer substation, the customer funds two spare ducts, installed as a precaution against future cable failure, or
- installed as a standard Ausgrid requirement in a new development.

4.5 Asset relocation works

Customer requested asset relocation works, which also includes undergrounding of existing overhead lines and replacing existing bare overhead conductors with Aerial Bundled Cable (ABC) or covered conductor, are entirely funded by the customer, whether contestable or not.

5 Initial Enquiry and Assessment

Developers should make a connection application or preliminary enquiry using the relevant form, which are listed below. These forms and their associated guides are available on Ausgrid's website via the following link <http://www.ausgrid.com.au/connectingtothenetwork>

- Preliminary Enquiry Form NECF-01,
- Connection Application Form NECF-03 - Large, Multiple and Remote Connections,
 - Guide to Completing Connection Application Form NECF-03,
- Connection Application Form NECF-04 - Embedded and Standby Generation,
 - Guide to Completing Connection Application Form NECF-04.

We also recommend that customers submit their preliminary enquiry or connection application well in advance of the required supply connection date to allow sufficient time to assess the connection requirements and construct any contestable works and/or upstream augmentation work.

6 Infrastructure Design Requirements

6.1 Design information from Ausgrid

This section of the document defines a number of infrastructure design requirements that developers and ASPs must comply with.

The design information package will be provided after a completed connection application is submitted, the Design Contract – Connection Assets is signed/accepted and returned, and the design stage charges are paid including the design information fee as listed in the Design Contract – Connection Assets.

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, equipment types, linkage point (refer to the Connection Policy) 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.

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 onsite, prior to their transportation. The design information will also include any relevant safety hazard information applicable to the substation site where known, such as the presence of confined spaces, asbestos, CCA poles, environmental GIS report etc.

The design information will also include an electronic copy of Ausgrid's existing distribution system in the vicinity in CAD format (.dwg). Note: 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.

Ausgrid's design information will specify the connection works that adequately meet the customer's assessed electrical load requirements. If a customer requests any alternative or additional infrastructure and Ausgrid agrees to this request, the customer will be required to fund any additional costs incurred by Ausgrid, in accordance with the Connection Policy. Some examples of these alternative or additional works include:

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

Refer to the Design Contract – Connection Assets for the currency periods for design information and design certification.

6.2 Environmental impact assessment

The Environmental Planning and Assessment Act 1979 (EP&A Act) is the primary piece of legislation in NSW with respect to planning and development. Most activities conducted on Ausgrid's network are carried out under Part 5 of the EP&A Act where Ausgrid is the determining authority.

Where Ausgrid is the determining authority for a proposed activity, the initial Part 5 environmental assessment must be undertaken in accordance with Ausgrid's NUS174 *Environmental Procedures*, including NUS 174A *EIA Worksheet* and NUS174B *EIA Guidelines*. Only Ausgrid employees or an ASP current in Ausgrid's EIA Training can assess an EIA Worksheet. All EIA Worksheets must be verified by Ausgrid. Activities which are assessed as high risk or that trigger specific criteria / approvals / issues need to be referred to Ausgrid's Environmental Services for detailed assessment. This detailed assessment may take the form of a review of environmental factors (REF).

As the environment can change between the time an EIA Worksheet is verified and construction commencing, an EIA Worksheet should be revisited if 2 years have lapsed since verification to ensure that any sensitive issues have not changed.

Consultation must be undertaken as part of the EIA Worksheet process. The Electricity Supply Act 1995 requires 40 days notice to be given to local council for all works other than routine repairs, maintenance and emergency works. In addition, SEPP (Infrastructure) 2007 requires 21 days notice for certain types of works in certain areas to authorities and adjoining land occupiers. Due consideration must be given to any submissions made.

6.3 Infrastructure design

When the works are in ...	and the supply is ...	then the new network construction will be ...
urban area	HV	underground with at least one spare conduit per cable
	LV supplied underground	underground
	LV supplied overhead	underground In addition, a customer requiring only ASP/2 works will be required to make provision for underground connection to a future underground network for: <ul style="list-style-type: none"> • a commercial property frontage greater than 50 metres • a multiple residential development (e.g. home units or villa homes) not including duplexes
		overhead, using ABC construction for all other premises
non-urban area	HV	overhead, unless underground is practical and justified
	LV	overhead, using ABC construction, unless underground is practical and justified

If a developer requests underground infrastructure and the Ausgrid policy only nominates overhead infrastructure, the developer must fund any additional costs incurred by Ausgrid in providing any underground (Ausgrid funded) shared assets that would otherwise have been overhead construction, in accordance with clause 6.1.

The developer must fund:

- the difference in cost, and
- the cost of dismantling any existing (redundant) overhead mains, when the new underground electricity supply is available.

This work will be included in the design information that is provided to the ASP/3 so that it can be included in the complete infrastructure design that Ausgrid will certify and the ASP/1 engaged by the developer will construct.

6.3.1 Supply voltage

Ausgrid will determine the supply voltage for the development in consultation with the customer. The development size and location will, in most cases, determine the available options for supply voltage.

6.3.2 Urban subdivisions

This table describes the construction to use for different types of urban subdivisions:

When the new subdivision is ...	then the construction will be ...
residential	underground
commercial or industrial	underground
in a 1/100 flood prone area (as assessed and approved by Ausgrid on a case by case basis)	overhead

6.3.3 Developments in existing overhead mains areas

In a development where existing roads contain overhead mains, and where underground service mains are required in accordance with the policy above, Ausgrid may initially connect the underground service mains from the existing overhead mains. This may require an underground road crossing to a suitable pole within the development which must be funded by the customer.

Where a development provides for the underground conversion of an existing dwelling supplied from the overhead mains, the customer will fund the cost of conversion.

Where the customer has requested underground reticulation where the policy calls for overhead construction, Ausgrid will only fund shared assets to the equivalent cost of an overhead system and the customer must pay the difference.

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

6.3.4 Underground service mains

The underground service mains in residential subdivisions are considered to start at the service pillar, 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.

6.3.5 Substation design

Ausgrid network standards that apply to the location and design of substations are available on the Ausgrid website.

The ASP/3 must design the substation installation considering:

- It's ability to supply the load required by the customer under normal and emergency conditions (that is, if a component should fail in service), and
- The need to carry out routine maintenance requiring substation equipment to be taken out of service.

The substation equipment will include transformers and HV and LV switchgear. Ausgrid will base transformer sizing on its assessment of initial load plus a reasonable allowance for growth and will provide the minimum necessary to supply the load. Equipment will not be duplicated to cater for failures of substation equipment. For example, two transformers will not be supplied where one fully loaded transformer is adequate to supply the load.

The Sydney CBD is supplied by a triplex cable network and all substations designed for the Sydney CBD network must be designed to connect to the triplex network.

6.3.6 Identifying HV cables for designs

Ausgrid will not de-energise its in-service HV cables for an ASP/3 to identify cables for design purposes. Ausgrid will assist the ASP/3 to identify these cables where this cannot otherwise be done by reference to available drawings. The charge for this assistance will be an hourly rate based on the monopoly fee for design information.

6.3.7 Pit Access Services

This table describes who can provide pit access services to an ASP/3 for design purposes.

When an ASP/1 ...	then ...	and the charge will be ...
has not been appointed to the project	Ausgrid can provide these services	based on the design information hourly rate
has been appointed to the project	the ASP/3 can engage the ASP/1 to provide these services	agreed with the ASP/1

Where Ausgrid provides pit access services, the ASP/3 should consult with the local Contestability Project Coordinator, nominally 4 weeks in advance to ensure that Ausgrid staff are available to provide the service.

6.3.8 HV connection

The HV connection to all new kiosk and chamber substations must use two dedicated or looped-in underground cables. This applies whether supply is taken from overhead or underground existing feeders.

6.3.9 Upgrading of existing customer substations

Proposals which depend on augmentation of an existing Ausgrid substation to accommodate a developers additional load requirements must be submitted to Ausgrid for 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 at the time of installation), will necessarily be suitable for augmentation in accordance with current network standards.

Where approval is granted subject to the completion of modification works at the substation, the associated costs will be determined in accordance with the Connection Policy.

6.4 Streetlighting within dedicated roadways of new subdivisions

Streetlights 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 streetlighting 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.

6.5 Streetlighting in private roads and areas

Installation of streetlighting 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. These will be private, separately metered electrical installations, which will be owned, controlled and maintained by the customer. Refer to the Service and Installation Rules of NSW, for the signage requirements for these installations.

6.6 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 *Part A 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.

7 Responsibilities During Construction

7.1 Overview of construction responsibilities

This table describes who constructs different types of connection work.

When the works are ...	Then they are constructed by ...
Contestable	Developer's ASP/1 and ASP/2
Shared, or non-contestable	Ausgrid. Alternatively, Ausgrid may reimburse the developer towards the cost of constructing the shared assets in accordance with clause 4.4

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 ASP/3 engaged by the customer 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.

7.2 ASP/1 responsibilities

The ASP/1 is responsible for ensuring that before their employees start construction works, they are:

- Authorised by Ausgrid for work on or near its network assets, and
- Assessed for their competence in complying with any unique or complex aspect of Ausgrid's requirements.

If these employees cannot be authorised or have their competence established, Ausgrid will not permit them to carry out the works, and will inform the developer, refer to the ASP Level 1 Authorisation Agreement and the Model Standing Offer Standard Connection Services for Contestable ASP/1 Premises Connections no greater than 11 kV.

7.3 Safety and environmental assessment

Before starting the construction work, the ASP/1 must make a safety and environmental assessment of the work site. In particular if an existing substation is to be removed and the equipment recovered particular attention must be made to working in the substation. This will include safe work procedures for working in a confined space and working with asbestos, if applicable.

7.4 Site survey

Immediately before work starts, a registered surveyor must survey and peg all easements and a site and lot boundary at the customer's cost. The pegs must suitably define all curves and bends. Any required re-pegging will be at the customer's cost.

7.5 Joint use trenching

The customer is responsible for negotiating joint use trenching arrangements with other service providers or utilities, on terms acceptable to Ausgrid.

7.6 Pit access

The ASP/1 must carry out the accessing, de-watering and cleaning of existing underground cable pits, when this is required together with contestable cable work.

This includes any associated work such as confined space safety procedures and traffic management, as well as taking the necessary safety measures where asbestos may be present.

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, if possible.

7.7 Materials

Electrical components and materials necessary to construct the HV and LV reticulation will be available for purchase from Ausgrid 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 or email mmchatton@ausgrid.com.au.

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.

All materials must be **new** and **approved** in accordance with Ausgrid's NUS 181 *Approval of Materials and Equipment and Network Standard Variations*. This may include certification that certain equipment complies with Ausgrid's specifications. Ausgrid's Compliance Officers may also require witnessing the type tests on certain substation equipment not provided by Ausgrid.

Ausgrid will in some instances supply and fund certain substation equipment, which may later be economically recovered and reused and such equipment will be specified in the design information (see clause 6.1). Ausgrid reserves the right to supply the materials which it funds. Any such equipment:

- must be so used by the customer,
- remains the property of Ausgrid at all times, and
- will be unavailable to the customer for installation after six months has elapsed from the date on which Ausgrid has notified the customer that the equipment is available, and Ausgrid gives no undertaking as to when any substitute material can be provided after this period has elapsed.

The ASP/1 must arrange for the delivery, installation and safekeeping of the Ausgrid funded materials listed on the Authority to Issue Ausgrid Funded Materials form. The lead time for Ausgrid funded equipment and material is 12 weeks.

In respect of any equipment to which this clause applies, Ausgrid will not be liable to the customer for any loss or damage arising from:

- any delay in the supply of the equipment, or
- any misdescription of the equipment or the quantities thereof in the purchase order (except where this is as a result of Ausgrid's negligence).

The risk in respect of any such equipment passes to the customer upon either the customer or the ASP/1 taking delivery of it (whether or not title is also transferred).

7.8 Redesign and re-certification

If design issues arise during construction that cannot be treated 'as built' then redesign and re-certification will be required. The developer is responsible for the associated costs.

7.9 ASP/1 responsibility for ASP/2 work

An ASP/2 must carry out any service line work (for example, disconnecting and reconnecting overhead and underground service mains) that is associated with a Level 1 contestable project.

Where service line work is required, the ASP/1 is responsible for ensuring that the ASP/2 engaged to do the work 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
- Independently carry out the work if they possess the appropriate Level 2 accreditation and authorisation.

The ASP/1 is also responsible for ensuring that the ASP/2 submits all required Notification of Service Work (NOSW) forms.

7.10 Advance notice to Ausgrid

Ausgrid schedules its projects well in advance. So where Ausgrid will be performing a segment of the construction works, the developer and ASP/1 must notify Ausgrid well in advance of the program for connecting the development, nominally 4 weeks in advance.

7.11 Ausgrid responsibilities during construction

Ausgrid will perform the following tasks deemed non-contestable during the construction phase of a project

- All HV cable identification, stabbing and phasing,

NOTE: The ASP/1 will still carry out any associated customer funded excavation and jointing,

- HV testing of installed 11kV underground polymeric cables before electrification, where the cables are to be locally energised at existing Ausgrid substations and remote energisation cannot be performed (refer to NS 161 *Specification for Testing of Underground Cables*, clause 5.11.1,
- Induced HV tests on new transformers supplied and funded by Ausgrid and delivered to site by the manufacturer,

EXCEPTION: Where the customer is funding the transformer, the customer must arrange and fund this testing work,

- The design and construction of certain complex aspects of substations, usually but not always where relay protection and SCADA is involved,
- All work within existing substations (including Pole Transformer substations) that are connected to the network and are energised, and
- Certain categories of customer connection work that Ausgrid is required to construct.

7.12 ASP/1 work in existing substations

Ausgrid will carry out and fund work within existing energised substations. This work will not be contestable. This includes:

- All work within existing substations including Pole Transformer (PT) substations that are connected to the network and are energised,
- 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.

The ASP/1 can only work in existing substations if:

- The entire substation is completely de-energised (that is, all sources of HV and LV are appropriately isolated) and placed under access permit for the duration of the work, or
- The area that the ASP/1 needs to access can be quarantined from live parts of the substation by:
 - Locked doors, or
 - Equivalent 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 EP and whilst all other LV distributors are isolated and the PT LV fuse elements are removed.

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

7.13 Inspections

The Ausgrid Compliance Officer will inspect the connection works and will report on non-conformances (technical and safety), which will be recorded against the person responsible, as well as the ASP/1.

This includes all non-conformances in the contestable connection works due to the workmanship of **all** service providers employed by the customer to construct those works. If non-conformances are detected in the civil works component, these non-conformances will also be reported to the ASP/1 and possibly to the customer. Any associated works carried out by the ASP/1 will not be accepted until these non-conformances are rectified.

7.14 Field recording of 'as built' assets

This work is completed by Ausgrid (GIS group) in conjunction with the ASP/1. The ASP/1 must notify the Ausgrid GIS group (gis@ausgrid.com.au) 4 working days prior to commencing any underground works i.e. cable pulling, duct laying or cable jointing, as part of any contestable project.

7.15 Testing, Inspection and Connection

Testing must be carried out in accordance with Ausgrid's relevant network standards, including NS 230 *Testing of Distribution Substations*.

All HV and LV underground cables and associated HV installations must be tested as required by Ausgrid's network standards prior to electrification.

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 relevant agreements and contracts. 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:

- pole installation,
- 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, and
- testing of works.

8 Defects Liability Period

8.1 ASP/1 responsibility

The three year defects liability (rectification) period begins when the works are electrified. During this period, the ASP/1 is responsible for repairing its construction defects, or for the cost of Ausgrid repairing those defects.

NOTE: Refer to the Design Contract – Connection Assets, for the corresponding three year ASP/3 designer's warranties.

8.2 Repairing defects after electrification

This table describes who repairs and pays for defects.

When defects caused by the ASP/1's work are found ...	then ...
prior to or at electrification	the ASP/1 will arrange and fund repairs
subsequent to electrification	the ASP/1 will arrange and fund repairs if the work can be undertaken by the ASP/1 in compliance with clause 7.13 otherwise Ausgrid will arrange repairs and invoice the ASP/1 or customer

Ausgrid will carry out repairs where:

- Electricity supply to other customers is compromised,
- Safety is compromised, or
- The ASP/1 does not carry out the repairs within Ausgrid's specified time limit.

8.2.1 Who pays for repairing defects

This table describes who pays for repairing defects.

When the cause of a defect is ...	then Ausgrid will ...
ASP/3 design work	invoice the ASP/3 or customer (if not rectified by the ASP/3)
ASP/1 construction work	invoice ASP/1 or customer (if not rectified by the ASP/1)
damage caused by a third party	seek costs from the third party
unclear	fund repairs

If payment for repairs carried out by Ausgrid is not received within the specified time limit, Ausgrid may pursue recovery of the balance directly from the ASP's security.

Ausgrid's repair costs, including any associated fault location testing and investigation, and circuit breaker fault overhauls, will be charged on a full cost recovery basis.

9 Constructing Connection Assets

9.1 Responsibilities for installing a direct distributor

A direct distributor is a service line to a customer's installation (connected at the main switchboard or link box) that is directly connected to dedicated LV protection within Ausgrid's substation that is located remote from the customer's premises, (network substation on public land or a customer substation on another customer's premises).

An ASP/1 must 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.

Exceptions

Ausgrid will carry out the (non-contestable) work within the substation supplying the direct distributor where:

- The live portion of the substation cannot be locked off and made safe, or
- The style of switchgear is not covered in a network standard.

9.1.1 Direct distributor vs consumers mains

This table describes the classification and compliance requirements of LV mains that originate at the substation LV board and terminate directly at the customer's installation.

When the LV mains are located ...	then they are classified as ...	and must comply with ...
partly in the public roadway	a direct distributor	relevant network standards and the Service and Installation Rules of NSW
wholly on the customer's premises	consumers mains	AS/NZS 3000 Wiring Rules and the Service and Installation Rules of NSW
passing directly from one customer's premises to a neighbouring customer's premises	a direct distributor	relevant network standards and the Service and Installation Rules of NSW

9.2 Responsibilities for connecting the consumer mains

Electrical contractors are responsible for:

- Supplying and installing the consumers mains up to a point of entry to the substation nominated by the ASP/1 or Ausgrid,
- Providing the consumers mains cable termination lugs and suitable equipment for their installation, as required, and
- Installing the lugs on the consumers mains.

NOTE: The ASP/1 or Ausgrid may quote to install the lugs on the consumers mains, on behalf of the electrical contractor.

WARNING: Electrical contractors are **not** permitted to enter any of Ausgrid's substations to pull-in, install and connect the customer's consumer mains to the substation LV board, even if an Ausgrid standby person is present.

The following table describes who is responsible for connecting the consumer mains to the substation LV board.

When the substation is ...	then ...	and the electrical contractor must ..
new, under construction by an ASP/1 under an EP	the ASP/1 must: <ul style="list-style-type: none"> pull-in and install the consumers mains within the substation, and connect them to the substation LV board 	coordinate directly with the ASP/1 to arrange the completion of this contestable work
existing, being upgraded by an ASP/1 under an access permit		request an access permit, which requires six weeks notice
existing, and the connection work is not adequately quarantined from other live parts of the substation in accordance with clause 7.14	Ausgrid must: <ul style="list-style-type: none"> pull-in and install the consumers mains within the substation, connect them to the substation LV board, and carry out any other work to safely carry out this customer requested connection, at no charge to the electrical contractor, during normal working hours	provide Ausgrid with a minimum of six weeks notice so that these services can be scheduled provide the consumers mains cables termination lugs and suitable equipment for their installation, as required

10 The Connection Process

This table describes the tasks involved in the connection process, and who is responsible for each.

Stage	Responsibility	Description	Fees/timeframes
Planning phase			
1	Customer	Submits connection application, Where appropriate, one copy of the council approved development plan showing the complete development layout, including lot frontages. For subdivisions, an electronic copy of the development layout plan in pdf format	As early as possible
2	Ausgrid	<ul style="list-style-type: none"> Assigns an Ausgrid officer to the project, Carries out initial assessment. Carry out network studies to work out the most economical method to meet the requirements including determining whether any augmentation works on Ausgrid's network are required, Advise the customer of the evaluation, Issue design contract offer. Ausgrid's design fees will be included in the design contract offer 	Maximum 10 days from receipt of connection application, Some developments however, may require more extensive investigation by planning and engineering staff. If this is the case Ausgrid may ask for extension of time to complete the studies
3	Customer	Accept design contract offer and return the acceptance form. A scanned copy of the signed acceptance, emailed as a pdf is acceptable, The customer must pay the Ausgrid design fees	Pay the design fees: design information fee, design administration fee, design certification fee
Design Phase			
4	Ausgrid	Ausgrid will send the customer: <ul style="list-style-type: none"> A Design Information Package that will provide sufficient information necessary to enable the design, The relevant DoAs for leases and easements that may be required for infrastructure on land owned by the customer 	The design information is valid for a maximum period of 12 months from the date that it is provided by Ausgrid, Where a customer proposes to use a certified design which has gone beyond this currency period, they must first check with Ausgrid to ensure the certified design is still valid. Additional fees may need to be paid
5	Customer	Engages ASP/3 to do the design work	
6	ASP/3	Prepares design and submits to local council and other relevant parties for consultation, Under ESA 1995, the ASP/3 must: <ul style="list-style-type: none"> Submit a notice to the local council advising of proposed electricity works, Allow a minimum of 40 days for the council to respond, and Give proper consideration to any submissions. Under SEPP 2007, when works include a substation of any type, in addition to notifying the local council of a proposed substation, the ASP/3 must:	

Stage	Responsibility	Description	Fees/timeframes
		<ul style="list-style-type: none"> Notify the occupiers of adjoining land, Allow a minimum of 21 days for a response, and Give consideration to any response received 	
7	ASP/3	Finalises and submits complete design package and EIA to Ausgrid	Ausgrid will not certify the design until the following required consultation periods have lapsed: Electricity Supply Act, 40 days notice, State Environmental Planning Policy (SEPP) 2007, 21 days notice
8	Ausgrid	<ul style="list-style-type: none"> Carries out design certification check, Provides certification (or design comments), Verifies the Environmental Impact Assessment 	<ul style="list-style-type: none"> Ausgrid will check that the 40 day notice period has expired, If the design is non-compliant, a resubmission may be necessary for rechecking before certification, Design Rechecking Fee if the design is not compliant, Network standard amendments occur during the currency period, Development details are amended after the supply of initial information or engineering drawings, Design issues arise during construction that cannot be 'as built'. <p>Design certification is valid for a maximum period of 12 months from the date that it is provided by Ausgrid. For chamber substations however, this period is 2 years.</p>
		<ul style="list-style-type: none"> Send the Connection Offer to the applicant, Ausgrid will notify the applicant of the construction fees 	<ul style="list-style-type: none"> Access fees, Substation commissioning (electrification) fee, Inspection fees, Substation contribution
9	Customer	<ul style="list-style-type: none"> Engages an ASP/1 for the construction work, Submits executed DoAs for any leases and easements that might be required, Pays all outstanding fees 	Construction doesn't start until DoA's are submitted.
10	Ausgrid	<ul style="list-style-type: none"> Orders substation, if required, Generates Ausgrid funded material authority form, Executes DoAs, Notifies Compliance section for construction 	

Stage	Responsibility	Description	Fees/timeframes
Construction and Electrification Phase			
11	Ausgrid	<ul style="list-style-type: none"> Assigns a Compliance Officer, Informs the ASP/1 of the Compliance Officer details 	Within 10 working days of Connection Offer being accepted
12	Ausgrid, ASP/1, and ASP/3	<p>Attend initial site meeting:</p> <ul style="list-style-type: none"> establish the milestones and milestone dates for the project <p>The purpose of the meeting is to:</p> <ul style="list-style-type: none"> review the job, discuss and agree how the ASP/1 intends to construct the works, and establish the anticipated completion date for the project, <p>Ausgrid to agree on the critical dates before construction starts, After the site meeting the ASP/1 must submit the project planning form</p>	Minimum 10 days after being issued to the Compliance Officer
13	ASP/1	Provides notification of milestone inspections Notify Ausgrid (GIS) prior to starting any underground works on a contestable project (see clause 7.15)	Minimum four working days written notice from ASP/1
14	Ausgrid	Carries out milestone inspections	Reinspection fees
		<p>Arranges network access on request:</p> <ul style="list-style-type: none"> Clearances to work, Access permits for work associated with construction 	<ul style="list-style-type: none"> Minimum two weeks written notice (CTW), Minimum six weeks written notice (AP)
15	Electrical contractor	<p>Submits private installation items for review:</p> <ul style="list-style-type: none"> Final main switchboard drawings, Customer's protection grading curves and circuit breaker settings, Valid CT metering form(s), Valid CCEW and NOSW forms as applicable, Application for Connection and attachments 	Minimum six weeks before proposed electrification
16	Customer and ASP/1	<p>Provide request for electrification:</p> <ul style="list-style-type: none"> completed TEI sheets, substation testing sheets, Operator Request Form (ORF), <p>Prerequisites:</p> <ul style="list-style-type: none"> Customer/ASP/1 have paid all fees and charges, Easements, leases or licences required have been granted to Ausgrid, stamped with stamp duty and registered at Land and Property Information NSW (if applicable), and Customer has provided a red line survey plan 	Minimum six weeks before proposed electrification
	Ausgrid	<p>Arranges electrification</p> <ul style="list-style-type: none"> Reserves resources Coordinates outage and electrification related monopoly services 	

Stage	Responsibility	Description	Fees/timeframes
	ASP/1	Continues construction	Construction can continue after the request has been submitted, but must be satisfactorily complete with any non-conformances rectified two weeks before electrification
17	Ausgrid	<p>Conducts ready for electrification inspection, If there are major non-conformances:</p> <ul style="list-style-type: none"> • Ausgrid will cancel the scheduled electrification date. This will be a delay, • The ASP/1 must: <ul style="list-style-type: none"> – rectify or complete works, or submit outstanding paperwork, – book a new ready for electrification inspection, – submit a new ORF with a revised electrification date 	two weeks before proposed electrification
	ASP/1	<p>Submits substation electrification paperwork pack:</p> <ul style="list-style-type: none"> • completed substation electrification paperwork pack and check sheet, • preliminary field recordings, • red line survey, • TEI sheets, <p>On the electrification date, the ASP/1 must provide:</p> <ul style="list-style-type: none"> • authorised staff for the works to be completed, • permits to carry out the work, • site project manager, or project coordinator, and • Tools/equipment, <p>Once the electrification has been completed, the ASP/1 must remain on site to ensure that it has been successful. They may need staff to make adjustments, for example, to correct the phasing</p>	
18	Ausgrid	Checks that final private installation items have been suitably addressed	two weeks before proposed electrification
19	Customer	Arranges installation of switchboard	
	Installation Inspector	Inspects switchboard	
20	Ausgrid	<p>Electrifies,</p> <p>On the electrification date, Ausgrid provides:</p> <ul style="list-style-type: none"> • Access permits, • Clearances to work, and • Monopoly services, for example, earthing, cable identification, stabbing and phasing, <p>Post electrification,</p> <p>Following the electrification the Compliance Officer will issue a project assessment form. The ASP/1 must return the signed and completed form within 2 days</p>	

Stage	Responsibility	Description	Fees/timeframes
21	ASP/1	Submit as built drawings of designed assets constructed immediately prior to electrification, such as commissioning joints	within two business days following electrification

11 Dictionary

Accredited Service Provider (ASP)	An ASP is a person accredited in accordance with the NSW Accreditation of Service Providers to Undertake Contestable Services scheme as a Level 1 ASP (ASP/1) or as an Accredited Designer (ASP/3) or as a Level 2 ASP (ASP/2).
Community Title Development (CTD)	Community Title Developments are developments where the common estate is held in private ownership.
Contestable Works	Contestable works are 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.
Deed of Agreement	A Deed of Agreement (DoA) is a legally enforceable agreement between Ausgrid and a landowner for the future granting of a lease and/or easement by the landowner to Ausgrid.
Monopoly Services	Monopoly services are services that facilitate contestable works by ASPs that only Ausgrid can carry out.
Notice of Arrangement	A Notice of Arrangement is a written notice that confirms that satisfactory arrangements have been made with Ausgrid for the provision of an adequate electricity supply to the premises.
Ready for Electrification	Ready for electrification means the date on which Ausgrid determines that all requirements have been met, and is 2 weeks prior to the date for electrification.
Shared Works	Shared works are works associated with the connection of electricity to the development, which also benefit or are shared by other customers. With the exception of connections to large load customers and rural customers, these works are not contestable and will be funded by Ausgrid unless otherwise agreed.
Security	The security is a bank guarantee(s) provided by the ASP/1 to Ausgrid, to act as surety for rectification of any defects arising during the three year defects liability (rectification) period, under the ASP Level 1 Authorisation Agreement.

12 Acronyms used

Acronym	Meaning
AER	Australian Energy Regulator
AP	Access Permit
ASP	Accredited Service Provider
CCEW	Certificate of Compliance Electrical Work
CTD	Community Title Development
CTW	Clearance to Work
DBYD	Dial Before You Dig
DoA	Deed of Agreement
DTIRIS	Department of Trade & Investment, Regional Infrastructure & Services
EIA	Environmental Impact Assessment
EP	Equipping Permit
EP&A	Environmental Planning and Assessment Act
ESA	Electricity Supply Act
HV	High Voltage
HVC	High Voltage Customer
SAP	Integrated Asset Management System (data capture sheet)
IPART	Independent Pricing and Regulatory Tribunal
LV	Low Voltage
NECF	National Energy Customer Framework
NOSW	Notification of Service Work
ORF	Operator Request Form
PCB	Polychlorinated Biphenyls
RMS	Roads and Maritime Services (formerly RTA)
SEPP	State Environment Planning Policy
TEI	Technical Equipment Inventory (sheets)
URD	Urban Residential Distribution

APPENDIX A When substation equipment is no longer required

A1 Customer responsibilities

When customer substations are decommissioned, relocated or altered, and the work is contestable, the customer/ASP/1 are responsible for the:

- Recovery and return to Ausgrid's nominated depot location of any redundant reusable equipment, for example transformers and HV switchgear, in an as found condition, and in a safe and timely manner, and
- The recovery and disposal from these sites, of other redundant substation equipment not required by Ausgrid.

A2 Return of substation equipment

The Design Information Package that is provided by Ausgrid so that the ASP/3 can prepare the infrastructure design will include an inventory of the Ausgrid substation equipment that must be returned to Ausgrid. Oil in oil filled equipment must be tested for PCB content before arrangements are made to transport the equipment.

This table describes what happens when substation equipment is returned.

Stage	Description
1	ASP/1 makes a safety and environmental assessment of the site and equipment
2	ASP/1 takes an oil sample from the equipment and delivers the sample to Ausgrid
3	ASP/1 arranges for Ausgrid to carry out PCB testing of all oil filled equipment samples
4	Ausgrid tests the sample for PCB and the general condition of the oil and sends the test results to the ASP/1
5	<p>Is the equipment being returned to Ausgrid?</p> <ul style="list-style-type: none"> • If yes, the ASP/1 must return it to the nominated depot in an as found condition and in a safe and timely manner, • If no, the customer is responsible for its disposal, NB. PCB contaminated equipment must be returned to Ausgrid

Testing the PCB concentration in equipment is needed to meet the requirements of the *Environmentally Hazardous Chemicals Act, 1985* and the *Polychlorinated Biphenyl Wastes (PCB) Chemical Control Order 1997*.

For oil filled equipment manufactured prior to 1997 (or if the date is uncertain), the oil will need to be checked for PCBs. This can be obtained either from the PCB register or via an oil test undertaken at a suitable NATA accredited laboratory.

Ausgrid's preferred option for PCB oil testing is to use the Ausgrid Network Test Insulation Assessment Laboratory located at Chatswood. Alternatively, external labs used for PCB oil testing must be NATA accredited for sampling PCBs in oil.

Oil filled equipment manufactured during or after 1997 is not expected to contain PCBs.

Oil samples for PCB testing must be undertaken in accordance with these instructions to meet the necessary NATA and regulatory requirements.

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 LV boards. Refer to clause 6.1 for the relevant design information, which will be provided by the local Contestability Project Coordinator.

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 Contestability Project Coordinator,
- (b) The need for the oil test may be waived if the ASP/1 assumes that Scheduled PCB is present and handles and transports the oil filled equipment accordingly, i.e. with the appropriate licence, see Note (c) and (d) below,
- (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,
- (d) Scheduled PCB contaminated oil and oil filled equipment is classified as a Dangerous Good and is subject to the requirements of the Dangerous Goods (Road and Rail Transport) Act 2008. ASP/1s who can not meet these requirements must subcontract this segment of the work to suitable persons.

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 6.1. The ASP/1 must contact the depot contact officer a minimum of five 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.

A3 Oil sample procedure

These requirements apply when sampling PCB oil or equipment:

1. Collect PCB oil samples in clean jars. Jars and sample tags can be provided by the Ausgrid Network Test Insulation Assessment Laboratory, refer to contact details below,
2. Ensure any water is drained from equipment prior to collecting oil samples for testing,
3. Collect 30ml - 70 mL of oil for a PCB oil sample (max sample size 100ml),
4. Label sample jars with pre-printed sticker label. Alternatively a label can be tied to the sample jar if sticker labels are not available,

The following information must be included on sample labels:

- substation number and the name,
 - serial number (read from the equipment name plate) plus Ausgrid's SAP equipment number (these details should be confirmed with the ASP Compliance Officer),
 - equipment type,
 - where appropriate, the phase (for example CTs), and
 - date of sampling,
5. Care should be taken to avoid any cross-contamination of oil samples from different items of equipment,
 6. Samples must be delivered to the laboratory as soon as possible (within 7 days) of the sample date,

7. Relevant contact details, such as an email address, must be provided with all sample requests to ensure sample results can be returned.

Note: Samples which do not meet the sampling and labelling requirements may be rejected by Ausgrid's Network Test Insulation Assessment Laboratory.

Note: Oil and water drained prior to sampling equipment must be disposed of at an appropriately licensed facility. Either, label the container and await the results of PCB sampling, or request PCB testing of the waste by the licensed waste treatment facility.

Oil sample results will typically be made available within 5 working days of receipt of the sample. Results will be returned via email to the address supplied with the sample request.

A4 Oil test reports

Oil test reports provided by Ausgrid's Insulation Assessment Laboratory meet Ausgrid's requirements.

Oil test reports from external labs must include the following minimum information:

1. Asset identification number (e.g. equipment serial number),
2. PCB result in mg/kg or ppm (actual PCB concentration),
3. Test method used,
4. Limit of reporting (LOR) / Practical quantitation limit (PQL),
5. Date sample collected,
6. Date sample analysed,
7. Test report number,
8. Laboratory NATA accreditation number,
9. Laboratory contact details.

Contact	Contact details
Ausgrid Network Test Insulation Assessment Laboratory	Address - 14 Nelson St, Chatswood NSW 2067 Phone - 9410 5119 or 9410 5117 Fax - 9410 5181 Email - rkielich@ausgrid.com.au
National Association of Testing Authorities, Australia	Phone - 1800 621 666 Web - www.nata.com.au

Table 2: Local Ausgrid depot locations and contacts for the return of reusable equipment i.e. transformers and HV switchgear by ASP/1s

Ausgrid Depot	Address	Contact Officer and telephone numbers
Mount Kuring-gai	1 - 11 Woodland Way Mount Kuring-gai 2080	John Casey, 02 9410 5268, 0408 605 534
Oatley	33 - 45 Judd St Oatley 2223	Claudio Oro 02 9585 5810 0409 662 042
Homebush	25 - 27 Pomeroy St Homebush 2140	Paul Riley 02 9394 6804 0412 413 402

Zetland	130 Joynton Ave Zetland 2017	Bob Jones 02 9663 9435 0418 815 714
West Gosford	Cnr Racecourse Rd and Faunce St West Gosford 2250	Steve Murphy 02 4325 8690 0439 632 077
Maitland	84 Green St Rutherford	Daryl Redman 0407 896 061