



# Public Lighting Management Plan

Issue No. 11

<b>Purpose</b>	<p>Ausgrid's Public Lighting Management Plan is provided to give customers a clear and concise understanding of Ausgrid's strategy for accommodating obligations under the:</p> <ul style="list-style-type: none"><li>• NSW Public Lighting Code</li><li>• final determination by the Australian Energy Regulator (AER)</li><li>• relevant Australian Standards</li><li>• Ausgrid asset management policies and standards</li></ul>
<b>Applies to</b>	<ul style="list-style-type: none"><li>• Public Lighting Customers</li><li>• members of the general public</li><li>• NSW Department of Climate Change, Energy, the Environment and Water</li><li>• Ausgrid employees and contractors</li><li>• Accredited Service Providers</li><li>• Public lighting designers</li></ul>
<b>Does not apply to</b>	<ul style="list-style-type: none"><li>• Security outdoor floodlights (Lighting Solutions – also known as Energy Light)</li><li>• Community title developments and their management associations</li><li>• private developments where public lighting is not included</li><li>• private roads and private precincts</li></ul>
<b>Introduction</b>	<p>The majority of public lighting assets in New South Wales are owned and managed by Distribution Network Service Providers (DNSPs). Ausgrid is a DNSP which provides a Public Lighting Service in its distribution network area, that complies with all required regulations to meet the expectations of its customers.</p>
<b>Effective Period</b>	<p>This Plan applies to the period from 1 July 2024 to 30 June 2026</p>
<b>Key Principles</b>	<ul style="list-style-type: none"><li>• Services</li><li>• Responsibilities</li><li>• Construction</li><li>• Application</li><li>• Regulation</li></ul>
<b>Performance Measurement</b>	<p>Performance is measured against service standards and reporting requirements specified within <i>The NSW Public Lighting Code v1.3 (The Code)</i>.</p>
<b>Correspondence</b>	<p>All correspondence should be directed to:</p> <p>Council Manager – Lighting and Smart Solutions</p> <p>Ausgrid GPO Box 4009 SYDNEY NSW 2001</p> <p>ABN: 78 508 211 731</p> <p><a href="mailto:publiclighting@ausgrid.com.au">publiclighting@ausgrid.com.au</a></p>

## Scope of Document

This publication is the Ausgrid's Public Lighting Management Plan, as required by the *NSW Public Lighting Code* (The Code).

## Warning

It is the responsibility of the user to ensure that they obtain and use the current version of this document. Ausgrid may amend this document at any time.

## Document & Amendment History

Issue No.	Date	Approved by	Summary of Changes
1	June 2006	General Manager - Network	Initial
2	June 2010	Manager – Street Lighting	Draft Plan, Consultation with all Councils
3	May 2011	General Manager – Distribution Operations and Reliability	Update of Plan following consultation with Councils and change to Ausgrid brand
4	July 2014	Manager – Street Lighting	Updated Region Contact List
5	August 2014	Street Lighting Engineering Manager	Updated Vegetation Management
6	November 2014	Street Lighting Engineering Manager	Updated Ausgrid phone number and titles. Updated Guaranteed Service Levels
7	March 2015	Street Lighting Engineering Manager	Updated Vegetation Management
8	January 2016	Street Lighting Engineering Manager	Updated Region Contacts
9 DR V1.0	July 2019	Amir Moayedzadeh – Lighting Manager	Updated to reflect the requirements of the NSW Public Lighting Code 2018
9 DR V2.0	November 2019	Amir Moayedzadeh – Lighting Manager	Updated to incorporate customer and stakeholder feedback
9 DR V3.0	January 2020	Amir Moayedzadeh – Lighting Manager	Issued for final customer consultation
9	April 2020	Amir Moayedzadeh – Lighting Manager	Issued for publication
10	November 2021	Council Manager - Streetlighting and Smart Solutions	Updated to reflect the requirements of the NSW Public Lighting Code 2021 and align with Recovery Plan
11	December 2024	Head of Customer & Commercial	Updated to include changes in Public Lighting Code and use of new technologies

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# 1 Introduction

The objective of this Management Plan is to familiarise Ausgrid's customers with the applied framework, which ensures that Ausgrid's public lighting services meet the standards set by the NSW Government's Department of Climate Change, Energy, the Environment and Water, and the needs of Ausgrid customers.

Ausgrid is committed to providing safe and reliable public lighting service for pedestrian and vehicular traffic during intervals of low natural light, taking into consideration energy efficiency, environmental impacts, and technological improvements.

Ausgrid strives to work with its customers to provide them with the best possible service while meeting with the obligations of The NSW Public Lighting Code (*The Code*). Ausgrid is committed to ensuring the safe operation of its public lighting assets while giving safety the highest priority over all other aspects of network management. This Management Plan documents the objectives and strategies developed for the management of Ausgrid's public lighting assets. It does this by providing:

- A description of the maintenance strategies used to ensure public lighting assets continue to meet the required performance criteria
- A description of the processes for reporting, documenting, investigating, and repairing faults associated with public lighting assets
- A description of public lighting design and construction services and;
- Details on how Ausgrid complies with the codes, standards, and guidelines specified by the NSW Government's Department of Climate Change, Energy, the Environment and Water, and the Independent Pricing and Regulatory Tribunal (IPART)

## 2 Compliance with Codes and Standards

Ausgrid and its customers have responsibilities for compliance with codes, standards, and guidelines applicable where Ausgrid owns the public lighting assets.

### 2.1 Public Lighting Management Strategies

Ausgrid's public lighting management strategies are designed to achieve compliance with *The Code* published by the NSW Department of Climate Change, Energy, the Environment and Water. In this plan, the emphasis is placed on:

- condition monitoring and maintenance planning
- luminaire cleaning and inspection
- spot lamp replacement and disposal as applicable
- luminaire replacement and refurbishment practices
- outage detection of public lighting assets and service availability requirements via:
  - night patrols
  - public reporting facility
  - Central Management System (CMS)
- inspection, test, repair, and replacement of equipment including column/poles
- modifications to maintenance program designed to enhance availability and compliance
- tree management strategies, including informing customers of their responsibilities to manage vegetation to ensure effective illumination
- maintaining records of maintenance and a process for recording maintenance activities of Public Lighting Assets
- equipment selection and procurement programs
- Ausgrid is committed to the initiatives outlined in this plan. Ausgrid also makes available to its customers and IPART:
  - progress reports on the actions under this plan
  - responses to inventory inquiries
  - provision of Network Standards and a list of the Standard Luminaires

### 2.2 Codes, standards and guidelines

Ausgrid has various legal obligations as asset owner, employer, controller, electrical designer and supplier of work premises, plant and substances. These regulatory requirements and relevant standards and policies may include, but are not limited to, the following:

- Electricity Supply Act 1995 and regulations made under the Act
- The NSW Public Lighting Code v1.3
- NSW Accredited Service Provider (ASP) Scheme Rules
- The Australian Energy Regulator's (AER) Final Decision – "Ausgrid Electricity Distribution Determination (2024-2029) – Attachment 16 Alternative control services".
- National Electricity Rules
- Ausgrid's Electricity Safety Rules (ESR)
- All relevant Ausgrid Network Standards
- Service and Installation Rules of NSW
- ENA Doc 001-2008 National Electricity Network Safety Code
- Electricity Transmission and Distribution Asset Management: Code of Practice
- SafeWork NSW – Codes of Practice
- National Energy Customer Framework
- ISSC 3 – Guideline for Managing Vegetation Near Powerlines

- ISSC 14 – Guide to electrical workers' safety equipment
- ISSC 28 – Guideline for Enclosed Spaces in NSW Electricity Networks
- ISSC 29 – Guideline for Pre-Climbing and Climbing Assessment of Poles
- ISSC 31 – Guideline for the Management of Private Overhead Lines
- ISSC 32 – Guide for Network Operators to Provide Information to the Construction Industry for the Use of Cable Covers
- ISSC 33 – Guideline for network configuration during high bush fire risk days
- All relevant Australian Standards
- National guidelines for protecting critical infrastructure from terrorism
- NSW maritime crossings of navigable waters

### 2.3 Ausgrid's Responsibilities

Ausgrid is responsible for:

- Processing applications for Contestable projects as per the ASP Scheme Rules, Ausgrid's Network Standards (NS) and Electrical Supply Standards (ES).
- Delivering Minor Capital Works projects in compliance with *The Code*.
- Complying with all service levels specified in *The Code*.
- Ensuring that the public lighting charges for the lighting assets are based on the calculations approved by the Australian Electricity Regulator (AER).
- Providing this Management Plan and Network Standards, which are designed to avoid any non-compliances and inadequacies, on its website.
- Invoicing the cost of service to the customer for the maintenance and capital recovery of Ausgrid funded assets, as well as design & residual value charges related to Minor Capital Works and Contestable projects.

### 2.3.1 Ausgrid Contact Details

Nominated contact points at Ausgrid for matters related to public lighting services are shown in Table 1.

**Table 1 - Contact Points**

Description	Contact Details
General enquiries	<a href="mailto:publiclighting@ausgrid.com.au">publiclighting@ausgrid.com.au</a>
Ausgrid's public lighting representative	Council Manager - Lighting and Smart Solutions <a href="mailto:publiclighting@ausgrid.com.au">publiclighting@ausgrid.com.au</a> GPO Box 4009 Sydney NSW 2001
Supply of data including data corrections, billing details, and inventory	<a href="mailto:publiclighting@ausgrid.com.au">publiclighting@ausgrid.com.au</a>
Vegetation management	13 13 65
Dispute resolution	Council Manager - Lighting and Smart Solutions GPO Box 4009 Sydney, NSW 2001
Fallen electrical wires, power outage, electric shock or a life-threatening situation	13 13 88
Report a streetlight fault	<a href="#">Report a streetlight fault - Ausgrid</a>

## 2.4 Customer rights and responsibilities

With respect to Ausgrid-owned lighting assets, each public lighting customer carries the following rights and responsibilities:

### 2.4.1 Strategic Alignment

- The Customer articulates and circulates material to keep Ausgrid's Council Manager - Lighting and Smart Solutions fully informed of the strategic direction with regards to public lighting projects.
- The Customer provides early engagement on strategic decision making in relation to public lighting matters, including the opportunity to incorporate feedback into business plans.
- The Customer works in synchronisation with Ausgrid's annual budgeting process to communicate needs for the following financial year by April of the preceding financial year. This enables Ausgrid to plan resources and meet customer needs.
- The Customer reviews the public lighting price list<sup>1</sup> on an annual basis which Ausgrid will maintain updated on its website so that the Customer keeps updated of the annual charges for existing and new public lighting assets.

### 2.4.2 Consultation and Collaboration

- As per the Code the Customer provides a single point of contact (with a delegated alternative) for coordination with Ausgrid on public lighting construction and maintenance activities.
- The Customer submits applications in full, accurately and in a timely fashion for new lighting installations and upgrades to existing lighting installations.
- Ausgrid and the Customer respond promptly to one another through the approvals process.
- The Customer is to decide whether public lighting is required for public roads in question and to ensure that appropriate lighting categories and associated levels are determined as part of the planning process.
- The Road Authority must determine whether public lighting is required for state and regional roads and what lighting level is required for each road category.

<sup>1</sup> <https://www.ausgrid.com.au/-/media/Documents/Regulation/Pricing/PList/Ausgrid-public-lighting-price-list.pdf>



- Ausgrid and the Customer investigate and jointly action any issues that are brought to their attention by residents and other stakeholders including but not limited to faults, inadequate lighting, prohibitive problems such as obtrusive light (glare issue) and obstructions of public lights by vegetation.

### 2.4.3 Compliance

The Customer is to ensure that contestable projects, as defined in section 6.5, comply with the requirements of NS119 Public Lighting Design and Construction or by agreement with the customer in compliance with the Code. This includes the Customer accepting risk and responsibility for the illumination design provided by its Accredited Service Providers.

Prompt and in full payment of any invoiced residual values associated with the assets (initially funded by Ausgrid) which are removed before the end of an asset's economic life. Invoices are provided to the Customer towards the end of each financial year.

## 3 Asset Components and Pricing Structure

Ausgrid's public lighting services encompass the provision, construction and maintenance of public lighting assets within its network area. Whilst public lighting services are separately identified and regulated, they are delivered by Ausgrid's network business, which enables economies to be made in forecasting, planning and operations.

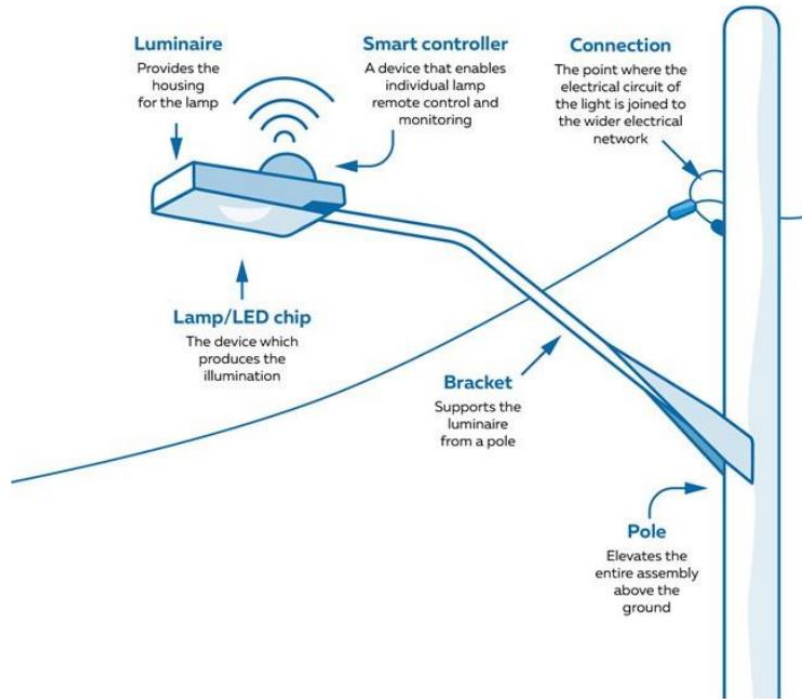
Once public lighting infrastructure is commissioned in Ausgrid asset systems, Ausgrid becomes the asset owner and takes responsibility for the maintenance and ongoing replacement of that asset. Ausgrid levies charges on the relevant customer in accordance with the applicable determination by the AER. These charges vary depending on whether Ausgrid was involved in constructing the asset or just accepted the ongoing maintenance and replacement of the asset following its construction by a customer (or by a developer) under contestable arrangements.

Ausgrid only accepts ownership and maintenance of new public lighting assets that are designed and constructed as per the requirements of Ausgrid's Network Standards, including *NS119 – Public Lighting Design and Construction*.

### 3.1 Street Lighting Components

There are five components which make a typical public lighting installation:

1. Luminaire
2. Controller (if applicable)
3. Bracket
4. Support
5. Connection



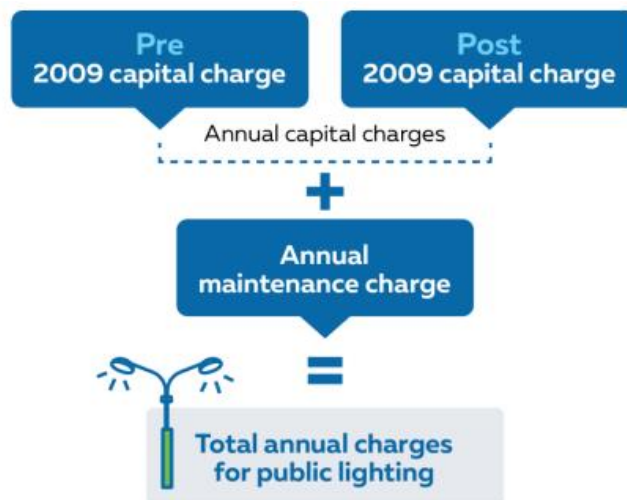
### 3.2 Public Lighting Prices

Public lighting prices are split into maintenance and capital charges. The AER determines the maximum prices we can charge for public lighting services for the first year of the 5-year regulatory period, and how we may change this price over the remaining 4 years.

#### 3.2.1 Pricing structure:

Ausgrid currently has three types of annual public lighting charges:

- Two capital charges – these recover the costs we incur to fund and install the customer’s public lighting infrastructure and depend on when the infrastructure was installed and are calculated using different approaches.
- One maintenance charge – which recovers the costs of maintaining the customer’s public lighting assets (regardless of when they were installed).



#### 3.2.2 Pre-2009 capital charge

In 2009, the AER made a change to the way our public lighting capital charges are calculated, based on when the assets were installed. For assets installed before 1 July 2009, the charge is calculated based on a

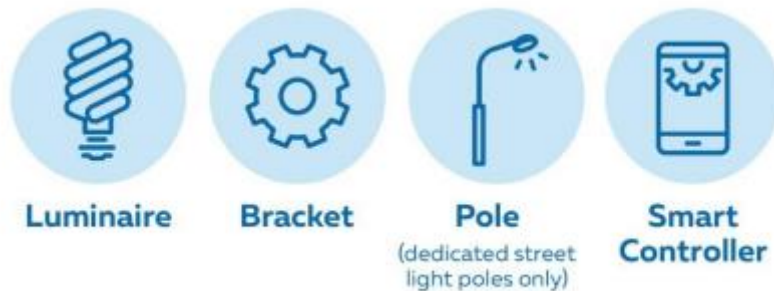
return on capital invested (to recover our ongoing financing costs) and return of capital invested (or depreciation, to recover the cost of the asset over its useful lifespan).

### 3.2.3 Post-2009 capital charge

Assets installed post July 2009 are priced using a cost build up model which then calculates an annuity based on the expected life of the asset. This means it is calculated so that our one-off installation costs and our ongoing financing costs are recovered over the expected asset life.

Post-2009 capital charges are only applicable to Ausgrid funded components of the assets to enable Ausgrid to recover the cost of material and construction of the asset over the asset's economic life.

Ausgrid calculates the installation cost component for all post-2009 public lighting assets in the 4 categories using the inputs shown below.



 <p><b>Material cost</b></p> <p>Material prices for <u>the majority of</u> equipment used for public lighting are sourced by competitive tender. Where equipment is no longer purchased or used but is still required for price modelling, the last known price is <u>used</u> or the 2019-24 determination figure is carried over.</p>	 <p><b>Average labour hours to install</b></p> <p>The man hours to install a new light are 2.01 hours for a minor (residential) road and 3.02 on a major (high traffic) road. This is unchanged from the 2019-24 determination. The proportion of public lighting tasks completed in overtime (7%) compared to standard time is also consistent with the 2019-24 determination.</p>
 <p><b>Labour rates</b></p> <p><u>Labour rates</u> used in the public lighting model are consistent with Ausgrid's Ancillary Network Services 2019-24 pricing with latest CPI forecast.</p>	 <p><b>Traffic control costs</b></p> <p>Traffic control costs relate to the requirement of an additional linesman on major roads (high traffic routes).</p>
 <p><b>Elevated work platform costs</b></p> <p>All public lighting tasks require the use of an EWP. Ausgrid has three sizes of EWP's. A weighted average based on the actual usage of the various size EWPs has been calculated and included in the annuity model.</p>	 <p><b>Overhead percentage</b></p> <p>We apply an overhead percentage of 6% to our public lighting capital expenditure, consistent with our cost allocation methodology.</p>
 <p><b>Financing costs</b></p> <p>WACC inputs for public lighting models are derived from standard control service post tax revenue models.</p>	

### 3.2.4 Maintenance charge

The cost of scheduled and unscheduled maintenance services is priced via an annual maintenance charge. The average charge reflects the average time taken for each activity, a labour rate, and materials required.

Maintenance charges apply to both pre- and post-2009 capital assets, irrespective of whether Ausgrid initially funded the assets or not.

#### *Maintenance charge components*

- **Luminaire**– Applied to all luminaires recover the costs of scheduled and unscheduled maintenance tasks. These tasks include replacing the lamp (required for legacy luminaires), replacing the PE-cell, fixing cable or fuse supply issues, scheduled servicing of luminaires, night-time traffic route patrol (required for luminaires on major roads).
- **Connection** applied to public lighting poles with underground connections to recover the cost of repair work to underground cabling.
- **Smart controller** – Applied to LED luminaires with smart controllers only to recover the costs related to system licence fees, data charges and cyber security management.

### 3.2.5 Rates

Ausgrid's public lighting rate categories are:

- **Rate 1** is the rate for public lighting installations with all components funded by Ausgrid. Ausgrid funded the initial capital costs or renewal of the rate 1 installation. This rate applies to all public lighting installations connected to Ausgrid's network where materials and construction has been funded by Ausgrid.
- **Rate 2** is the rate for public lighting Installations which are gifted to Ausgrid where customers or developers funded the assets. These assets must be constructed as per Ausgrid's requirements, including Network Standard *NS119* and the Contestability framework.
- **Rate 3** (Obsolete) applied to legacy lighting installations where the customer is responsible for maintenance and upgrade of the asset. No components are billable on Rate 3 assets, other than energy consumption. Ausgrid as metering coordinator for unmetered loads maintains information about wattage of rate 3 assets and provides it to retailers on a monthly basis. It is responsibility of the customer to provide updates to Ausgrid about changes of luminaire types and wattages. Ausgrid reserves the right to decommission Rate 3 assets where continued connection is unfeasible, or state of equipment is no longer serviceable. Ausgrid no longer offers this rate and does not generally take ownership of private lights. Acceptance of ownership of private lights may be considered if assets have legacy connection directly to Ausgrid's low voltage network.
- **Rate 4** is the rate for situations where the council has asked Ausgrid to fund the replacement of a luminaire where the old luminaire (as well as the bracket and column) was previously funded by a council (or other 3rd parties) as Rate 2 assets. This rate is also applicable when Ausgrid replaces the old luminaire on a Rate 2 installation as part of maintenance activity. Using this rate, Ausgrid can recover the expenses in replacing the luminaire via the standard annuity model pricing while not charging for other capital components that were previously funded by the council (or other 3rd parties).
- **Rate 5** is the rate for situations where the council funds the replacement of a luminaire where Ausgrid previously funded the old luminaire (as well as the bracket and column) as Rate 1 assets. Using this rate, Ausgrid can continue to recover the expense of funding the original bracket and column via the standard annuity model pricing while not charging for the new luminaire being funded by the council. The Rate 5 charges only apply for assets installed under the Contestable framework and Ausgrid initiated rollout programs where Ausgrid owns and maintains the assets.

Ausgrid owns and maintains all the Rate 1, Rate 2, Rate 4 and Rate 5 assets. For Rate 1, 2, 3, 4 and 5, the same rate category applies to the entire suite of five components: support, bracket, luminaire, lamp, and connection. For instance, luminaires cannot be on Rate 1 while the corresponding support, bracket, and connection are on Rate 2 or vice versa.

Further details regarding tariffs and annual charges for various public lighting asset types are available on Ausgrid's website<sup>2</sup>. Customers are advised to review Ausgrid's public lighting price list annually for new public lighting assets and determine if it is feasible to proceed before planning any public lighting project.

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<sup>2</sup> <https://www.ausgrid.com.au/Industry/Regulation/Network-prices>

**Table 2 – Capital Charges Associated with Public Lighting Rates**

CAPITAL CHARGES					
Component	Rate 1	Rate 2	Rate 3	Rate 4	Rate 5
Luminaire	✓	✗	✗	✓	✗
Controller	✓	✗	✗	✓	✗
Bracket	✓	✗	✗	✗	✓
Support	✓	✗	✗	✗	✓
Connection	✗	✗	✗	✗	✗

**Table 3 – Maintenance Charges Associated with Public Lighting Rates**

MAINTENANCE CHARGES					
Component	Rate 1	Rate 2	Rate 3	Rate 4	Rate 5
Luminaire	✓	✓	✗	✓	✓
Controller	✓	✓	✗	✓	✓
Bracket	✗	✗	✗	✗	✗
Support	✗	✗	✗	✗	✗
Connection	✓	✓	✗	✓	✓

### 3.2.6 Billing

Ausgrid issues the public lighting bills, which include the cost of both capital recovery and maintenance of assets at the beginning of each month. The bills contain details of the number and type of lights, and any other information reasonably necessary for the customer to verify the accuracy of an amount charged on the bill.

Each customer is required pay the invoice for streetlighting services by the due date, which is typically not more than 30 days from the issue date. Customers receive invoices monthly and each invoice is accompanied by backing sheet summarising the customer’s asset base and relevant charges for each month.

## 4 Category of Works

New assets on Ausgrid’s Public Lighting network are generally designed and constructed through one of the following paths:

### 4.1 Minor Capital Works (MCW)

Ausgrid has an obligation to offer installation of up to 10 luminaires as defined by the NSW Public Lighting Code. These installations are delivered under Minor Capital Works stream.

Minor Capital Works are subject to Engineering Service Charges (ESC) related to mandatory Electrical Connection Design & optional Ausgrid supplied Illumination Design.

Quoted charges must be accepted by public lighting customer to proceed from application stage to the design stage.

Note: ESC are comprised of time required to produce the Electrical Design (including any site visits), project coordination and optional Illumination Design.

### 4.2 ANS

Specific works other than that categorised as Minor Capital can be carried out as a quoted service in compliance with AER determination for Ancillary Works. Public lighting works offered as an ANS service are

listed in Appendix C. The scope for ANS works has been developed in consideration of ringfencing guidelines.

### 4.3 Glare Control Only projects (ANS)

Ausgrid will process requests for installation of Glare Shield Only following a simplified process. Applicable only where installation of glare control device is requested for installation on existing streetlighting asset.

### 4.4 Contestable Projects

Where works exceed criteria of MCW defined in section 4.1 a customer funds design & construction of the assets. Customers use external ASPs to deliver the design and construction of Contestable projects.

Note: Public Lighting Customers can elect to have any works associated with public lighting processed as Contestable.

## 5 Application for Alterations and Additions

### 5.1 Online Application

Customers, who seek to modify public lighting installations, must submit their requests through [Ausgrid's Public Lighting On-Line Application Form](#).<sup>3</sup> This application form shall be used for all Contestable, Minor Capital Works, ANS and Glare Control Only projects in accordance with the [Application User Guide](#) available on the Ausgrid website.

Upon submission of application, a reference code is provided to the applicant, which should be recorded to be used for follow-up communications with Ausgrid regarding the application.

Ausgrid reviews each application in a timely fashion and assigns the applications to its relevant divisions for administration and completion. Incomplete or incorrect applications may be rejected. In this case, the applicant may be asked to submit a new application which incurs an additional technical assessment fee.

Applications for Minor Capital Works, ANS and Glare Control Projects must be submitted by public lighting customers only (e.g. Council authorised officers). Applications for Contestable projects could be submitted by a public lighting customer or on its behalf by an authorised third party.

Ausgrid will assess each application the advice the Customer whether it meets the criteria for MCW, ANS and Glare control projects. Applications that do not meet the criteria will be considered contestable works.

## 6 Design & Delivery

### 6.1 Design components

#### 6.1.1 Electrical Design (Minor Capital Works and Contestable Works)

Electrical Designs are a mandatory part of Public Lighting Works.

Minor Capital Works are subject to ESC for mandatory electrical design, associated investigations and administration plus optional illumination design where requested. Ausgrid provides the cost of ESC to the customer through a Short Form Contract (SFC). Contestable works are developed by an ASP3 for the connection of the proposed public lighting assets to Ausgrid's low voltage network.

#### 6.1.2 Illumination Design (Minor Capital Works and Contestable Works)

When completing an online application, the customer must choose whether an Illumination Design is required for the project or not, except for circumstances where the lighting design is a mandatory part of the project.

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<sup>3</sup> <https://www.ausgrid.com.au/Connections/Get-connected/Apply-for-a-connection>

Illumination Designs are applicable to both Minor Capital Works and Contestable Works. Any Illumination Designs must be carried out in accordance with AS1158 Lighting for Roads and Public places. The applicable Public Lighting Customer is responsible for nominating the AS1158 Category of lighting required.

One of the following options available must be selected on application form:

1. Illumination Design is not required<sup>4</sup>:  
Except for greenfield site projects that involve the lighting of pedestrian crossings or roundabouts, a customer may decide that an Illumination Design is not required. This option may be used for the provision of infill lighting or to modify existing lights, e.g. when like-for-like replacement of an asset is needed, and the customer chooses not to have an assessment carried out to verify if this replacement will comply with AS/NZS1158. This option is also appropriate when the customer is aware that compliance with AS/NZS1158 series cannot be achieved for any reason.
2. Illumination Design required from Ausgrid to comply with AS/NZS1158 series:  
This option means that the customer requests to use Ausgrid's Illumination Design service. Customers should note that Ausgrid's ability to undertake Illumination Design service is based on the availability of resources at the time of the request. Ausgrid assesses the extent of work and its resourcing availability and advises the customer whether it can offer the requested Illumination Design service. Ausgrid will endeavour to deliver the illumination design service where internal resources are available. Priority of consideration will be applied if the project is critical for public safety. If Ausgrid is able to perform the illumination design service, Ausgrid provides an offer in the form of a Short Form Contract (SFC) which is invoiced, based on applicable labour rates from Ancillary Network Service (ANS) charges, for approval by the customer.
3. A third party other than Ausgrid has developed Illumination Design<sup>5</sup>:  
Illumination Design is an Alternative Control Service (ACS) that is also subject to the open market. Therefore, the customer can undertake the Illumination Design in-house or engage other lighting consultants. In this case, the lighting designer must provide the compliance certificate (confirming the level of compliance with AS/NZS1158 series) for the public lighting customer to attach to the online application.

Network Standard NS119<sup>6</sup> specifies Ausgrid's requirements for the design and construction of all public lighting assets that are to be owned and operated by Ausgrid. The provisions of this network standard shall apply throughout Ausgrid's supply area for all the contestable and non-contestable projects.

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<sup>4</sup> Ausgrid is not responsible for non-compliance with Australian Standards when a customer selects option 1.

<sup>5</sup> Ausgrid is not responsible for non-compliance with Australian Standards when a customer selects option 3.

<sup>6</sup> <https://www.ausgrid.com.au/-/media/Documents/Technical-Documentation/NS/NS119.pdf>

## 6.2 Delivery Streams

### 6.2.1 Minor Capital Works (MCW) Projects

MCW can be only submitted by Public Lighting Customers using Ausgrid's connection portal.

#### 6.2.1.1 *Mandatory MCW Scope*

Projects submitted by Public Lighting Customer and meeting conditions specified in The Code are classified as Minor Capital Works project and delivered by Ausgrid if they meet following criteria:

1. Replacement of up to 10 existing luminaires on public lighting installations on Ausgrid network.
2. New installations of up to 10 brackets and luminaires on existing distribution poles with available Low Voltage overhead supply.
3. No alterations to existing distribution network infrastructure to accommodate new or altered streetlighting equipment.
4. The requested construction complies with Ausgrid's Network Standards
5. All assets nominated in a single application are to be within the same street (primary) or within a street directly connected to the primary street.

Projects delivered within the Mandatory MCW Scope are delivered within the timeframe specified in Public Lighting Code and are part of Ausgrid's Code reporting requirements. Projects delivered under Mandatory Scope usually take priority over other project types such as Glare Control Only (ANS) and Additional MCW Scope.

#### 6.2.1.2 *Additional MCW Scope*

To assist customers meeting compliance levels of the Australian Standard for road lighting, specifically for pedestrian crossings, Ausgrid will also deliver projects as Minor Capital Works that meet following criteria:

1. Up to two new dedicated timber poles with an overhead connection
2. Connection to an LV network can be achieved by installing no more than one span of overhead low voltage mains per pole
3. Provision of up to two new poles excludes network poles required to support Ausgrid network infrastructure, and where dedicated poles cannot be placed without interfering with existing HV and LV network clearances.

Additional MCW Scope is not covered by the Code and will not be part of Ausgrid's reporting and delivery requirements. The delivery timeframe for both design and construction will be subject to agreement between Ausgrid and the customer.

#### 6.2.1.3 *Responsibilities*

Public Lighting Customers submitting applications for MCW must accept responsibility for residual values, ongoing (annuity) capital recovery and maintenance charges.

Residual value charges are the remaining amount of initial investment for the assets that are removed before the end of the asset's economic life. Removing a fully operative lighting asset before the end of its economic life would not allow Ausgrid to recover its capital investment; hence the AER's determination provides a method for calculation of residual value charges. In cases where the removal of the public lighting infrastructure occurs as part of a Minor Capital Works project, the customer must agree to pay the residual charges.

Public Lighting Customers are responsible for providing accurate information in the application form. Information in the application form are used to assess the project scope and determine correct delivery stream (MCW vs Contestable). Incomplete or incorrect information in the form may result in project being assessed as Contestable.

#### 6.2.1.4 *MCW Cost and Contract*

Minor Capital Works projects are priced using the Ancillary Network Services (ANS) charges approved by the Australian Electricity Regulator (AER).



The cost is a quoted fee that is designed to recover administration, design, technical assessment costs relating to public lighting minor works based on the complexity of each project. Upon review of the scope, Ausgrid will provide a quote to the customer summarising hourly charges required to deliver the Electrical and/or Illumination Design. The cost is approved by the Public Lighting Customer through a SFC issued by Ausgrid. Ausgrid initiates the project upon receipt of the signed SFC from the Public Lighting Customer.

Following customer acceptance of Engineering Service Charges. Ausgrid performs engineering and design services and forwards Ausgrid Public Lighting Minor Capital Works Approval Form (*AUSPL MCWAF*) for approval of design and acceptance of associated ongoing capital and maintenance charges of public lighting assets affected (removed or relocated) due to a customer-initiated project. The form must be signed by the customer and provided to Ausgrid before the construction permission can be obtained from Ausgrid. The residual value of any projects is invoiced to the customer at the end of each financial year for all projects that occurred from the previous 1<sup>st</sup> of April to 31<sup>st</sup> March of the relevant financial year.

The start date of the construction phase of the project is the date when Ausgrid receives a signed form *AUSPL MCWAF*.

### **6.2.1.5 MCW Delivery timeframes**

Ausgrid will endeavour to meet the following timeframes for Minor Capital Works projects:

- Design services to be provided no longer than 90 business days after successful submission of the online request by Public Lighting Customer. This is the period between the acceptance of Electrical Connection Design fees and delivery of the *AUSPL MCW AF* form to customers.
- For projects delivered under the Mandatory MCW Scope, construction to be finished in no more than 90 business days from receipt of completed *AUSPL MCWAF Form* from the customer.
- Public Lighting Customers to be notified of completion of works within 20 business days of completion of works.
- Public lighting inventory to be updated within 60 business days of completion of works

Where Ausgrid cannot meet the above timeframes, Ausgrid will notify the customer of the expected delay and give reason as to why delays are expected.

A full list of tasks carried out under Minor Capital Works (and Short Form Contract) process is provided in section 0 (Appendix C).

Note: Ausgrid reserves the right to upgrade its public lighting assets after consultation with its customers, for reasons such as enhanced technologies, safety considerations etc. Ausgrid may also consider requests from customers regarding large scale projects, such as accelerated rollout programs, which involve the like-for-like replacement of existing assets under a negotiated arrangement with the customers. Customers should contact Ausgrid's Lighting Manager to discuss such proposals.

## **6.3 ANS Projects**

Applications for removal or relocation of overhead supplied streetlighting assets where there is no material impact on Ausgrid network can be processed as a quoted ANS service.

The Public lighting customer is responsible for costs incurred by Ausgrid including any design, materials, construction, and any associated residual values. Projects are executed on acceptance of costs quoted on SFC.

The Public Lighting Customer can choose the option to engage ASP for the removal of Public Lighting assets through contestable works.

ANS projects are not covered by the Code and will not be part of Ausgrid's reporting and delivery requirements. The delivery timeframe for both design and construction will be subject to agreement between Ausgrid and the Public Lighting Customer.

## **6.4 Glare Control Only (ANS)**

Public Lighting Customer can request installation of glare control only devices.

The following conditions are applicable to Glare Control Only applications:

1. Separate application is required for each asset that is a source of obtrusive light.

2. No alterations to existing network infrastructure to accommodate new or altered streetlighting equipment are required
3. All glare control equipment listed as standard equipment in Ausgrid's NS119 Annexure A.
4. Public lighting customer is responsible for costs incurred by Ausgrid including administration, materials and construction. Projects are executed on acceptance of quoted cost.

It is the responsibility of the Public Lighting Customer to investigate any glare complaint raised by residents or the public in its area and propose a suitable solution.

By approving a glare reduction measure, the Public Lighting Customer acknowledges and accepts consequences of potential non-compliance with the Australian public lighting Standards caused by any modification to luminaires, such as the installation of glare shields.

Where applicable, the Customer is responsible with liaising with TfNSW for state roads.

Note:

1. ANS and Glare Control Only projects are not subject to service standards applied under the Code. However, Ausgrid is committed to completing works as soon as practicable considering network priorities and available resources.
2. Applications for glare control cannot be accepted from any party other than the relevant Public Lighting Customer. Ausgrid advises residents to contact the relevant Customer of the light regarding any glare issue.

## 6.5 Contestable Works

Project requests that do not meet the criteria for MCW or ANS are deemed to be Contestable works. Customers initiate and fund the Contestable projects in accordance with Ausgrid's Network Standards, *ES1 – Premises Connection Requirements, Policy for ASP1 Premises Connections, Network Asset Relocation, and Undergrounding Policy Guidelines*.

Common examples of Contestable works are:

- Construction of new underground supplied public lights in new developments or among existing infrastructure.
- Removal or relocation of specific components of a public light asset (where they do not meet the criteria for removal under ANS as outlined above).
- Installation of more than 2 dedicated timber poles.
- Installation or alteration of more than 10 luminaires.

Refer to Appendix C for a full list of tasks carried out under the Contestable process.

Applications for Contestable projects must also be made online as explained above. The application can be submitted by public lighting customers or by ASPs on behalf of the customers.

Ausgrid charges a set fee for the technical assessment of each Contestable project. This fee is determined based on Ancillary Network Service (ANS) charges.

The relevant road authority should confirm the exact requirements of new public lighting projects. These may be detailed in a development approval issued by Council or by the Department of Planning and Environment or any other directive received from any other NSW government department or agency. The proposal should comply with all relevant Ausgrid policies, standards and related requirements.

Upon receipt of a connection application, the design process is commenced under Ausgrid's established Contestable process, available in Appendix B of this document. Form *AUSPL CON F01A* is made available to the customer or its representative (often the ASP) during the design stage.

The application is submitted through the *AUSPL CON F01A* form that provides essential information to Ausgrid and must be submitted to Ausgrid with the Electrical Connection Design package, to detail:

- the design of the electrical connection,
- the lighting level and illumination design requirements of the customer, and

- payment of any residual charges and annual public lighting charges.

The customer or its ASP can engage a lighting designer to meet the technical illumination design requirements and involve an ASP3 to undertake the Contestable Electrical Connection Design required to fulfil the connection requirements.

### 6.5.1.1 Conditions applicable to Contestable Works

The customer is responsible for the full payment of residual values associated with the Ausgrid funded assets that are removed or relocated as part of a Contestable project, before the end of the economic life of the assets. The ASP3 must approach the customer to obtain required details and agreement (from the authorised personnel only) to ensure that Ausgrid is paid for the residual value charges related to the existing public lighting asset(s) being removed or relocated.<sup>7</sup> The agreement is obtained via the form *AUSPL CON F01A* at an early stage of the project, which allows Ausgrid to recover the residual value from the customer towards the end of the corresponding financial year.

Once the customer has approved a development, then it is deemed that the Council is in acceptance of its responsibility for public lighting and the lighting levels. Lighting levels are the responsibility of Councils in their local government area, irrespective of whether the lighting levels were specified in the Development Approvals.

The customer is solely responsible for ensuring that the public lighting infrastructure that becomes part of Ausgrid's distribution network is designed to meet their required illumination levels within relevant Australian Standards.

Once a customer establishes public lighting infrastructure through a Contestable project, Ausgrid takes responsibility for the maintenance and ongoing replacement of that infrastructure and imposes applicable charges to the customer in accordance with the AER Determination.

### 6.5.1.2 Contestable Works Accredited Service Providers

There are three types of Contestable services for which ASPs require separate accreditation; information regarding this can be found at NSW Government.

**Table 3– Accredited Service Provider Levels**

Level	Description
ASP1	Level 1 Accredited Service Provider, involving the Contestable construction of transmission and distribution works such as the installation of high voltage and LV distribution cables and substations (i.e. Distribution Work).
ASP2	Level 2 Accredited Service Provider, involving the Contestable installation of overhead and underground service mains and metering equipment, the disconnection and reconnection of supply to carry out work on the installation and energising installations.
ASP3	Level 3 Accredited Service Provider, involving the design of electrical reticulation systems to be constructed as Contestable works.

Illumination design for contestable projects does not fall under the ASP scheme but must be prepared in coordination with the appointed ASP. A lighting consultant or lighting designer is responsible for:

- Ensuring that appropriate qualification, training and experience were gained to develop an Illumination Design that complies with the requirements of AS/NZ 1158 series.
- Complying with the instructions (and brief) given by the customer or ASP3.
- Ensuring that the design achieves the requested lighting levels and can be constructed on Ausgrid's existing or new network infrastructure.
- Certifying the compliance in Section 4 of Public Lighting Form *AUSPL CON F01A*.

<sup>7</sup> Sign off by the ASP1 or ASP3 or others on behalf of the customer in the customer Section 4 of the Agreement to Pay, in Form *AUSPL CON F01A*, cannot be accepted.

- Ensuring that the Illumination Design is compliant with requirements of AS/NZS1158 for pedestrian crossings and roundabouts

#### **6.5.1.3 ASP1 is responsible for:**

- Providing connection services on behalf of the customer per the Ausgrid's Network Standards, AS/NZS1158 series and Ausgrid's Electrical Supply Standards series as appropriate.
- Completing the necessary paperwork to enable Ausgrid to record details of new assets in its asset management system.

#### **6.5.1.4 ASP3 is responsible for:**

- Complying with the instructions (and brief) given by the customer,
- Completing section 3 of the Public Lighting Form *AUSPL CON F01A* and co-ordinating the Illumination Design and the Electrical Connection Design as requested.
- Engaging a qualified lighting designer if requested by the customer as part of its services or by engaging an independent lighting consultant to fulfil customer obligations mentioned above.
- Coordinating the acceptances and approvals from the relevant parties.

## **6.6 General Conditions for all Public Lighting Projects**

- No equipment (electrical or non-electrical) other than luminaires should be connected to the streetlight supply.
- The electrical supply to the public light cannot be used for any other purposes (e.g. socket outlets etc). If it is the intention to use the electricity supply for additional purposes, these new lighting assets either have to be connected to the network as a permanent unmetered supply (PUMS) as per Ausgrid's *ES1 – Premises Connection Requirements* or must be privately metered. In either case, this type of connection is out of the scope of the regulated public lighting service framework, and Ausgrid cannot maintain the public lights because these cannot be assigned to any of public lighting tariffs specified in section 3.2 of this document.
- Installation must meet the requirement of *NS143 – Easements, Leases and Rights of Way*. Ausgrid must be provided with sufficient and continual access for a truck with an Elevating Work Platform (EWP) for maintenance purposes or to correct any unauthorised modifications to newly installed assets. EWP trucks used to maintain most of the public lights are generally 16 tonnes in weight, 9.3 metres in length, 2.5 metres in width and 4.0 metres in height. These trucks have a maximum outreach of 16m. Ausgrid is not able to maintain the public lighting assets if access to the assets is denied or not sufficient.
- The positioning of poles and lighting columns must comply with Ausgrid's *NS167– Positioning of Poles and Lighting Columns*.
- Luminaires and all other public lighting assets must be selected from the Ausgrid's Standard List of Standard Assets as per the Ausgrid's *NS119 – Public Lighting Design and Construction*.
- Projects with alterations or additions to existing unmetered private lighting circuits (funded and maintained by the customer under the obsolete Rate 3) are considered private installations.
- New Multi-Function Poles are private installations and are subject to the open market where a licensed electrical contractor can be engaged. These poles are not owned or maintained by Ausgrid under the regulated public lighting framework.
- Ausgrid does not maintain decorative coatings on columns as part of the maintenance of public light. We may paint for corrosion protection at ground level. Customers could fund the painting of decorative columns after installation which may be carried out as per requirements of *NS119 – Ausgrid Public Lighting Design and Construction* and *NS183 – Installation of Private Attachments on Ausgrid Poles*.
- Customer is responsible for ensuring that connection services provided by the ASP1 are performed as per Ausgrid's Network Standards and Electrical Supply Standards as appropriate.

## **7 Equipment**

Ausgrid procures public lighting equipment through a competitive tender process to achieve the best commercial outcome for its customers, by leveraging volume purchase opportunities and medium-term period contracts. Ausgrid consults with its customers on specifications for public lighting equipment before issuing any invitation to tender. Ausgrid also attempts to identify, select, and procure equipment that best meets the expectations of Ausgrid and customers.

## 7.1 Standard Luminaires

Ausgrid maintains a list of Standard Luminaires which provides the default options for all new and replacement installations. Ausgrid's current List of Standard Luminaires is published in Network Standard *NS119 – Ausgrid Public Lighting Design and Construction – Annexure A, B & C*. The latest version of the Network Standards is available on the Ausgrid website.

Ausgrid consults with its customers on changes to the List of Standard Luminaires as per requirements of the *NSW Public Lighting Code*. Similarly, customers are welcome to make requests for consideration to add new luminaires to the current list on offer (or remove ones that they feel are obsolete). Trialling of innovative technologies is a matter of investment and customer interest with a net benefit to the community at large. Ausgrid must consider the costs and performance of requested luminaires and technologies in the field over a reasonable time before adding the new product to the current list. Also, new luminaires and technological changes must conform to applicable standards as outlined in the *AS/NZS60598.1*, *AS/NZS60598.2.3* and *AS/NZS1158* series and be listed or available for listing on AEMO Unmetered Load Tables.

Ausgrid continues to maintain all existing public lighting assets until the end of their useful economic life. Where asset components are discontinued, and no compatible alternative is available Ausgrid reserves the right to decommission.

Ausgrid's decision to make a capital investment in new technologies and new public light products is also based on the following:

- The maturity of the technological product or scheme,
- Ausgrid's internal analysis to ensure that current rigorous maintenance practices can be met and further improved,
- The Failure Modes, Effects and Criticality Analysis for the assets,
- A full understanding of the performance of the new assets in the field,
- Cost of capital investment and system(s) changes as appropriate,
- Cost of resourcing a control group for trials,
- Any other risks not experienced by the manufacturers,
- The need to confirm risks from trials and mitigation means before investment,
- Regulatory pricing approval of the annual charges for the new asset(s),
- For new standard equipment added between regulatory determinations, Ausgrid will propose new prices at the next annual pricing proposal (in March each year) consistent with the pricing approach approved by the AER at the previous determination. Products introduced pre-pricing approval be assigned rates of equivalent products as an interim solution.

## 7.2 Non-Standard Luminaires

Non-standard luminaires are luminaires not listed on the current *NS119 – Annexure A – Standard Equipment List*.

Ausgrid continues to maintain all its existing public lighting assets until the end of their useful economic life.

It must be noted that assets which are not owned by Ausgrid (Rate 3 assets) but directly connected to Ausgrid's network must be replaced and restored by the owner of those assets. Ausgrid must be notified in advance of any proposed access or alterations to Rate 3 assets.

Where a customer wishes to own and maintain a new lighting installation, this lighting installation must be constructed and connected to the network in accordance with the *NSW Service and Installation Rules* and the relevant Australian Standards, e.g. *AS/NZS 3000 Wiring Rules*. These installations must be funded, constructed and maintained by the road authority or owner of the infrastructure, which must also be connected to the network through a private meter.

Note: The useful economic life of a Public Lighting Asset is the period over which its capital investment has been depreciated.

### 7.3 Streetlight Control

Ausgrid will progressively transition from PE Cell control to NEMA smart control. Smart Controllers will independently operate as a PE controller until connected to a Central Management System (CMS).

The main use of smart controllers is to control streetlights. The smart control will be used as a supporting system and will not serve as the main source of information for faults or asset information.

Smart controllers have the primary function of controlling night-time on/off operation. Feasibility for nominated on/off times, or dimming cycles specified by the Public Lighting Customer will be considered in accordance with Ausgrid's Smart Control Policy.

### 7.4 Zhaga Products

Where technically possible Ausgrid's streetlight assets are equipped with a Zhaga port that allows installation of Smart City sensors.

Conditions for use of the Zhaga port, access arrangements and sensor requirements are outlined in Ausgrid's Zhaga Policy.

## 8 Public Lighting Maintenance Program

Ausgrid owns and operates its public lighting assets, efficiently and effectively over the assets' economic life in accordance with 'in-service' values specified for 'Category V' and 'Category P' lighting as detailed in *AS/NZS1158* series of standards for the illumination of roads and public spaces. This may be varied to a lesser arrangement where it has been agreed with the customer in accordance with NSW Public Lighting Code.

Subject to its paramount commitment to safety, Ausgrid's network planning objective is to comply with the many legislative and regulatory obligations that apply to public lighting maintenance, including The Code.

The public lighting maintenance plan determines the preventative maintenance requirements of both 'in service' and new assets, along with the identification of all corrective maintenance needs of the network. Ausgrid's public lighting maintenance plan comprises the following categories:

- Planned maintenance
- Unplanned maintenance
- Condition-based maintenance

### 8.1.1 Public Lighting Inventory

Ausgrid maintains an inventory list of Public Lighting Assets for each Customer in accordance with the Code. The Public Lighting Inventory will record the following details for each Public Lighting Asset:

- I. Luminaire location (including GIS coordinates);
- II. Luminaire, light source, bracket, column / pole and connection type (all items to include height of Luminaire and material of column if available and applicable);
- III. lamp rating (if applicable) and total power consumption assumed for billing purposes;
- IV. where the asset was installed after 1 January 2006, the date the lamp (where information is available), Luminaire, bracket, column / pole and connection were installed;
- V. sufficient information to readily look up the Public Lighting Charges for any asset; and
- VI. any other information that is required to readily identify Public Lighting Charges, capital funding and ownership status.

A current Public Lighting Inventory is provided to each customer monthly.

Ausgrid is committed to investigating and responding to written enquiries from Customers in relation to their Public Lighting Inventory within 20 Business Days.

## 8.2 Condition Monitoring and Maintenance Analysis

Ausgrid performs planned and condition-based maintenance on public lighting assets as a method to reduce the number of required unplanned maintenance (ad-hoc repair works) while improving overall public lighting safety and reliability.

Ausgrid evaluates and optimises equipment selection and maintenance intervals in an economically efficient manner, to meet the requirement for minimum light output from luminaires as the equipment ages, referred to as a maintenance factor. Ausgrid uses a standardised Maintenance Requirements Analysis (MRA) process to develop system preventive maintenance requirements by analysing the application of Failure Modes, Effects and Criticality Analysis (FMECA).

Ausgrid performs regular cleaning cycle of all luminaires every 6 years. During the cleaning, the luminaire is inspected for any deterioration and the lens cover is wiped.

### 8.3 Outage Detection and Service Availability

Ausgrid conducts night patrols on major V Category roads to ensure lights are operative. Ausgrid performs night patrols at least three times per year for each asset identified traffic route luminaire.

Night Patrols will be superseded by Smart Control monitoring once the system is widely deployed and enabled.

Customers and the community can report streetlighting outages via readily accessible and easy to use methods for reporting faults associated with Ausgrid's public lighting service:

- 24-hour free call number: 13 13 88
- Online: <https://www.ausgrid.com.au/In-your-community/Report-a-problem/Street-lights#!/map>

### 8.4 Lamp Replacement

Ausgrid no longer performs bulk lamp replacement programs due to gradual replacement with LED, however might choose to replace individual lamps for specific luminaires such as heritage lights. Ausgrid's goal is to have 100% LED luminaires by end of FY27.

### 8.5 Disposal of legacy equipment (including lamps)

Ausgrid undertakes an environmentally and economically appropriate recycling program for lamps and luminaires that are removed. Ausgrid is also signatory to the FluoroCycle scheme, which is a national scheme to encourage recycling of mercury-containing lamps.

### 8.6 Luminaire Cleaning and Inspection

Ausgrid endeavours to identify and rectify problems with public lighting installations before the issues progress to failure or affect lumen output. Whenever luminaires are attended, Ausgrid inspects each luminaire and rectifies:

- Lenses that are opaque or substantially discoloured, cracked, improperly secured, damaged or missing (Lenses and reflectors in serviceable condition are cleaned using appropriate cleaning compounds);
- Damaged or missing seals;
- Moisture within the luminaire;
- Damaged or corroded supports, luminaires, brackets or connections;
- Improperly aligned luminaire or brackets; and
- Other circumstances or defects which may affect the ongoing performance of the luminaire
- Ausgrid also performs a cleaning cycle of all luminaires every 6 years.

### 8.7 Maintenance Records

Ausgrid systems are designed to record data applicable to public lighting asset failures. Primary data related to any malfunction start, malfunction end, statuses applicable to root cause and failure details are captured in compliance with the Code and in a format compatible with IPART reporting requirements.

### 8.8 Amendments to Maintenance Plan Where Required

Ausgrid's maintenance records and condition monitoring program assist in developing systems designed to leverage off new technologies for continued enhancement of service levels, availability, and efficiencies.



## 8.9 Vegetation Management

Ausgrid publishes a *Tree Safety Management Plan* to minimise the impact of vegetation on the management of public lighting assets. A copy of this plan can be obtained by calling 13 13 65 or through Ausgrid's website<sup>8</sup>.

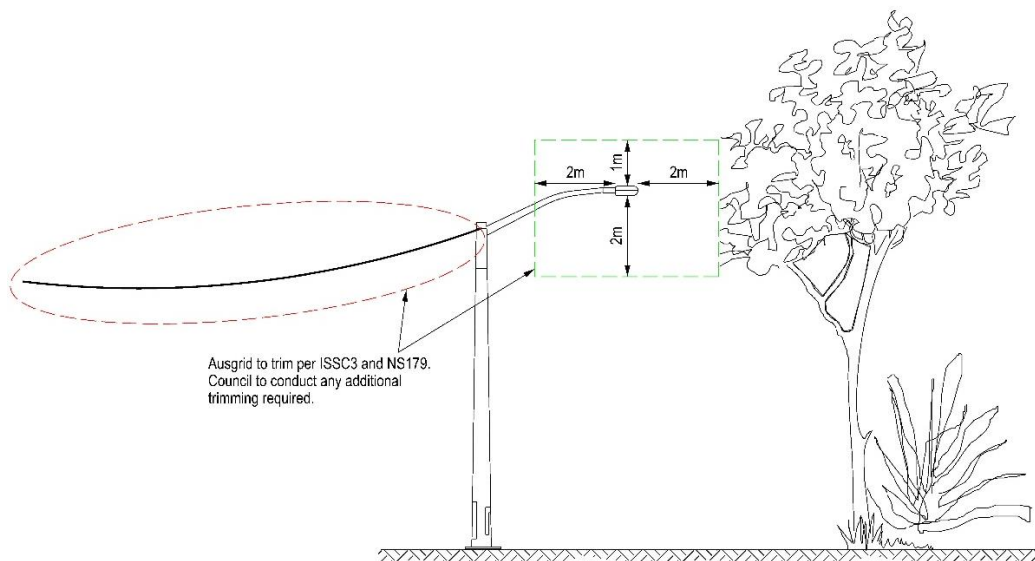
This plan helps to prevent bushfires from fallen wires and reduce supply interruptions caused by vegetation. It also provides advice on the most appropriate trees to plant near powerlines and highlights the importance of engaging only qualified tree trimmers to conduct any trimming work required.

Ausgrid trims any vegetation that is encroaching on the clearance envelope, or that which may infringe upon the clearance envelope during the next growing or inspection cycle, whichever is the shorter (typically 1 year).

The vegetation management requirements around street lighting assets are outlined within ISSC3 Schedule 1\_1.7 Street Lighting Luminaires. Responsibility for achieving the Minimum Vegetation Clearances and for ensuring effective lighting distribution is as follows:

- Streetlights connected to Ausgrid's overhead network (Figure 6 & Figure 7) - Ausgrid contractors will clear around the overhead mains in accordance with ISSC3 and NS179 and will clear around the street light luminaire as per within ISSC3 Schedule 1\_1.7 Street Lighting Luminaires. Additional clearing outside of these clearance zones to ensure effective lighting distribution is the responsibility of councils or other road authority.
- Streetlights connected to Ausgrid's underground network (i.e. Underground Residential Distribution (URD) streetlights) (Figure 8) - All vegetation management around the streetlight to ensure effective lighting distribution is the responsibility of councils or other road authority.
- In general, ensuring effective lighting distribution (beyond Minimum Vegetation Clearances managed by Ausgrid) requires management of vegetation by the road authority in a zone defined by a line from the luminaire to all points on the ground in the road reserve at least halfway to the next luminaire.

**Figure 6: Vegetation management where connected to the overhead network – street light standard**



<sup>8</sup> <https://www.ausgrid.com.au/In-your-community/Tree-trimming>

Figure 7: Vegetation management where connected to the overhead network – Network pole

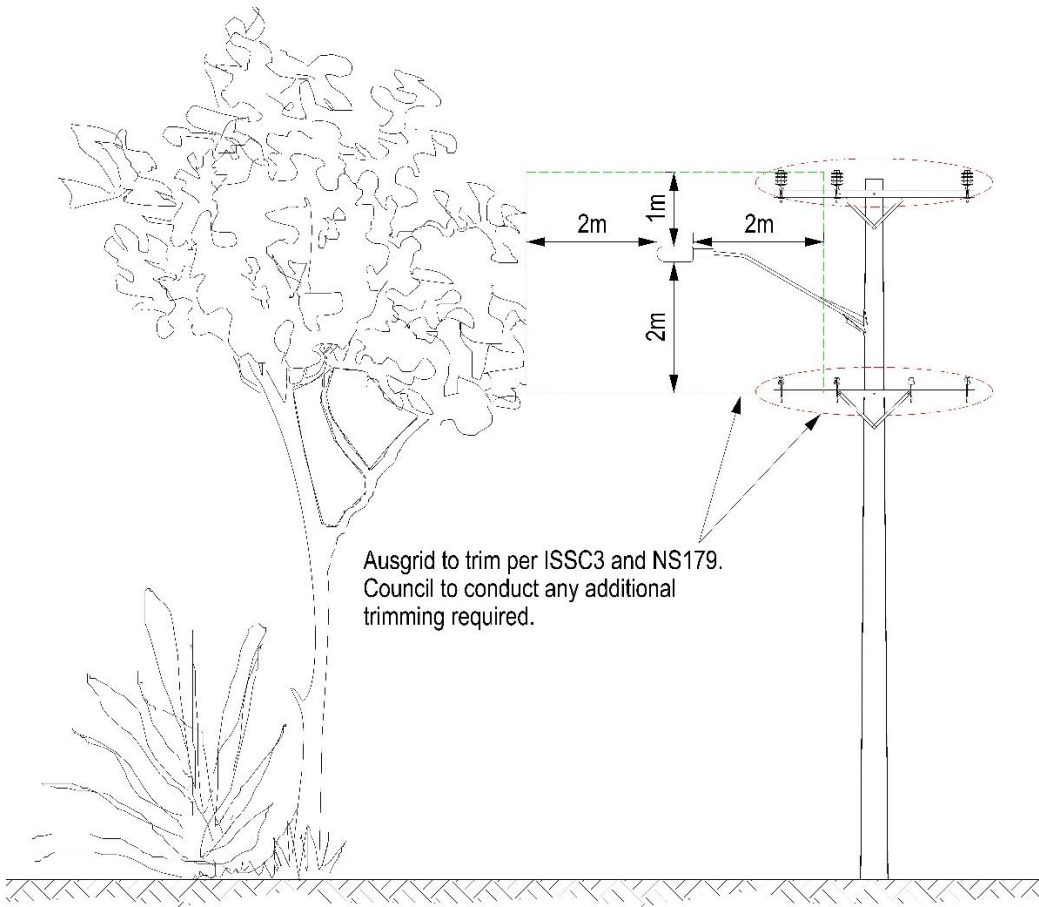
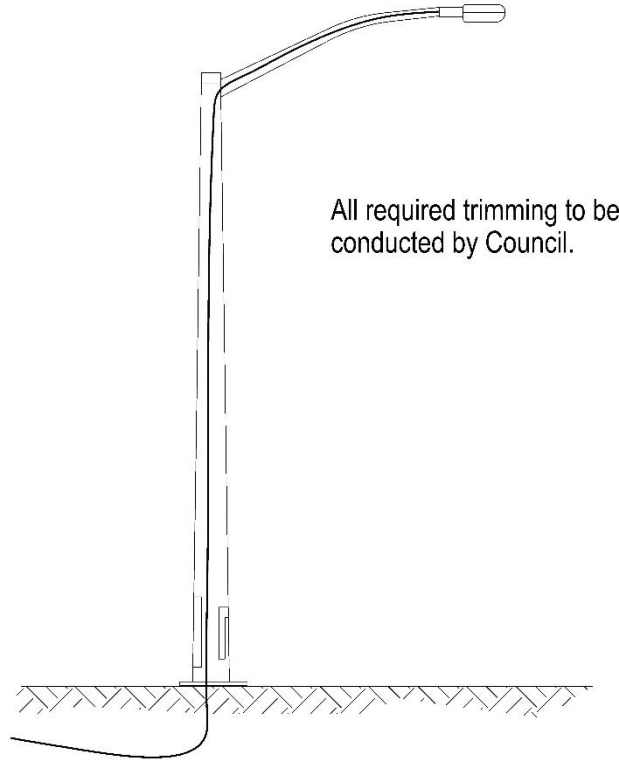


Figure 8: Vegetation management where connected to the underground network



## 9 Service Standards

### 9.1 Guaranteed Service Levels

Ausgrid is committed to maintaining Public Lighting service levels in compliance with the NSW Public Lighting Code. Please follow link to The NSW Public Lighting Code for detail at <https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/public-lighting-code>

### 9.2 Auditing

Ausgrid audits the streetlighting asset base in accordance with section 12.5 of the Metrology Procedure: Part A published by AEMO under rule 7.16 of the National Electricity Rules.

The streetlighting equipment is audited during maintenance activities. During randomly selected maintenance jobs, data in Ausgrid systems are compared with equipment installed in the field. When required, data are corrected, and correction note in Ausgrid systems. Ausgrid prepares report at the end of each financial year and proposes corrective actions where required.

## 10 Definitions

Term	Description	Link
AER	Australian Energy Regulator	<a href="https://www.aer.gov.au/">https://www.aer.gov.au/</a>
ASP	Accredited Service Provider	n/a
ANS	Ancillary Network Services. Services approved and regulated by AER in compliance with current determination.	n/a

Term	Description	Link
ASP1	Accredited Service Provider, Level 1 - Accreditation: involving the Contestable construction of transmission and distribution works such as the installation of high voltage and LV distribution cables and substations (i.e. Distribution Work).	<a href="#">List of Accredited Service Providers</a>
ASP2	Accredited Service Provider, Level 2 - Accreditation: involving the Contestable installation of overhead and underground service mains and metering equipment, the disconnection and reconnection of supply to carry out work on the installation and energising installations.	
ASP3	Accredited Service Provider, Level 3 - Accreditation: involving the design of electrical reticulation systems to be constructed as Contestable works.	
AS/NZS1158	Australian Standard 1158, Lighting for roads and public spaces series	<a href="https://www.saiglobal.com/">https://www.saiglobal.com/</a>
AUSPL MCWAF	Ausgrid Public Lighting Minor Capital Works Approval Form. Customer acceptance of proposed design (Electrical Connection Design, Illumination Design if applicable and associated capital and maintenance charges as well as any residual values of any removed or replaced streetlighting equipment.	n/a
The Code	NSW Public Lighting Code	<a href="#">NSW Public Lighting Code</a>
Contestable	Contestability is a scheme that accredits service providers that undertake Contestable work on the electricity network (the Accredited Service Providers (ASP) Scheme).	n/a
Customer	Customer as per the meaning in the NSW Public Lighting Code v1.4	<a href="#">NSW Public Lighting Code</a>
Distribution Network Service Provider (DNSP)	DNSP has the meaning given to that term in the Electricity Supply Act 1995.	n/a
Electrical Connection Design	Electrical connection design to Ausgrid network standards to connect new or modified lighting assets required by the Illumination Design	n/a
Engineering Service Charges	Engineering Service Charges (ESC) are applied to Minor Capital Works and are comprised of the mandatory Electrical Connection Design and optional Illumination Design	n/a
ES	Ausgrid's Electrical Supply Standards.	<a href="#">Ausgrid Public Site</a>
Fault	A luminaire that is not producing light or whose light output is either materially lower than the normal operation or is ineffective.	n/a
Fault Report	An instance of the Public Lighting Service Provider receiving a report of a Fault via its call centre or website.	n/a
Illumination Design	Lighting design that is generally to a specific sub-category of lighting under AS/NZS1158 as nominated by the road authority	n/a
Luminaire	An apparatus that distributes, filters or transforms the light transmitted from one or more lamps and includes, other than the lamps themselves, all the parts necessary for fixing and protecting the lamps and where necessary circuit auxiliaries together with the means for connecting them to the distribution system.	n/a
MCW	Minor Capital Works – Installation of up to ten Luminaires.	n/a

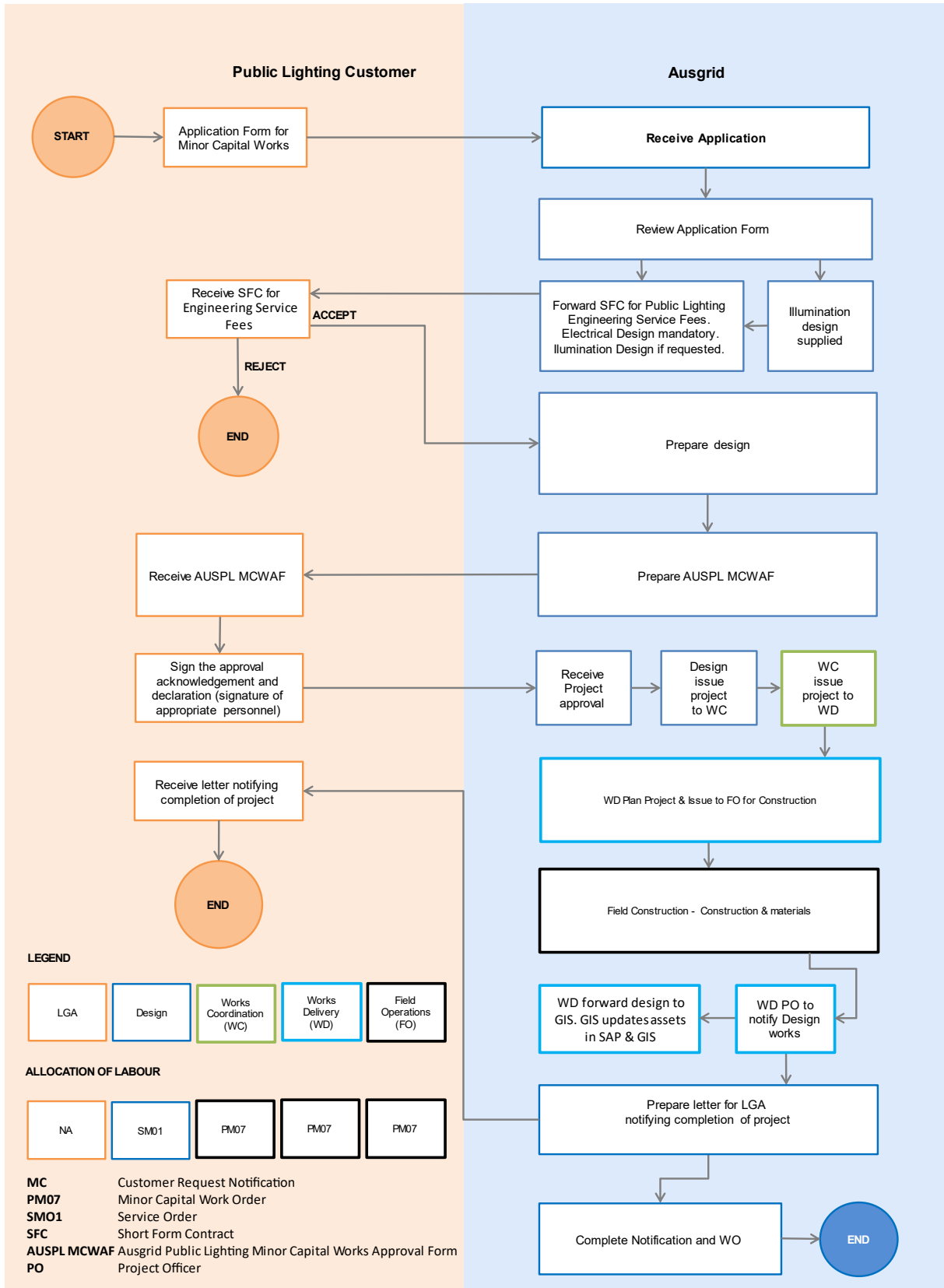
Term	Description	Link
MFP	Multi-Function Poles	n/a
Non-Standard Luminaire	A Luminaire (fitting) other than those appearing on a Public Lighting Service Provider's List of Standard Luminaires.	n/a
NS	Ausgrid's Network Standards	<a href="#">Ausgrid Public Site</a>
NS119	Ausgrid Public Lighting Design and Construction Network Standard	<a href="#">Ausgrid Public Site</a>
Public Lighting	<p>The term Public Lighting is used throughout this plan and the Public Lighting Code to cover lighting schemes for the generality of roads and outdoor public areas (e.g., parks, reserves, pedestrian zones, footpaths, cycle paths, car parks and other public areas) that are managed by or on behalf of a customer.</p> <p>As the primary aim of a public lighting scheme is that of safe movement of people, the AS/NZS1158 Lighting for Roads and Public Spaces series of standards divide road lighting into the following broad categories:</p> <ul style="list-style-type: none"> <li>• 'Category V' lighting means lighting that applies to roads on which the visual requirements of motorists are dominant, for example, traffic routes.</li> <li>• 'Category P' lighting means lighting that applies to roads on which the visual requirements of pedestrians are dominant, for example, local roads and outdoor public areas.</li> </ul>	n/a
Public Lighting Assets	All assets of the Public Lighting Service that are dedicated to the provision of public lighting, including lamps, luminaires, mounting brackets and supports on which the fixtures are mounted, supply cables and control equipment (for example, photoelectric cells and control circuitry) but not including the Public Lighting Service Provider's protection equipment (for example, fuses and circuit breakers).	n/a
Public Lighting Services	<p>Any of the following services that may be provided for public lighting:</p> <ul style="list-style-type: none"> <li>• operation of Public Lighting Assets, including handling enquiries and complaints about public lighting, and dispatching crews to repair Public Lighting Assets;</li> <li>• maintenance, repair, alteration, relocation and replacement of Public Lighting Assets;</li> <li>• design of new Public Lighting Assets; and</li> <li>• installation of new Public Lighting Assets.</li> </ul>	n/a
Public Lighting Service Provider	A Distribution Network Service Provider (DNSP) providing Public Lighting Services	n/a

## 11 Forms and References

Term	Description	Link
Application Form	Online Application Form (for new or altered public lighting)	<a href="#">Ausgrid Online Application Portal</a>
Public Lighting Application User Guide	Online Application Form (for new or altered Public Lighting) Instruction	<a href="#">Ausgrid online application user guide</a>
Contestable Process Flowchart	Step by Step Process	<a href="#">Ausgrid Contestable process flowchart</a>
Ausgrid Public Lighting Price List	List of Annuity Charges	<a href="#">Ausgrid Public Lighting Price List</a>

# 12 Appendices

## Appendix A: Public Lighting Minor Capital Works Process



## Appendix B: Public Lighting Contestable Process

Refer to the following link: <https://www.ausgrid.com.au/-/media/Documents/ASP/Design/Contestable-Connections-Process-Flowchart.pdf>



**Appendix C: Guide to applicable processes to common Public Lighting tasks**

Task	Rate Prior to Task	New Rate After the Task Completed	Process	Notes
<b>(A) Instigated by streetlighting customer request</b>				
<b>LUMINAIRE REPLACEMENT</b>				
Replacement of Cat P/V luminaire with different luminaire (Qty: 10 or less) - O/H or U/G supplied	Rate 1	Rate 1	MCW	
	Rate 2	Rate 4		
	Rate 4	Rate 4		
	Rate 5	Rate 1		
Replacement of Cat P/V luminaire with different luminaire (Qty: 11 or more) - O/H or U/G supplied	Rate 1	Rate 5	Contestable	
	Rate 2	Rate 2		
	Rate 4	Rate 2		
	Rate 5	Rate 5		
Replacement of Cat P/V luminaire with LED luminaire with glare shield (Qty: 10 or less) - O/H or U/G supplied	Rate 1	Rate 1	MCW + SFC	MCW only covers:
	Rate 2	Rate 4		<ul style="list-style-type: none"> <li>Luminaire cost and Installation fee</li> </ul>
	Rate 4	Rate 4		SFC to cover:
	Rate 5	Rate 1		<ul style="list-style-type: none"> <li>Cost of material (Glare Shield Visor) and ANS Fee (Design and Installation)</li> </ul>
Replacement of Cat P/V luminaire with LED luminaire with glare shield (Qty: 11 or more) - O/H or U/G supplied	Rate 1	Rate 5	Contestable	
	Rate 2	Rate 2		
	Rate 4	Rate 2		
	Rate 5	Rate 5		
<b>GLARE SHIELD INSTALLATION</b>				
Replacement of visor with glare shield visor on existing Cat P/V LED luminaire – regardless of being part of a LED rollout program- O/H or U/G supplied.	Rate 1	Rate 1	ANS	SFC to cover:
	Rate 2	Rate 2		<ul style="list-style-type: none"> <li>Cost of material (Glare Shield Visor)</li> </ul>
	Rate 4	Rate 4		<ul style="list-style-type: none"> <li>ANS Fee (Design and Installation)</li> </ul>
	Rate 5	Rate 5		

Task	Rate Prior to Task	New Rate After the Task Completed	Process	Notes
<b>BRACKET REPLACEMENT OR MODIFICATION</b>				
Replacement of bracket with different bracket type (Qty: 10 or less) - O/H or U/G supplied	Rate 1	Rate 1	MCW	
	Rate 2	Rate 2	SFC	SFC to cover: • Cost of material (Bracket) and ANS Fee (Design and Installation)
	Rate 4	Rate 4		
	Rate 5	Rate 5	MCW	
Replacement of bracket with different bracket type (Qty: 11 or more) - O/H or U/G supplied	Rate 1	Rate 2	Contestable	Customer must additionally pay the Residual Value of Column and Luminaire
	Rate 2	Rate 2	Contestable	
	Rate 4	Rate 4	Contestable	
	Rate 5	Rate 2	Contestable	Customer must additionally pay the Residual Value of Column
Replacement of an existing <b>defective</b> visor with a new visor (without changing Luminaire itself) - O/H or U/G supplied	Rate 1	Rate 1	Routine Maintenance	
	Rate 2	Rate 2		
	Rate 4	Rate 4		
	Rate 5	Rate 5		
Replacement of suspended luminaire with pole-mounted bracket and standard luminaire	Rate 1	Rate 1	MCW	
	Rate 2	Rate 4		
Lower or raise the height of existing bracket and streetlight (without replacing the luminaire or bracket) - O/H only	Rate 1	Rate 1	SFC	SFC to cover:
	Rate 2	Rate 2		• Cost of material (any accessories required to carry out the job)
	Rate 4	Rate 4		• ANS Fee (Design and Installation)
	Rate 5	Rate 5		
<b>POLE REPLACEMENT OR RELOCATION</b>				
Replacement/relocation of dedicated timber pole to	Rate 1	Rate 2	Contestable	
	Rate 2	Rate 2		

Task	Rate Prior to Task	New Rate After the Task Completed	Process	Notes
suit specific lighting position requirements - O/H supplied	Rate 4	Rate 2		
	Rate 5	Rate 2		
Replacement/relocation of non-dedicated timber pole to suit specific lighting position requirements - O/H supplied	Rate 1	Rate 2	Contestable	
	Rate 2	Rate 2		
	Rate 4	Rate 2		
	Rate 5	Rate 2		
Replacement of existing timber pole due to insufficient strength to support new bracket and streetlight - O/H supplied (e.g. nailed pole or <200mm diameter pole)	Rate 1	Rate 2	Contestable	
	Rate 2	Rate 2		
	Rate 4	Rate 2		
	Rate 5	Rate 2		
Re-aiming or re-orientation of existing streetlight and/or bracket from its initial position- O/H supplied	Rate 1	Rate 1	SFC	SFC to cover:
	Rate 2	Rate 2		<ul style="list-style-type: none"> <li>• Cost of material (any accessories required to carry out the job)</li> </ul>
	Rate 4	Rate 4		<ul style="list-style-type: none"> <li>• ANS Fee (Design and Installation)</li> </ul>
	Rate 5	Rate 5		Note: This job could be carried out as part of Ausgrid's routine Maintenance Program if the re-aiming is to bring the bracket/streetlight back to the initial/correct position.
<b>ASSET REMOVAL</b>				
Removal of streetlight, bracket and dedicated pole - O/H supplied	Rate 1	N/A	ANS	SFC to cover resources required for decommissioning. Construction offered as a quoted ANS service.
	Rate 2	N/A		
	Rate 4	N/A		
	Rate 5	N/A		
Removal of streetlight and bracket with a non-	Rate 1	N/A	ANS	SFC to cover resources required for decommissioning. Construction offered as a quoted ANS service.
	Rate 2	N/A		

Task	Rate Prior to Task	New Rate After the Task Completed	Process	Notes
dedicated pole to remain - O/H supplied	Rate 4	N/A		
	Rate 5	N/A		
Removal of streetlight and column (either decorative or standard) - U/G supplied	Rate 1	N/A	Contestable	
	Rate 2	N/A		
	Rate 4	N/A		
	Rate 5	N/A		
<b>LUMINAIRE INSTALLATION</b>				
Installation of up to 10 new standard luminaires on existing timber poles and/or installation of up to 2 new dedicated timber poles to support new standard luminaires - O/H supplied	N/A	Rate 1	MCW	
Installation of more than 10 new standard luminaires on existing timber poles and/or installation of more than 2 new dedicated timber poles to support new standard luminaires- O/H supplied	N/A	Rate 2	Contestable	
Installation of up to 10 new standard luminaires on existing timber poles and/or installation new non-dedicated timber poles to support new standard luminaires - O/H – U/G supplied	N/A	Rate 2	Contestable	
Installation of more than 10 new standard luminaires on existing timber poles	N/A	Rate 2	Contestable	

Task	Rate Prior to Task	New Rate After the Task Completed	Process	Notes
and/or installation new non-dedicated timber poles to support new standard luminaires- O/H supplied				
Installation of new galvanised streetlight standard/s - U/G supplied	N/A	Rate 2	Contestable	
Installation of new decorative streetlight column/s - U/G supplied	N/A	Rate 2	Contestable	
<b>MISCELLANEOUS TASKS</b>				
Illumination designs	N/A	N/A	SFC	SFC to cover:
				<ul style="list-style-type: none"> <li>• ANS Fee (Design)</li> </ul>

**(B) Instigated from Ausgrid projects or routine maintenance works**

**LUMINAIRE REPLACEMENT**

Replacement of defective/non-repairable standard luminaire with current equivalent - O/H supplied	Rate 1	Rate 1	Routine Maintenance	
	Rate 2	Rate 4		
	Rate 4	rate 4		
	Rate 5	Rate 1		
Replacement of defective/non-repairable standard luminaire with current equivalent - U/G supplied	Rate 1	Rate 1	Routine Maintenance	
	Rate 2	Rate 4		
	Rate 4	Rate 4		
	Rate 5	Rate 1		
Replacement of defective/non-repairable decorative luminaire with standard luminaire	Rate 1	Rate 1	Routine Maintenance	<p>If the defective decorative luminaire is non-standard, status of WNS must be selected in the SAP notification until the relevant customer decides on the available options below. Applying WNS will set notification as Held.:</p> <ol style="list-style-type: none"> <li>1) Ausgrid to replace the luminaire with the most suitable standard replacement, if possible</li> <li>2) Ausgrid to replace the decorative installation with a standard side entry streetlight along with a new standard column)</li> <li>3) Council to source the parts and pay the cost of Design and Installation under the SFC</li> </ol>
	Rate 2	Rate 4		
	Rate 4	Rate 4		
	Rate 5	Rate 1		
Replacement of defective/non-repairable decorative luminaire with a decorative luminaire that Ausgrid still offers	Rate 1	Rate 1	Routine Maintenance	
	Rate 2	Rate 4		
	Rate 4	Rate 4		
	Rate 5	Rate 1		

COLUMN REPLACEMENT				
Replacement of damaged/corroded/defective galvanised streetlight column with galvanised streetlight standard column	Rate 1		Rate 1	Routine Maintenance
	Rate 2		Rate 1	
	Rate 4		Rate 1	
	Rate 5		Rate 5	
Replacement of damaged/corroded/defective decorative streetlight column with a galvanised streetlight standard column	Rate 1		Rate 1	Routine Maintenance
	Rate 2		Rate 1	
	Rate 4		Rate 1	
	Rate 5		Rate 5	
Replacement of damaged/corroded/defective decorative streetlight column with decorative streetlight column that Ausgrid still offers	Rate 1		Rate 1	Routine Maintenance
	Rate 2		Rate 1	
	Rate 4		Rate 1	
	Rate 5		Rate 5	
BRACKET REPLACEMENT				
Replacement of bracket with different bracket type to address electrical clearance violation	Rate 1		Rate 1	Routine Maintenance
	Rate 2		Rate 2	
	Rate 4		Rate 4	
	Rate 5		Rate 5	

**Notes:**

- ANS** stands for Ancillary Network Service
- Cat P** stands for Category P Lighting
- Cat V** stands for Category V Lighting
- MCW** stands for Minor Capital Works
- O/H** stands for Overhead fed
- SFC** stands for Short Form Contract
- U/G** stands for Underground fed