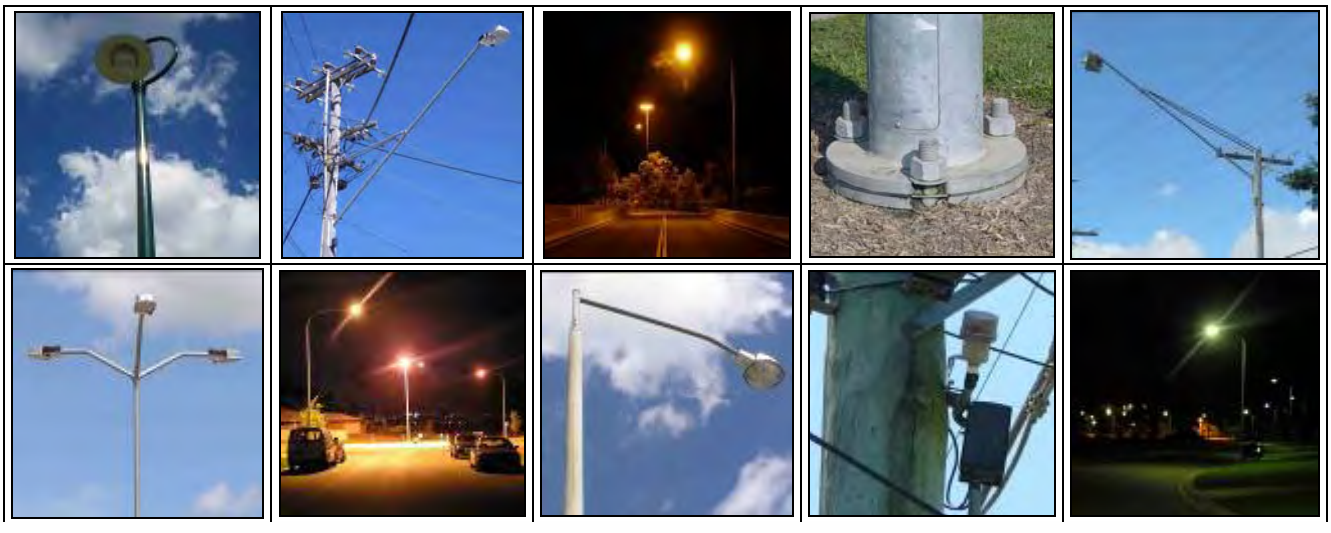
Public Lighting

Standard Conditions for Public Lighting Services



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1 PURPOSE AND SCOPE

This document states the ENERGEX Standard Conditions for the Provision of Public Lighting Services for the design, installation and maintenance of Public Lighting throughout Queensland.

These conditions cover Non-Contributed (Rate 1), Contributed (Rate 2) and Un-metered (Rate 3) categories of Public Lighting, private-metered and un-metered lighting installations. Conditions relating to “Watchman” lighting installations are covered in the Watchman Service Lighting Manual.

2 RESPONSIBILITIES

The responsibilities of the parties are defined in this document for the various categories of Public Lighting depending on ownership and funding by the parties, and whether or not standard equipment is used in the Public Lighting installations.

3 APPLICATION

The document specifies Standard Conditions under which ENERGEX and/or the relevant Public Bodies will design, install, operate and maintain the Public Lighting installations, in defined areas, to meet the requirements of the relevant Public Bodies, safety, performance and Regulatory requirements.

4 OBJECTIVE

The objective of the document is to clearly define the Standard Conditions that will be applicable to the provision of Public Lighting services to be performed by ENERGEX and the responsibilities for the various functions that will be performed either by ENERGEX or the Public Bodies, depending on the Public Lighting category and the options exercised by the Public Bodies.

The document provides a reference to standard equipment that ENERGEX will provide and references to the standards for design, installation, operation and maintenance of the Public Lighting installations to provide a safe, reliable and economic facility.

5 DEFINITIONS, ABBREVIATIONS, & ACRONYMNS

5.1. Approved Contractor shall mean a Private Company or a Public Body authorised by ENERGEX to install Public Lighting (Refer Appendix 7).

5.2. Declared Underground Area – Shall mean either.-
  a) Where the existing low voltage reticulation is underground cabling
  b) Other areas specifically designated by ENERGEX.

5.3. Defined Area – Roads and other Public thoroughfares – as described in Appendix 1 Section 1.1, that is under the control of a Public Body.

5.4. Developer - Any person, company, or Public Body which enters into an agreement with ENERGEX for the electrical reticulation to Public Lighting, Private Lighting, or Watchman Lighting included in this document.

5.5. DUoS – Distribution Use of System

5.6. Electricity Act – Shall mean the Queensland Electricity Act 1994 as amended.

5.7. Electricity Regulation – Shall mean the Queensland Electricity Regulation 1994 as amended.

5.8. Electrical Reticulation Design – The specifications detailing circuitry, protection, voltage drops, earthing, fault loop impedances, & overhead and underground construction requirements that are necessary for connection to ENERGEX's electrical network.

5.9. ENERGEX – Shall mean ENERGEX LIMITED – In accordance with the Electricity Act, an organisation that holds a "Supply Entity Authority" to supply electricity to a specific area.

5.10. Facilities Access Agreement – A legally binding agreement negotiated between ENERGEX and another party to permit and manage ENERGEX's electricity network asset sharing with that agreed external party.

5.11. Lighting Layout Design – The specifications and arrangement of street light hardware about the roadway in accordance with Australian Standards and the design brief.

5.12. Luminaire – Apparatus which distributes, filters or transforms the light transmitted from one or more lamps and which includes all the parts necessary for supporting, fixing and protecting the lamps but not the lamps themselves, and where necessary circuit auxiliaries together with the means for connecting them to the supply. (As defined in AS/NZS 60598.1).

5.13. Major Lamps in common use for Major Road lighting mean the following:-
  a) High Pressure Sodium 100 watt (S100) and above
  b) Metal Halide 150 watt (H150) and above
  c) Mercury Vapour 250 watt (M250) and above (Maintenance Only).

5.14. Minor Lamps are all lamps in common use for Minor Road lighting other than Major Lamps and include Mercury Vapour, High Pressure Sodium and Fluorescent.

5.15. Major Road means a main or arterial, or distributor road as defined by the Public body requiring illuminating to the performance, installation and design requirements of Category V1 – V5 lighting as specified in AS/NZS 1158.1.1.

5.16. Minor Road means a road other than a Major Road as defined by the Public Body requiring illuminating to the performance, installation and design requirements of Category P1 – P5 lighting as specified in AS/NZS 1158.3.1.

5.17. Metered Lighting – Lighting of private roads, walkways and open areas that are not dedicated as public roads according to Definition 5.3. Appendix 1, Section 1.2 provides a list of typical metered and un-metered lighting installations.

5.18. Pedestrian Crossing Lighting is only available for Public Bodies for the lighting installed on a pedestrian crossing in accordance with the requirements of AS/NZS 1158.4.

5.19. Point of Supply – Shall be determined by ENERGEX after negotiation with the Public or Private Body.

5.20. Public Body – Shall be defined as either:-
a) Local Government
b) Department of Main Roads (Queensland Transport)
c) Queensland Government Departments and Queensland Public Authorities as approved by the Queensland State Government.

5.21. Public / Street Light Schedule – Tabulated Schedules of the equipment to be installed, recovered, or relocated at each site in accordance with the requirements of ENERGEX.

5.22. Public Lighting – Un-metered lighting that is confined to Public roads and Public thoroughfares described as defined areas in Appendix 1, Section 1.1 and that is only available to Public Bodies. Appendix 1, Section 1.1 provides a list of typical un-metered Lighting Installations. The lighting of other public facilities such as public toilet blocks, identity signs, bus shelters, architectural features etc. is covered under Un-metered Supply to Non-Public Lighting (refer to Definition 5.3 and Appendix 1 Section 1.2.3).

5.23. Public Lighting Network Charges – Charges as approved by the Regulator for the use of transmission and distribution systems to supply Non-Contributed (Rate 1), Contributed (Rate 2) and Unmetered (Rate 3) categories of Public Lighting for the various wattages and types of lamps as published in ENERGEX's Tariff Schedule. These charges are only available to Public Bodies (refer Definition 5.17).

5.24. Public Lighting Code – Australian Standard AS/NZS 1158 series.

5.25. Non Contributed (Rate 1) Lighting – Public Lighting supplied, installed, owned and maintained by ENERGEX. (Refer to Section 10 for specific conditions).

5.26. NUoS – Network Use of System.

5.27. Contributed (Rate 2) Lighting – Public Lighting for which all supply and installation costs are funded by the Public Body or Developer and then ownership is vested in ENERGEX on completion of the installation. ENERGEX then assumes responsibility for maintenance of the installation. (Refer to Section 11 for specific conditions).

5.28. Unmetered (Rate 3) Lighting – Public Lighting supplied, installed, owned and maintained by the Public Body. (Refer to Section 12 for specific conditions).

5.29. Regulator – shall be as defined in Legislation to regulate ENERGEX in Queensland.

5.30. Service Life – the economical maintainable operating life of specific types of Public Lighting equipment, based upon the efficacy, spare parts availability and ongoing maintenance costs.

5.31. Traffic Controller – a person whose duty is to control traffic at road works site. Such control is normally exercised by the use of stop/slow battens but may be by manual control of the traffic signals or other devices.

5.32. TUoS – Transmission Use of System.

5.33. Un-metered Supply to Non-Public Lighting – lighting installed either by Public Bodies or Private Companies in the road (refer Definition 5.20) that does not specifically light the roadway but is used to light a specific object. Appendix 1, Section 1.2.3 provides a list of typical Un-metered Supply to Non-Public Lighting installations.

5.34. Wiring Rules – shall mean the current issue of the Australian and New Zealand Standard AS/NZS 3000.

5.35. SWP – ENERGEX based "Standard Works Procedure"

5.36. Distribution Fuse Panel – shall mean the electrical panel at which the protective fuse(s) / switchfuse(s) that controls the public lighting circuits is located to enable isolation for maintenance or circuit interruption under fault conditions. The location of the Distribution Fuse Panel is in either a service pillar/cabinet or service cable pit adjacent to or near the street light installation.

5.37. Switchboard – shall mean the electrical isolation & protective device, neutral link & driven earth electrode controlling and protecting the consumer's installation.

6 REFERENCED DOCUMENTS

6.1 ENERGEX Documents

- ENERGEX 6185-A4 V8: SWP 31 - Commissioning & Operation of the Distribution Network, Doc Type PDF.
- ENERGEX 8007-A4 V2: SWP 47.1 - The Design of Estates, Doc Type PDF.
- ENERGEX 8005-A4 V4: SWP 47.2 - Consultancy Services for the Project Management of Estate Construction and Public Lighting Construction, Doc Type PDF.
- ENERGEX 7786-A4 V2: SWP 47.3 - Design of Contributed (Rate 2) Public Lighting Installations, Doc Type PDF.
- ENERGEX 6866-A4 V3: SWP 59 – Miscellaneous Shared Asset Installations on ENERGEX Network Assets, Doc Type PDF.
- ENERGEX 8406-A4 V2: SWP 59.1 – Banner Installations on ENERGEX Street Lighting Columns, Doc Type PDF.
- ENERGEX 8407-A4 V2: SWP 59.2 – Decorative Installations on ENERGEX Poles and Street Lighting Columns, Doc Type PDF
- ENERGEX 8404-A4 V2: SWP 59.3 – Security Camera Installations on ENERGEX Poles and Street Lighting Columns, Doc Type PDF.
- ENERGEX 8712-A4 V1: SWP 73 – Third Party Communication Installations on ENERGEX's Overhead Network Assets, Doc Type PDF.
- ENERGEX 8714-A4 V1: SWP 73.1 – Third Party Communication Installations on ENERGEX's Street Lighting Columns, Doc Type PDF..
- ENERGEX TS 300B 23/9/2009 Annexure 1 Technical Specification for Road Lighting Poles And Outreach Arms, Doc Type PDF
- ENERGEX TS 05-02-01:2007 Technical Specification for Road Lighting Poles, Outreach Arms & Foundation Assemblies, Doc Type PDF
- ENERGEX 01609 VX: Mains Asset Maintenance Policy, Doc Type PDF
- ENERGEX 0002 29/01/2009 Form 2, Electrical Work Request, Request for Initial Connection, Metering Change or Service Alteration, Doc Type PDF
- www.ENERGEX.com.au/service_providers/technical_docs/asp/technical_Docs.asp, Index of Doc Type PDF
- www.ENERGEX.com.au/network/network_prices/network_prices.html#networkprices, Index of Doc Type PDF

6.2 External Documents

Refer to the latest issue of the following documents (including all amendments):

- International Standards ISO9000/1:2005/8: Quality Management Systems
- Australian Standard AS/NZS 1158.0:2005: Lighting for Roads & Public Spaces, Introduction, Doc Type PDF
- Australian Standard AS/NZS 1158.1.1:2005 Lighting for Roads & Public Spaces, Part 1.1 Vehicular Traffic (Category V) Lighting – Performance & Design Requirements, Doc Type PDF

- Australian Standard AS/NZS 1158.1.3:2005 Lighting for Roads & Public Spaces, Part 1.3 Vehicular Traffic (Category V) Lighting – Guide to design, installation, operation & maintenance, Doc Type PDF
- Australian Standard AS/NZS 1158.2:2005 Lighting for Roads & Public Spaces, Part 2 Computer Procedures for the Calculation of Light Technical Parameters for Category V and Category P Lighting, Doc Type PDF
- Australian Standard AS/NZS 1158.3.1:2005 Lighting for Roads & Public Spaces, Part 3.1 Pedestrian Area (Category P) Lighting – Performance & Design Requirements, Doc Type PDF
- Australian Standard AS/NZS 1158.4:2009 Lighting for Roads & Public Spaces, Part 4 Lighting for Pedestrian Crossings, Doc Type PDF
- Australian Standard AS/NZS 1158.5:2007 Lighting for Roads & Public Spaces, Part 5 Tunnels & Underpasses, Doc Type PDF
- Australian Standard AS/NZS 1158.6:2004 Lighting for Roads & Public Spaces, Part 6 Luminaires, Doc Type PDF
- Australian Standard AS/NZS 3000:2007 Wiring Rules, Doc Type PDF.

7 OBJECTIVES & DESIGN OF PUBLIC LIGHTING

7.1 Objectives

In the context of this Policy, Public Lighting is the lighting of roads and other public thoroughfares. (Refer Appendix 1, Section 1.1).

The following design guidelines do not apply to the lighting of Public toilets, identity signs, bus shelters, architectural features etc. (Refer Appendix 1, Section 1.2).

The Public Lighting Code classifies Public Lighting into three broad categories as follows:-

"V" (V1 – V5) Category – Major Road Lighting – e.g., arterial roads defined for the sub-categories in AS/NZS 1158.1.1

"P" (P1 – P5) Category – Minor Road Lighting – e.g., local roads and pathways as applicable to the sub-categories P1 – P5 as defined in AS/NZS 1158.3.1

"P" (P6 – P12) Category – Public area lighting – e.g., shopping precincts, malls, subways, pathways, linking areas and car parks etc. as defined in AS/NZS1158.3.1

(a) Objectives – Major Road Lighting (Category V)

The objective of Major Road Lighting is to provide a lighted environment that is conducive to the safe and comfortable movement of vehicular and pedestrian traffic at night and the discouragement of illegal acts.

To accomplish this, it is necessary to illuminate the road to a sufficient level to reveal specific features, such as roadway, kerbs, footpaths, pedestrians etc.

The above requirements are considered to be achieved if a Public Lighting project is designed and installed according to the requirements of the Australian/New Zealand Standard AS/NZS 1158 "Lighting for roads and public spaces" (Category V)

(b) Objectives – Minor Road Lighting (Category P)

The objective of Minor Road Lighting is to provide a lighted environment where due to the low vehicular traffic flow the visual requirements of pedestrians are dominant.

To accomplish this, it is necessary to illuminate both the roadways and the surrounding verges to allow pedestrians to identify obstructions, and to aid motorists in recognising that pedestrians may be present.

The lighting levels are far lower than for Major Road lighting and the design is based upon the amount of light falling on the road reserve (boundary to boundary).

The above requirements are considered achieved if a Public Lighting project is designed and installed according to the requirements of the Australian/New Zealand Standard AS/NZS 1158 "Lighting for roads and public spaces" (Category P – sub-categories P1 – P5).

(c) Objectives – Public Lighting of Public Areas (Category P)

The objective of lighting Public Areas is to provide a lighted environment where the visual requirements of pedestrians are dominant.

The difference to Minor Road Lighting (Category P1 – P5) is that for this type of lighting vehicular traffic movements are not normally present, except for the case of exterior car parks.

The above requirements are considered to be achieved if a Public Lighting project is designed and installed according to the requirements of the Australian/New Zealand Standard AS/NZS 1158 "Lighting for roads and public spaces" (Category P – sub-categories P6 – P12).

7.2 Lighting Design of Non-Contributed (Rate 1) & Contributed (Rate 2) Public Lighting

Non-Contributed (Rate 1): The Public Body shall provide ENERGEX with a comprehensive lighting design brief requesting a design.

Contributed (Rate 2): The Public Body shall provide ENERGEX (or an Approved Consultant, as authorised by ENERGEX for competencies demonstrated in accordance with SWP 47.3 “Design of Contributed (Rate 2) Public Lighting Installation”) with a comprehensive lighting design brief requesting a design, or a completed lighting design including equipment schedule.

All lighting designs carried out by ENERGEX shall be in accordance with the Australian/New Zealand Standard 1158 series “Lighting for Roads and Public Spaces” or in accordance with the specific written requirements of the Public Body.

Where a Public Body elects to either amend or carry out the Public Lighting design, or alternatively allows a developer/consultant to carry out the design. ENERGEX takes no responsibility as to the designs compliance with the AS/NZS 1158 Series.

7.3 Lighting Design of Unmetered (Rate 3) Public Lighting

The Public Body shall be responsible for the lighting design of all Unmetered (Rate 3) Public Lighting.

7.4 Special Considerations for the Use of Slip Base Poles

A slip-base Public Lighting pole is designed to break away, yield and absorb the energy of an impacting vehicle, to the extent that the resultant deceleration forces on the vehicle and its occupants, under specified conditions, are lessened to those that would otherwise occur.

Where a pole has a history of being damaged by vehicles, local Hubs / Depots of ENERGEX shall contact the Public Body in whose area the pole is located and consult with the Public Body either on its relocation or replacement with ENERGEX approved standard slip-base pole which would be subject to the following constraints:-

- The site is assessed as suitable (e.g. low pedestrian activity & low likelihood of a secondary accident),
- Slip-base poles may only be used for the support of street lights supplied by underground cables as the connection of overhead service cables are not permitted because such connection would exert overturning moments on the poles that would reduce the effectiveness of the slip–base design to respond appropriately to vehicular impact.
- These poles will be installed either at the specific request or subject to the endorsement of the Public Body.

7.5 Special Considerations for the Use of Hinged Poles

ENERGEX may approve the use of standard hinged poles, as detailed in the Public Lighting Construction manual, for special locations where access for maintenance vehicles is physically precluded (e.g. narrow stepped laneways) or such access is disallowed for reasons of traffic obstruction, and where the poles may be lowered safely for luminaire / lamp replacement during normal working hours.

Special locations that will receive consideration for the use of hinged poles are as follows:

- Laneways
- Cycleways
- Pathways

- Stairways
- Roundabouts
- Bridges

Approval shall be sought from ENERGEX for the use of hinged poles, at the design stage prior to construction.

7.6 Special Conditions for the Use of Joint Use Poles Supporting Traffic Signalling Lights, & Road Lighting Luminaires

In order to avoid additional poles for Public Lighting in close proximity to traffic signalling poles, joint use of the traffic signalling pole should be considered in the design where available combination mast arms and risers on the traffic signalling pole present a suitable attachment for standard Public Lighting outreach brackets for mounting of luminaires and accommodation of control facilities.

The design should provide for circuit separation/identification and individual control and protection of the traffic signalling and Public Lighting installations respectively with supply neutral bonding to the combination steel supporting structure and connection to the earthing conductor of the traffic signalling circuit.

8 PUBLIC LIGHTING TARIFFS

8.1 Public Lighting Tariffs

With the introduction of Full Retail Contestability from 1st July 2008 for the energy consumed in lamps and the associated control gear of Public Lighting installations, the Public Lighting tariffs are a matter between the chosen Retail Entity and the customer (Public Body), subject to any conditions imposed by the Regulator.

Included in the Public Lighting tariffs are the Regulated Alternative Controlled Service charges and the Regulated Standard Controlled Service charges, being Network Use-of-System (NUoS) charges.

8.2 Network Use of System Charges

Network Use-of-System (NUoS) charges are the sum of the Transmission Use-of-System (TUoS) charges and the Distribution Use-of-System (DUoS) charges for the conveyance of electricity to street lights.

Public Lighting installations are un-metered and the charges are based upon the lamp wattage and hours of operation controlled by Photo Electric (PE) cell or other switching controller. These charges are referred to in ENERGEX's Tariff Schedule as Standard Controlled Service charges and are expressed in cents per kWH (c/kWH).

NUoS charges cover the costs of conveying electricity to major and minor public street lighting, Non-Contributed (Rate 1), Contributed (Rate 2) and Un-metered (Rate 3) Public Lighting installations, but do not include the energy consumed in the lamps and control gear.

NUoS charges for Public Lighting are set by the Regulator and are reviewed at regular intervals.

The current NUoS charges are detailed in ENERGEX's Tariff Schedule that includes tariffs for categories other than street lighting, namely non-public lighting un-metered supply and watchman lighting.

8.3 Alternative Controlled Service Charges

These charges cover asset related, operating and maintenance costs for major and minor, non-contributed and contributed public street lighting and are expressed in $ per light per day.

These charges are set by the Regulator and current prices are contained in ENERGEX's Tariff Schedule.

ENERGEX's Tariff Schedule is available at:

http://www.energex.com.au/network/network_prices/pdf/20100618%20Tariff%20Schedule%202010-11.pdf

Refer to Appendix 3, Section 1.1 for more details.

9 GENERAL REQUIREMENTS FOR NON-CONTRIBUTED (RATE 1) & CONTRIBUTED (RATE 2) PUBLIC LIGHTING

The provisions of this clause only apply to Non Contributed (Rate 1) and Contributed (Rate 2) Public lighting.

9.1 General Guidelines

Non-Contributed (Rate 1) or Contributed (Rate 2) will not be offered or remain if any of the following conditions exist:-

- The Public Body has a deemed connection agreement with ENERGEX for electricity supply to Public Lighting and has not nominated a chosen Retail Entity.
- The Lighting Design is not approved by a Public Body.
- The Electrical Design is not approved by a Registered Professional Engineer of Queensland (RPEQ).
- An audit of the Electrical Design finds non-compliance with ENERGEX's design and construction standards.
- Access for a maintenance vehicle provided with an Elevating Work Platform (EWP) is restricted due to terrain or special landscape conditions.
- The width of shoulder on entry/exit ramps and two-way roads does not provide adequate parking space (typically 3.5 metres width required for EWP) for the safe operation of EWP vehicle in maintenance mode, and after allowing for the parking space the adjacent traffic lane would be less than 3.5 metres wide.
- Public Lighting installation exists at a location which is Contributed (Rate 2) but access to the Luminaire is now restricted.
- Equipment that is non-standard for ENERGEX is required by the client.
- Above normal maintenance expenses will be incurred by ENERGEX due to the need for traffic controller (refer Definition 5.31) and the requirements of Queensland Transports "Manual of Uniform Traffic Control Devices."
- A Public Lighting pole alignment and /or electricity cabling alignment has not been specified for the particular road reserve including alignments for poles and cabling for lighting of bikeways and pathways within the road reserve, if not already specified as a standard footpath allocation for electricity services.
- Public Lighting poles are located in or within one metre of swale drains within the road verge, or in floodways beside creeks.
    - The installation sustains significant and repetitive damage due to site conditions or vandalism.

9.2 Switching Arrangements for Luminaire Control

To ensure an annual average of 4,200 night time hours of Luminaire operation, All Contributed (Rate 2) Public Lighting installations are switched by either individual PE cells fitted to each luminaire or ENERGEX approved time-switching device controlling a group of luminaires in special precincts such as Central Business District (CBD) areas.

All luminaires supplied to ENERGEX specification are fitted with a PE cell base. A Public Body may request, in writing, that all Non Contributed (Rate 1) and Contributed (Rate 2) luminaires of a specific installation be switched simultaneously. ENERGEX may provide this facility, however the Public Body shall bear all reasonable costs in excess of those required to provide other than standard switching arrangements.

9.3 Aeroscreen Luminaires

Aeroscreen luminaires would be recommended in the lighting design only where an increase in luminaire glare may result in a loss of visual performance of motorists or pedestrians, or

where a reduction in stray lighting is deemed appropriate or where specifically required by the Public Body.

Typical examples of recommended locations for the installation of aeroscreen luminaires would be:-

(a) Within 6km of night operational airports when specified by the Civil Aviation Authority
(b) Isolated Intersections
(c) Steep crests
(d) Roadway fly over's
(e) At the head of a cul-de-sac or court
(f) Rail crossings

9.4 Shading of Non-Contributed (Rate 1) & Contributed (Rate 2) Luminaires

It is not the policy of ENERGEX to fix internal or external shades to Non Contributed (Rate 1) or Contributed (Rate 2) Public Lighting luminaires, or to replace existing luminaires with an aeroscreen type.

Where an existing public lighting installation has been designed to the Public Lighting Code requirements, the fitting of shields or aeroscreen luminaires will interfere with the light distribution such that compliance with the Public Lighting Code may be negated.

The Australian Standard AS 4284 – 1997 "Control of the Obtrusive Effects of Outdoor Lighting" specifically exempts Public Lighting from the requirements of that Standard.

The replacement of an existing luminaire with an aeroscreen type or the fitting of shields may only be authorised in writing by the relevant Public Body and once installed, ENERGEX will not be responsible for any alterations to the roadway illumination distribution, and subsequent non-compliance with the Public Lighting Code.

All costs associated with the installation shall be borne by the Public Body according to the requirements of Appendix 4 Section 1.1

9.5 Attachments to Public Lighting Poles

ENERGEX may allow Public Bodies and other parties authorised by ENERGEX to attach special non-Public Lighting equipment (e.g., telecommunications infrastructure), signs, temporary banners, and decorative/festive season attachments to Non Contributed (Rate 1) and Contributed (Rate 2) Public Lighting poles according to the following conditions.

(a) These attachments may be subject to legally binding Facilities Access Agreement requirements for shared use of ENERGEX's electricity network assets. Where required the Agreement shall be negotiated with ENERGEX's Shared Assets Manager prior to any such installations occurring. Contact ENERGEX's Shared Assets Manager for further details.

(b) Indemnity

Indemnity requirements are contained within the relevant Facilities Access Agreement. In cases where a Facilities Access Agreement does not exist, the Public Body or other party authorised by ENERGEX (as is relevant) must indemnify ENERGEX against and be liable for any damage caused by any attachment or the operation of the installation or attachment to any of ENERGEX's Public Lighting Pole and the actions of any persons working for or on behalf of the Public Body or ENERGEX's authorised party (as is relevant) during the erection, installation, maintenance or removal of any sign, banner or any other attachment attached to any Public Lighting pole, to the written satisfaction of ENERGEX.

(c) Temporary Banners/Decorations and Special Equipment such as Security Cameras and Telecommunication Antennae

The attachment of temporary banners and/or decorations to dedicated Public Lighting poles will be permitted at the discretion of ENERGEX. Attachments that will subject the pole to stresses outside of its mechanical design limits or that will adversely interfere with the light distribution will be disallowed.

In addition to the requirements of any Facilities Access Agreements, details of technical compliance requirements for the various attachments to ENERGEX's Public Lighting poles are contained within ENERGEX's Standard Work Procedures (SWP's) as follows:

- SWP 59 "Miscellaneous Shared Asset Installations on ENERGEX Network Assets"
- SWP 59.1 "Banner Installations on ENERGEX Street Lighting Columns"
- SWP 59.2 "Decorative Installations on ENERGEX Poles and Street Lighting" Columns
- SWP 59.3 "Security Camera Installations on ENERGEX Poles and Street Lighting" Columns
- SWP 73 "Third Party Communication Installations on ENERGEX's Overhead Network Assets"
- SWP 73.1 "Third Party Communication Installations on ENERGEX's Street Lighting" Columns.

(d) Standard Street Name and Parking Signs

Signs may be attached to ENERGEX poles provided the attachment is secure and does not damage the poles outer protective coating (galvanising or paint). Signs shall be located so as not to obstruct access hatchways or ENERGEX's asset numbers.

The Public Body will be responsible for all maintenance of signs and ENERGEX takes no responsibility for the removal and replacement of signs during pole replacement works.

(e) Decorative Street Name Signs

Should a Public Body or Developer wish to attach a decorative street name sign to Public Lighting poles then it will be necessary to obtain permission from ENERGEX.

Details of requirements for the various sign attachments to ENERGEX's Public Lighting poles are contained within ENERGEX's documents as follows:

- BMS 01918 – Management of Signs on ENERGEX Assets

9.6 Fitting of Vandal Guards to Non-Contributed (Rate 1) & Contributed (Rate 2) Luminaires

All costs associated with the supply and installation of vandal guards to Non Contributed (Rate 1) and Contributed (Rate 2) Luminaires shall be borne by the Public Body.

10 SPECIFIC REQUIRMENTS – NON-CONTRIBUTED (RATE 1) LIGHTING

10.1 General

Non-Contributed (Rate 1) Public Lighting may only be installed on roads or other public thoroughfares (refer Definition 5.3) at the written request of the Public Body.

Under this rate, the complete Public Lighting installation is **supplied, installed, owned and maintained** by ENERGEX.

Typical installations are detailed in Appendix 1, Section 1.1.

10.2 Design

Lighting designs should conform to the Public Lighting Code as a minimum standard. The design of Public Lighting may be divided into two distinct categories, Lighting Layout Design, and Electrical Reticulation Design.

The Lighting Layout and Electrical Reticulation Design of Non Contributed (Rate 1) Public Lighting shall be carried out by ENERGEX under normal circumstances.

ENERGEX may allow a Public Body to carry out Non Contributed (Rate 1) Public Lighting Designs.

The Electrical Reticulation Design and construction drawings shall be prepared and approved by ENERGEX.

Where a Public Body chooses to carry out Lighting Designs, the documentation provided to ENERGEX shall be in accordance with the requirements of Appendix 6.

ENERGEX will charge a fee for checking the Street Light Schedule(s), Lighting Layout and Electrical Reticulation Designs to ensure the compliance with ENERGEX's construction requirements. This fee will be based upon the recoverable works rate and will be estimated for each submission based upon the scope of the works submitted. The lighting design will not be checked for compliance with the Public Lighting Code unless specifically requested by the submitting Body, and if so requested a further checking fee will be charged.

If the design information is not provided in an acceptable form or is defective, then ENERGEX will not accept the public lighting installation as suitable for construction until the documentation is provided in an acceptable form.

10.2.1 Lighting Design

All lighting designs carried out by ENERGEX shall be in accordance will the Public Lighting Code as a minimum standard or in accordance with the specific written requirements (design brief) of the Public Body.

10.2.2 Electrical Reticulation Design

All Electrical Reticulation Designs carried out by ENERGEX shall comply with the Electricity Act and the Electricity Regulation.

10.2.3 Design Costs

All costs associated with any design (Lighting Layout and/or Electrical Reticulation) carried out by ENERGEX shall be borne by the Public Body.

10.3 Equipment

Only equipment complying with ENERGEX's specification shall be used for Non Contributed (Rate 1) installations. The specifications for equipment must be current at the design date where the design date is no more than two years prior to construction.

ENERGEX's specification numbers for equipment acceptable for Non Contributed (Rate 1) public lighting are listed in Appendix 5, Sections 1.1 – 1.4.

10.4 Installation

The public lighting installation shall be carried out by ENERGEX or its Approved Contractor, in accordance with the lighting design as accepted or amended in writing by the Public Body.

10.5 Responsibility for Maintenance

All ongoing maintenance of the Public Lighting installation shall be carried out by ENERGEX or its Approved Contractor, including replacement of equipment (e.g. poles, luminaires etc.) at the end of their useful life or due to damage.

ENERGEX reserves the right to replace an existing luminaire with an equivalent type such that the integrity of the design will be maintained when the existing luminaire reaches the end of its service life. This replacement will be at ENERGEX's cost, however a network charge adjustment may be necessary (due to changes in wattage or lamp type).

When the Public Lighting is installed on a structure not owned by ENERGEX (e.g., traffic signal poles, bridges, building walls etc.), maintenance shall only be carried out on standard Public Lighting equipment of ENERGEX. All maintenance of the structure and associated internal conduits (bridges, buildings etc.) shall be the direct responsibility of the Public Body, or alternatively the Public Body shall arrange maintenance with the structure owner.

ENERGEX or its Approved Contractor will clear vegetation sufficient to ensure safe and reliable operation of ENERGEX's assets only (e.g. around overhead service lines to light poles) and will not be responsible for clearing vegetation necessary to ensure initial and ongoing effectiveness of the roadway lighting in accordance with the lighting design.

Attention of relevant parties is also drawn to Schedule 2 of the Electrical Safety Regulation 2002 which sets out limits of approach to electrical apparatus.

For details of maintenance refer to Section 14.

10.6 Wiring Details

Wiring details for supply to Non Contributed (Rate 1) Public Lighting installations shall be in accordance with Appendix 5, Section 1.5.

10.7 New Installation Costs and Calculated Extended Service Charge

ENERGEX provides the capital required to install Non Contributed (Rate 1) Public Lighting that is within the allowable servicing distance of existing low voltage (415/240 Volt) overhead or underground reticulation.

The capital provided by ENERGEX shall provide for the cost of the supply and installation of the luminaire(s), control equipment, supporting structure (as a street light only pole if necessary) plus an extension of low voltage mains or service cable to supply the street light(s) for a distance of up to the allowable servicing distance as follows.

The allowable servicing distances, based on common luminaire spacings and current reticulation and servicing standards, are as shown in the following table:-

Description of Public Lighting Installation	Allowable Servicing Distance
Minor Roads with underground reticulation – (Luminaire on new steel pole)	10 metres
Major and Minor Roads with overhead reticulation – (Luminaire on new public lighting only wood pole or existing HV only wood pole)	75 metres
Major Roads with underground reticulation – (Luminaire on new steel pole)	45 metres
Major Roads with overhead reticulation – (Luminaire(s) on new steel pole)	50 metres

Additional street lighting will be installed in an area to either underground or overhead reticulation standards depending on the existing standard for the area , such as having been declared an underground reticulation area by the Public Body, or to meet the development requirements of the relevant Public Body.

Where a Public Lighting installation requires expenditure for extension of reticulation/servicing in addition to the allowable servicing distances from existing low voltage reticulation, a calculated extended service charge to cover the additional capital cost of extending the reticulation shall be made by the Public Body.

10.8 Alterations to Existing Public Lighting Installations

A Public Body may submit a formal request to ENERGEX to alter an existing Non-Contributed (Rate 1) Public Lighting installation.

A Public Lighting alteration is defined as the removal, replacement, relocation or under-grounding of an existing Public Lighting installation. All alteration work shall be carried out by ENERGEX.

Where a request is made, the following conditions shall apply:

10.8.1 Installation Removal of Public Lighting Assets (Poles less than 10 yrs old)

All Non-Contributed (Rate 1) Public Lighting equipment removed shall remain the property of ENERGEX.

The Public Body shall bear all costs associated with the following:-

(a) Removal of Non-Contributed (Rate 1) Public Lighting equipment. The actual costs will be charged.

(b) Loss of Asset Value.

The Public Body shall be charged the depreciated value of the asset, assessed as the depreciated current cost of the asset being replaced, based on the age of the installation, less the value of any re-usable equipment, and less the scrap value of materials not suitable for re-use.

10.8.2 Installation Replacement of Public Lighting Assets (Poles less than 10 yrs old)

All Non-Contributed (Rate 1) Public Lighting equipment removed shall remain the property of ENERGEX.

The Public Body shall bear all costs associated with the following:-

(a) Removal of Non-Contributed (Rate 1) Public Lighting equipment. The actual costs will be charged.

(b) Loss of Asset Value.

The Public Body shall be charged the depreciated value of the asset, assessed as the depreciated current cost of the asset being replaced, based on the age of the installation, less the value of any re-usable equipment, and less the scrap value of materials not suitable for re-use.

The capital for new standard equipment will be provided by ENERGEX in accordance with the relevant requirements of Section 10.8 (Non Contributed (Rate 1)).

10.8.3 Installation Relocation (Repositioning of Existing Poles)

If a Non-Contributed (Rate 1) Public Lighting installation is relocated, the Public Body shall bear all relocation costs.

10.8.4 Undergrounding of an Existing Overhead Lighting Installation

Where the Public Body requests an existing overhead Lighting Installation to be under-grounded the Public Body shall bear all costs associated with the removal and replacement of the lighting installation in accordance with the requirements of Sections 10.8.1 and 10.8.2.

Any charges for the cost of non-lighting mains work will be in accordance with ENERGEX's policy in respect of such mains alterations.

11 SPECIFIC REQUIREMENTS – CONTRIBUTED (RATE 2) LIGHTING

11.1 General

Contributed (Rate 2) Public Lighting may only be installed on roads and other public thoroughfares (refer Definition 5.3) at the written request of the Public Body.

Under this rate all supply and installation costs are funded by the Public Body or Developer and ownership of the Public Lighting installation is then vested in ENERGEX. ENERGEX then assumes responsibility for maintenance of the installation.

Typical installations are detailed in Appendix 1, Section 1.1.

11.2 Design

The design of Public Lighting may be divided into two distinct categories - Lighting Layout Design and Electrical Reticulation Design.

Lighting Layout and Electrical Reticulation Designs may be carried out by ENERGEX or other parties under the conditions specified in Sections 11.2.1, 11.2.2, 11.2.3, 11.2.4 and 11.2.5.

Where designs are carried out by parties other than ENERGEX the provisions of Section 11.2.3 are mandatory.

Where a Public Body or Developer has had a design approved according to the requirements of this Standard, and ENERGEX subsequently alters its standard equipment and/or installation specification (e.g. Construction Manual) the design shall be considered acceptable provided it is commissioned within two years of the original approval date.

This provision will not apply to specification alterations made for safety reasons.

ENERGEX <u>will charge</u> a fee for checking the Street Light Schedule(s), Lighting Layout & Electrical Reticulation Designs to ensure compliance with ENERGEX's construction requirements.

The lighting design <u>will not</u> be checked for compliance with the Public Lighting Code. This is the responsibility of the Public Body.

If the Lighting Layout and Electrical Reticulation Design information is not provided in an acceptable form or does not satisfy ENERGEX's requirements, then ENERGEX <u>will not</u> accept the Public Lighting installation as suitable for construction until the documentation is provided in an acceptable form or alternatively will charge a fee to redraft the design proposal and correct any design deficiencies.

11.2.1 Lighting Design

Lighting designs should conform to the Public Lighting Code as a minimum standard. The lighting design may be carried out by either, ENERGEX, or the Public Body, or the Developer, in accordance with SWP 47.1 "The Design of Estates" and SWP 47.3 "Design of Contributed (Rate 2) Public Lighting Installations." under the following conditions: -

(a) ENERGEX Designs

All lighting designs carried out by ENERGEX shall be in accordance with the Public Lighting Code as a minimum standard or in accordance with the specific written requirements (design brief) of the Public Body.

(b) Public Body Designs

Lighting designs may be carried out by a Public Body or their appointed Consultant.

(c) Developer Designs

Lighting designs may be carried out by an Approved Consultant appointed by a Developer provided the design is in accordance with the requirements of the Public Body.

These designs must be approved (in writing) by the Public Body and in addition, the Public Body must enter into a Public Lighting Supply Agreement with ENERGEX and nominate the chosen Retail Entity.

11.2.2 Electrical Reticulation Design

The Electrical Reticulation Designs shall comply with the requirements of the Electricity Act and the Electricity Regulation and may be carried out by either:

(a) ENERGEX, or

(b) An approved Consultant, authorised by ENERGEX, with a nominated qualified Registered Professional Engineer Queensland (RPEQ) and other Design Para-professional Staff having demonstrated competencies as required and specified in SWP 47.3 “Design of Contributed (Rate 2) Public Lighting Installation”.

All designs carried out by a Registered Professional Engineer Queensland shall comply with ENERGEX’s Public Lighting, and distribution system design and construction requirements and the requirements of SWP 47.1 “The Design of Estates” and SWP 47.3 “Design of Contributed (Rate 2) Public Lighting Installation”.

11.2.3 Design Documentation

Where a Lighting Layout and/or Electrical Reticulation Design is carried out by an Approved Consultant other than ENERGEX the following documentation shall be provided to ENERGEX.

(a) Design drawing - detailing the location and type of equipment to be installed as detailed in Appendix 6

(b) Equipment schedule as detailed in Appendix 6.

(c) Equipment specification as detailed in Appendix 5, Sections 1.1 to 1.3.

(d) Voltage drop calculations - according to ENERGEX’s requirements as detailed in Appendix 6

(e) Fault loop impedance calculations as detailed in Appendix 6.

(f) Statement of compliance of the Lighting Design with either, the Public Body’s Lighting Design Brief, or, the relevant part of AS/NZS 1158.

11.2.4 Design Acceptance

All Electrical Reticulation Designs carried out by an approved party other than ENERGEX will be checked by ENERGEX for compliance with current design and construction standards.

This design check shall be carried out as soon as possible after submission. When ENERGEX is satisfied that the Electrical Reticulation Design complies with .the current design and construction standards, ENERGEX shall then accept the design as suitable for construction.

Also, ENERGEX will check the lighting equipment schedule to ensure compliance with the equipment requirements (Section 11.3).

11.2.5 Design Costs

All costs associated with any design or checking of Lighting Layout and/or Electrical Reticulation Designs carried out by ENERGEX shall be borne by the Public Body or Developer.

11.3 Equipment

Only equipment complying with ENERGEX's standard specification current at the design date where **the design was completed no more than two years prior to construction** shall be used for Contributed (Rate 2) installations.

ENERGEX's acceptable equipment specification numbers for Contributed (Rate 2) Public Lighting are listed in Appendix 5, Section 1.1 to 1.4.

Where the Public Body or Developer constructs the installation they may directly purchase all equipment from ENERGEX or:

From suppliers who are offering equipment that has been approved for compliance with ENERGEX's Technical Specification and standard requirements for such equipment.

The Public Body or Developer must provide **written evidence** of compliance with the above requirement to ENERGEX before commissioning of the installation.

An "Approved Materials Supplier List" has been published by ENERGEX containing stock items, stock codes and Suppliers who have supplied listed stock items that comply with the relevant technical specifications and standards pertaining to the respective area of supply. This list may be accessed on ENERGEX's web site relevant to the area of supply:

www.ENERGEX.com.au/service_providers/technical_docs/asp/technical_documents.asp

Any sale of equipment is at the discretion of ENERGEX

11.4 Installation

The Public Lighting installation may be carried out by either, ENERGEX, or, an Approved Contractor.

The specific "Approved Contractor" requirements are detailed in Appendix 7.

Where the Public Lighting installation is installed by an Approved Contractor, the following conditions shall apply:

(a) Except for installation of the consumers mains connection as approved by ENERGEX, all installation work carried out on ENERGEX's poles shall only be carried out by ENERGEX or an Approved Contractor.

(b) The "Approved Contractor" before the start of work on the Public Lighting installation shall provide ENERGEX with the documentation specified in Appendix 7, Section 1.2. Additionally, the Approved Contractor shall have a copy of the Public Lighting Certificate of Supply for that Public Lighting installation.

(c) All installation work and equipment utilised shall be in accordance with ENERGEX's construction requirements.

(d) During construction and before commissioning of the installation, inspections may be carried out by ENERGEX to ensure that the installation is constructed according to standard construction requirements.

A fee may be levied for these inspections.

(e) A Certificate of Acceptance in accordance with SWP 47.2 "Consultancy Services for the Project Management of Estate Construction and Public Lighting Construction" will not be issued until evidence is received of compliance with the

following requirements for the project management of the construction and commissioning of the Contributed (Rate 2) Public Lighting installation.

1. The Public Lighting installation is tested by the Approved Contractor according to the requirements of SWP 31 so as to ensure that the installation is safe to connect to the Public Lighting System.
2. Where necessary the installation documentation is modified to “As Constructed”.
3. Evidence of compliance with the standard equipment requirement shall be provided in accordance with Appendix 8.

   Appendix 6 lists the relevant information required to be detailed on the drawings.

(f) Under no circumstances shall the Approved Contractor connect the new Contributed (Rate 2) Public Lighting installation to ENERGEX’s point of supply until the requirements of SWP 31 “Commissioning & Operation of the Distribution Network” have been met.

11.5 Responsibility for Maintenance

All ongoing maintenance of the Public Lighting installation shall be carried out by ENERGEX or its Approved Contractor, including replacement of equipment (e.g. poles, luminaires etc.) at the end of their useful life or due to damage.

ENERGEX reserves the right to replace an existing luminaire with an equivalent type such that the integrity of the design will be maintained when the existing luminaire reaches the end of its service life. This replacement will be at ENERGEX’s cost, however a network charge adjustment may be necessary (due to changes in wattage or lamp type).

When the Public Lighting is installed on a structure not owned by ENERGEX (e.g., traffic signal poles, bridges, building walls etc.), maintenance shall only be carried out on standard Public Lighting equipment of ENERGEX. All maintenance of the structure and associated internal conduits (bridges, buildings etc.) shall be the responsibility of the Public Body.

For details of maintenance refer to Section 14.0.

ENERGEX or its Approved Contractor will clear vegetation sufficient to ensure safe and reliable operation of (and access to) ENERGEX’s Public Lighting assets only (e.g. around overhead service lines to street light poles, brackets & luminaires). The Road Controlling Authority shall be responsible for clearing vegetation necessary to ensure initial and ongoing effectiveness of the roadway lighting in accordance with the lighting design. Attention of relevant parties is also drawn to the Electrical Safety Regulation which sets out limits of approach to electrical apparatus.

11.6 Wiring Details

Wiring details for supply to Contributed (Rate 2) Public Lighting installations shall be in accordance with Appendix 5, Section 1.5 as for Non-Contributed (Rate 1) Public Lighting installations.

11.7 New Installation Costs

The total cost of the Public Lighting installation shall be funded by the Public Body or Developer.

11.8 Alterations to Existing Public Lighting Installations

A Public Body may submit a formal request to ENERGEX to alter an existing Contributed (Rate 2) Public Lighting installation.

A Public Lighting alteration is defined as the removal, replacement, relocation or, under-grounding of an existing installation.

Where a request is made, the following conditions shall apply:-

11.8.1 Installation Removal of Public Lighting Assets (Poles less than 10 yrs old)

All Contributed (Rate 2) Public lighting equipment removed shall remain the property of ENERGEX.

The Public Body shall bear all costs associated with the following:-

(a) Removal of Contributed (Rate 2) lighting equipment. The actual cost will be charged less the value of any re-usable equipment, and less the scrap value of materials not suitable for re-use.

11.8.2 Installation Replacement of Public Lighting Assets (Poles less than 10 yrs old)

All Contributed (Rate 2) Public lighting equipment removed shall remain the property of ENERGEX.

The Public Body shall bear all costs associated with the following:-

(a) Removal of Contributed (Rate 2) Public Lighting equipment (pole and luminaire).

The actual costs will be charged less the value of any re-usable equipment, and less the scrap value of materials not suitable for re-use

ENERGEX shall bear all costs associated with the following:-

(b) Installation of new Public Lighting equipment (in place of the existing Contributed (Rate 2) pole and luminaire that may be deteriorated or damaged).

The costs shall be calculated in accordance with the requirements of Section 10.8 (Non- Contributed (Rate 1)) and the installation shall revert to a Non- Contributed (Rate 1) Public Lighting installation with ENERGEX funding the supply and installation of a new standard pole and luminaire.

11.8.3 Installation Relocation (Repositioning of Existing Poles)

If a Contributed (Rate 2) Public Lighting installation is relocated, the relevant Public Body shall bear all costs.

11.8.4 Under- grounding of an Existing Overhead Installation

All Contributed (Rate 2) Public lighting overhead equipment removed shall remain the property of ENERGEX.

Where the Public Body requests that an existing overhead Lighting Installation be under-grounded the Public Body shall bear all costs associated with the removal and replacement of the Public Lighting installation.

Any charges for the cost of non-lighting mains work will be in accordance with ENERGEX's policy in respect of such mains alterations. The installation will remain a Contributed (Rate 2) Public Lighting installation.

11.9 Warranty

Where Contributed (Rate 2) Public Lighting is installed by a Public Body or a Public Body's Contractor, the installation shall be warranted by the Public Body against defects for 12 months from the date of issue of the Certificate of Acceptance.

12 SPECIFIC REQUIREMENTS – UNMETERED (RATE 3) LIGHTING

12.1 General

Unmetered (Rate 3) Public Lighting may be only installed on roads and other public thoroughfares (refer Definition 5.3) at the written request of the Public Body.

Under this rate the complete Public Lighting installation is supplied, installed, owned and maintained by the Public Body.

Typical installations are detailed in Appendix 1, Section 1.1.

The Electrical Supply Corporation shall maintain the distribution network to the point of supply and the Retail Entity shall provide only electrical energy to the installation.

Unmetered (Rate 3) Luminaires or Luminaire equipment will not normally be permitted on ENERGEX's poles.

12.2 Design

The Lighting and Electrical Layout Design of Unmetered (Rate 3) installations is the responsibility of the Public Body or Developer. The lighting layout shall comply with the Public Body's requirements and the Electrical Layout shall fully comply with the requirements of the Wiring Rules.

The electrical layout designer shall obtain from ENERGEX the 'point of supply" (refer Definition 5.19).

At the completion of the electrical layout design and before the start of installation works, a set of fully detailed drawings, voltage drop calculations and loop impedance calculations, shall be submitted to ENERGEX for approval under the Electricity Act.

The design shall include a Project Number and Street Lighting Schedule of ENERGEX as per ENERGEX's Works Plans Standards and provision for the Date Energised to be shown.

ENERGEX's Project Number and Site Numbers will be allocated upon request by the ENERGEX Subdivision and Street Lighting Department.

An Application for Un-metered Supply and a completed Form 2 shall be submitted to ENERGEX prior to energisation by ENERGEX. To enable commercial reconciliation of the Unmetered (Rate 3) Public Lighting load to be connected, a copy of the "Unmetered (Rate 3) Streetlight Approval" is to be submitted with the Form 2 application.

The Unmetered (Rate 3) Streetlight Approval can be obtained in the ENERGEX Area of Supply through the ENERGEX Subdivision and Network Service Centre.

"As-constructed" works plans that are signed and stamped with a space for ENERGEX's Connections Officer to enter the date of energisation are to be left at the main switchboard. Failure to do so will result in the installation not being energised.

12.3 Equipment

The Public Lighting installation may use any type of equipment provided it complies with the requirements of the Electricity Regulation.

12.4 Installation

The complete Public Lighting installation from the point of supply shall be carried out by the Electrical Contractor according to the requirements of the Wiring Rules.

The Electrical Contractor shall ensure that all tests are carried out and notices issued according to the Electricity Regulation.

As constructed drawings detailing the installation shall be kept by the Public Body and these will be made available with reasonable notice to any interested party at any time.

The Public Lighting installation will not be commissioned by ENERGEX until all requirements of the Electricity Regulation are complied with.

Once commissioned, no Electrical alterations shall be made to a Unmetered (Rate 3) Public Lighting installation without approval of ENERGEX after an application for the intended alterations has been submitted.

12.5 Responsibility for Maintenance

All maintenance of the complete installation from the point of supply shall be the responsibility of the Public Body.

All Unmetered (Rate 3) Public Lighting installations shall be marked with a green numeral “3” attached to the road side of the pole or structure approximately 2.7 metres above ground level.

These identification labels and pole numbers are available free of charge from ENERGEX

The Public Body shall be responsible for ensuring that the Unmetered (Rate 3) identification numeral is always clearly visible.

12.6 Wiring Details

Wiring details for supply to Unmetered (Rate 3) Public Lighting installations shall be in accordance with Appendix 9.

12.7 Installation Costs

ENERGEX’s costs associated with the provision of electricity supply directly attributable to the Public Lighting installation shall be borne by the Public Body.

12.8 Switching Arrangements for Luminaire Control

ENERGEX’s distribution network charges for Public Lighting are based upon an annual average of 4,200 night time hours of luminaire operation controlled either by P.E. cells and/or control device.

Unmetered (Rate 3) lighting charge will only be provided for Public Lighting installations that comply with the above requirement.

The Public Body shall ensure that the Unmetered (Rate 3) Public Lighting installation is fitted with PE cell(s) capable of switching the connected electrical load unless a switched supply is provided by ENERGEX.

Where PE cells are fitted, each cell should have a switch “on” level of 30 lux ± 25% (D2 base) and 30 lux ± 25% (NEMA base) and with both cell types a switch “off’ level of 18 lux ± 25%.

13 CHANGE OF LIGHTING CATEGORY

A Public Body may request in writing that an existing Public Lighting installation be changed from one category to another category.

ENERGEX at its discretion may allow the transfer of an existing Public Lighting installation from one lighting category to another under the following conditions:-

13.1 Non-Contributed (Rate 1) to Unmetered (Rate 3)

The Public Body shall pay to ENERGEX the depreciated value of the assets being sold (calculated in accordance with Section 10.9; and in addition, all costs associated with wiring alterations to ensure compliance with the Wiring Rules. The Public Body shall then assume ownership of the installation and the specific provisions of Section 10 of this Standard shall then apply.

13.2 Contributed (Rate 2) to Unmetered (Rate 3)

The Public Body shall pay all costs associated with wiring alterations and testing to ensure compliance with the Wiring Rules. The Public Body shall then assume ownership of the installation and the specific provisions of Section 10 of this Standard shall then apply.

13.3 Unmetered (Rate 3) to Contributed (Rate 2)

A Unmetered (Rate 3) Public Lighting installation owned by a Public Body may be transferred to Contributed (Rate 2) provided:-

(a) The equipment is in sound condition and compatible with ENERGEX's standard Public Lighting equipment or alternatively it is agreed in writing that if any equipment requires replacement, it may be replaced with ENERGEX's equivalent standard equipment such that the integrity of the design is maintained.

(b) The Public Body shall provide to ENERGEX a set of detailed as-constructed drawings, including a schematic wiring diagram in accordance with the requirements of Appendix 6.

(c) The complete installation shall conform or be made to conform to ENERGEX's Contributed (Rate 2) lighting construction standards or alternatively dispensation is granted by the Regulator for non-compliance with the Electricity Regulation.

The Public Body shall bear all costs associated with any replacement of equipment or alteration works, including any documentation costs.

The specific provisions of Section 9 of this Standard shall then apply.

14 LUMINAIRE & POLE MAINTENANCE

14.1 Luminaire Maintenance

Under normal circumstance ENERGEX will maintain the Rate I and Contributed (Rate 2) Public Lighting system in the ENERGEX Area of Supply in accordance with the ”Mains Asset Maintenance Policy” (BMS Document 01609). to ensure that functional performance standards are met and that no defects in the Public Lighting system are left in a hazardous state.

Generally, Public Lighting system maintenance is performed at a site/location as a result of an inspection patrol or reports from the general public, local Authorities and staff members. However, in certain situations (e.g. rural towns, isolated road intersections, high traffic carriage, etc.), it may not be cost effective or efficient to patrol the Public Lighting systems and perform spot maintenance activities. In these cases bulk component replacement (e.g. lamps, PE cells, etc.) programs may be considered.

Groups of lamps that are reported out due to circuit failures will be given a higher priority for repairs than for single lamps.

In conjunction with the lamp replacement program, all optical surfaces (internal and external) of the luminaire shall be cleaned and all gaskets checked for deterioration and replaced where necessary.

14.2 Pole Maintenance - Painting

It is ENERGEX’s standard to supply or specify Non Contributed (Rate 1) or Contributed (Rate 2) lighting poles constructed of either wood, steel or concrete. Steel poles are normally hot dipped galvanised and left unpainted. The only exception to this is Estate Poles that are supplied painted in colours nominated in ENERGEX’s Lighting Construction Manual.

Where a Developer requires painting of a standard Public Lighting pole(s), the following conditions shall apply:-

(a) The Public Body shall approve (in writing) the Developer’s painting proposal including the paint type and colour. No material of advertising or commercial nature is permitted.

(b) The Public Body shall agree (in writing) to carry out all subsequent pole painting maintenance following any damage to the decorative painting as a result of maintenance of equipment.

(c) The Developer shall be responsible for all costs associated with the initial painting of the pole(s).

(d) Painting of pole(s) after erection/commissioning is permitted provided the luminaire is not energised, and there is no damage to pole or luminaire that is assessed by the Distributor as a potential hazard.

(e) There is no limitation on permitted height to be painted prior to erection/commissioning of the pole.

(f) Painting of the luminaire is not allowed except for repainting of the Estate (Nostalgia) style. Note the underside (reflective surface) of the canopy shall not be repainted.

Where a Public Body requires painting of standard Public Lighting pole(s), the following conditions shall apply:

(a) The Public Body shall be responsible for all costs associated with the initial painting of the pole(s).

(b) The Public Body shall agree (in writing) to carry out all subsequent pole painting maintenance following any damage to the decorative painting as a result of maintenance of equipment.

(c) Painting of pole(s) after erection/commissioning is permitted provided the luminaire is not energised, and there is no damage to pole or luminaire that is assessed by the Distributor as a potential hazard.

(d) There is no limitation on permitted height to be painted prior to erection/commissioning of the pole.

(e) Painting of the luminaire is not allowed except for repainting of the Estate (Nostalgia) style. Note the underside (reflective surface) of the canopy shall not be repainted.

In all cases where a pole(s) is painted by the Public Body or Developer and requires subsequent replacement (through vehicle damage etc.) by ENERGEX, the replacement pole(s) shall be only provided in the colour as provided by ENERGEX's pole specification. It shall then be the responsibility of the Public Body to paint the pole to match the surrounding pole(s).

Where in-service pole(s) are to be painted by the Developer or Public Body then no work shall proceed or no pole shall be climbed until ENERGEX has inspected the poles and given (written) approval of the proposed painting program.

Care should be exercised when painting base plate mounted and slip base mounted poles to ensure that the underside of the base plate and the area covered by the washer on the top side of the base plate, are free of paint. This requirement is essential to ensure that the pole earth continuity is maintained.

15 NON-PUBLIC LIGHTING (METERED)

15.1 General

All Private Lighting installed in common land of private developments (e.g. roadways. parks and gardens. walkways, etc.) shall be metered and installed by the owner(s) according to the requirements of the Wiring Rules.

To distinguish between these private lighting installations and normal Public Lighting installations, an adhesive label with the word “METERED” shall be attached to the pole.

These labels shall be provided by ENERGEX free of charge.

The “metered” identification labels shall be installed and maintained in a clearly visible condition by the owner(s) of the lighting installation.

16 NON-PUBLIC LIGHTING (UN-METERED)

16.1 General

Public Bodies and Private Companies may request in writing provision of electricity supply to lighting installations that do not qualify as Public Lighting as defined in Section 5.22 of this standard.

These lighting installations must be installed on the road (refer Definition 5.3).

Private Company installations, must have the written approval of the Public Body allowing the lighting installation to be installed on the road.

Under this category the complete Public Lighting installation is supplied installed, owned and maintained by the Public Body or Private Company.

Typical installations are detailed in Appendix 1, Section 1.2.

16.2 Design

The lighting and electrical layout design of unmetered lighting installations is the responsibility of the Public Body or Private Company, and shall fully comply with the requirements of ENERGEX and the Wiring Rules.

16.3 Equipment

The Public Body or Private Company may use any type of equipment provided it complies with the requirements of the Electricity Act and Regulation.

16.4 Installation

The complete lighting installation from the point of supply shall be carried out by the Electrical Contractor according to the requirements of the Wiring Rules.

The unmetered lighting installation will not be commissioned by ENERGEX until the requirements of the Electricity Regulation are compiled with and a full set of drawings are provided, detailing the extent of the electrical installation.

Once commissioned, no alteration shall be made to an unmetered lighting installation without the written permission of ENERGEX.

16.5 Maintenance

The maintenance of the unmetered lighting shall be the responsibility of the Public Body or private company except for the service cable. The service cable will be maintained by ENERGEX.

16.6 Wiring Details

Wiring details for supply to unmetered lighting installations shall be in accordance with Appendix 9.

16.7 Installation Costs

The Public Body or Private Company may be required to contribute to ENERGEX's costs to provide a supply connection, such as for work in excess of a normal service, in accordance with non-standard (addition & alteration) services under the Excluded Distribution Services Price Schedule.

16.8 Switching Arrangements for Luminaire Control

Supply will be made available on a continuous or controlled basis. The energy charge will be adjusted accordingly by the Retail Entity.

Where a PE cell is fitted to the installation, its performance shall comply with Section 12.8 of this standard.

16.9 Un-Metered Supply Charge to Non-Public Lighting

The charge that is applied to a calculated energy usage for an unmetered lighting installation, based on continuous operation or controlled luminaire operation from dusk to dawn, shall be as negotiated between the Public Body/Private Company and the relevant Retail Entity subject to any conditions imposed by the Regulator.

APPENDIX 1

1.1 Categories of Network Charges for Public Lighting

Non Contributed (Rate 1), Contributed (Rate 2) and Unmetered (Rate 3) – UN-METERED PUBLIC LIGHTING INSTALLATIONS

DEFINED - AREA	AVAILABLE TO	NON CONTRIBUTED (RATE 1) AND CONTRIBUTED (RATE 2) CONDITIONS	UNMETERED (RATE 3) CONDITIONS
a) Road • Road • Street • Court • Square • Alley • Boulevard • Highway • Lane b) Other Public Thoroughfare's • Footpath • Right of Way • Public Passage • Wharf • Jetty • Bridge • Park • Reserve • Beach • Pedestrian Tunnels	Public Bodies Only	• Lighting on the road and other public thoroughfares. • Standard DNSP Equipment • Good access for maintenance. • Reasonable security from malicious damage • Not exposed to extreme conditions where excessive degradation would occur from wind forces, vibration or a corrosive environment. • Acceptable to ENERGEX.	• Lighting on the road and other public thoroughfares. • Any equipment that complies with the Electricity Regulations.

1.2 Availability of Un-metered Supply charges to other than Street Lighting

1.1.1 Public Amenity Lighting (An Un-metered Supply Charges)

DEFINED TYPE	DEFINED AREA	CHARGE
• Public Toilet Blocks • Street Identity Signs • Public Directories • Bus Shelters • Freeway Directional Signs • Private Railway Signs (e.g. cane trains) etc.	• Located in the road or Public space	• Available to any Public Body or any Private Company that has the rights to install lighting in the road or public space to light an amenity • For un-metered supply charge refer to the Responsible Retail Entity, Origin Energy

1.1.2 Private Lighting (A metered Charge)

DEFINED TYPE	DEFINED AREA	CHARGE
• Private Roads • Driveways • Walkways • Private Gardens	• All Private Property	• Metered charge (All conditions applicable not covered by this standard – refer to the chosen Retail Entity)

1.1.3 Watchman Lighting (An Un-metered Supply Charge)

DEFINED TYPE	DEFINED AREA	CHARGE
• Commercial Premises • Industrial Sites • Rural Properties	• All Private property accessible from the Public Road	• Initial Installation Charge plus Monthly Operating Charge, or as agreed with the Responsible Retail Entity, Origin Energy.

APPENDIX 2

1.1. Public Lighting Design Brief – Non-Contributed (Rate 1) & Contributed (Rate 2)

Where the Public Body requires the lighting design to be carried out by ENERGEX, the following information (where applicable) shall be provided by the Public Body to ENERGEX:-

Project Description

- Job Title (Road Lighting, Pedestrian Crossing, Park Lighting etc.)
- Location (Road Name, Park Name, Lane name etc.)

Summary of Public Lighting Design

- Reason For Design
- Aim of Design
- Design problems
- Special requirements

Provision of Drawings (in electronic format AutoCAD / Microstation)

- Road Layout (lanes, shoulders, median etc.)
- Traffic signals
- Road alignment (curves, levels etc.)
- Road features (cut, fill, trees, drainage etc.)
- ENERGEX's poles
- Underground services (Telstra, Council etc.)
- Contour levels

Lighting Category (to AS/NZS 1158 series)

- Major Road Category V1 –V5
- Minor Road Category P1 – P5
- Public Areas P6 – P12
- Pedestrian Crossing

Lighting Category

- Non Contributed (Rate 1)
- Contributed (Rate 2)

Pole Alignment

- From kerbs
- Roadway Edge
- Building Line

Specific Lighting Criteria

- Within 6 km of airport
- Bridges, flyover's
- Glare prone areas

Pole Type

- Timber
- Concrete
- Galvanised Steel
- Estate Poles

Preferred Luminaire Mounting Height

ENERGEX		
Pole Ht / Desc	**O/R Arm Uplift**	**Luminaire Mtg Ht**
4.5 m Estate	0.6 m	5.1 m
4.5 m Minor#	2.0 m	6.5 m
5.0 m Hinged	Integral	5.0 m
5.5 m Minor	2.0 m	7.5 m
6.5 m	Integral	6.5 m
7.0 m	2.0 m	9.0 m
8.5 m	2.0 m	10.5 m
10.0 m	2.0 m	12.0 m
10.0 m Hinged	2.0 m	12.0 m
13.0 m	2.0 m	15.0 m
13.0 m Hinged	2.0 m	15.0 m

- Limited Quantity Maintenance Spares
N/A – Not Applicable

Supply Cable

- Overhead
- Underground

Slip Base Poles (frangible)

- Locations (specific)
- Locality (area)

Preferred Luminaire Type

- Normal Road Lighting
- Aeroscreen
- Post Top
- Nostalgia

Future Plans

- Roadway alterations
- Intersectional alterations
- Abutting developments
- Future Upgrading of lighting

APPENDIX 3

1.1. Non-Contributed (Rate 1), Contributed (Rate 2) & Unmetered (Rate 3) Public Lighting Network Charges – Applicable to ENERGEX Supply Area

Refer to the relevant Responsible Retail Entity to obtain the contestable retail tariffs that apply to the three Public Lighting categories and that contain the components of the charges for the asset related, operating and maintenance, and use of the transmission and distribution networks.

The current charges for the components of the retail tariffs that represent the asset related, operating and maintenance, and Network Use of System (NUoS) charges are available in ENERGEX's Tariff Schedule.

The hyperlink providing access to ENERGEX's internet site, where ENERGEX's Tariff Schedule is located, is included under Item 8 of this document.

1.2. Un-metered Lighting – Energy Calculations

1.2.1 Un-metered Lighting – Energy Calculations

(1) If supply is taken from ENERGEX's Switched Public Lighting System, the operating hours shall be 4,200 per annum approximately.

(2) If supply is taken from the LV distribution system or the continuous (24 hrs) Public Lighting system, the operating hours shall be 8,760 per annum.

(3) Energy charges for lamp burning hours between dusk and dawn for a particular billing period of the year shall be based on the times determined by the Australian Bureau of Meteorology for sunset and sunrise on the days falling within the billing period.

(4) The operating cost shall be as agreed between the Public Body and the Retail Entity and shall include the costs of energy and network charges.

(5) All lamps with exception of incandescent are considered to have control equipment losses included in the total power consumptions as shown in the following table.

QUEENSLAND LOAD TABLE OF TOTAL POWER CONSUMPTION IN LAMP & CONTROL GEAR

The Queensland Load Table is available on the Australian Energy Market Operator (AEMO) web site in Appendix D of the document entitled:

"National Electricity Market Load Tables for Unmetered Connection Points"

The following hyperlink will provide access to the document.

http://www.aemo.com.au/electricityops/0640-0010.pdf

Appendix D of the document is set out in tabular format as follows:

Lamp Type	Code	Nominal Lamp Rating (W)	Power Consumption (W)

The right hand column in the AEMO document includes load data for lamps and control gear used in ENERGEX's Areas of Supply.

APPENDIX 4

1.1. Glare Control – Costs

The following costs shall apply where a Public Body requests that glare control be fitted to a luminaire:-

Shading of Luminaires and/or Installation of Aeroscreen Luminaires (JOINT ENERGEX & ERGON ENERGY PUBLIC LIGHTING STANDARD)	**Charges for current financial year.**
Existing Installations (i) Supply and fit standard internal baffle to Sylvania B2223/MTH and B2224 luminaires. (ii) Replacement Diffuser for Sylvania "Urban"/"Maxi" luminaires (iii) Replacement Diffuser for Sylvania "Roadster" luminaires (iv) Replace existing luminaire with an aeroscreen unit - Major Road - Minor Road (v) Supply and fit a unique shield to a standard aeroscreen unit New Installations At the design stage consideration should be given to any special requirements for glare control that may benefit from the use of aeroscreen luminaires. The charges are based upon the difference between the capital cost of Aeroscreen and Normal (semi-cut-off) luminaires. Also, It should be noted that for AS1158 designs the use of Aeroscreen luminaires will normally require an increase in the number of luminaires over Normal (semi-cut-off) based designs thereby increasing the installations overall capital cost and ongoing operating costs. (i) Include Aeroscreen luminaire in lieu of standard luminaire at the design stage at the request of Public Body (except where it is a design requirement of ENERGEX) - For Major Roads - For Minor Roads	Refer to Fee-based Services Prices as contained in ENERGEX's Tariff Schedule

APPENDIX 5

1.1. Standard Public Lighting – Luminaires, Major, Minor & Decorative for Non-Contributed (Rate 1) & Contributed (Rate 2) Public Lighting

MAJOR ROAD LIGHTING		
LAMP TYPE	**LUMINAIRE CLASS**	**JOINT ENERGEX & ERGON ENERGY TECHNCAL SPECIFICATION**
S100C	Standard Road Lighting	EGX TS 459D EE ETS 05-01-01 (V2) Luminaires with Integral Control Gear for Lighting of Roads and Public Spaces
S150C		
S250C		
S400C		
H150C	Special Precinct Lighting	
H250C		
S100C		
S150C	Aeroscreen Road Lighting	
S250C		
S400C		
HIGH MAST (ENERGEX ONLY)		
LAMP TYPE	**LUMINAIRE CLASS**	**SPECIFICATION**
S150C	High Mast Road Lighting	EGX TS 459D EE ETS 05-01-01 (V2) Luminaires with Integral Control Gear for Lighting of Roads and Public Spaces
S250C		
S400C		

LUMINAIRE CONTROL - PHOTO - ELECTRIC CELL		
Major Road Application	For all Major Road Luminaires	EGX TS 308D EE ETS 05-05-01 (V3) Photo-electric Control Switches for Road Lighting Luminaires

DISCHARGE LAMPS		
Major Road Applications	For all Major Road Luminaires	EGX TS 317D EE ETS 05-03-01 (V3) Discharge Lamps and Fluorescent Starters for Road Lighting

S (Prefix) = High Pressure Sodium Vapour
M (Prefix) = Mercury Vapour
H (Prefix) = Metal Halide
C (Suffix) = Clear Tubular
D (Suffix) = Diffuse

MINOR ROAD LIGHTING			
LAMP TYPE	**LUMINAIRE CLASS**	**JOINT ENERGEX & ERGON ENERGY TECHNICAL SPECIFICATION**	
M50D M80D S70D M50D	Standard Road Lighting	EGX TS 459D EE ETS 05-01-01 (V2) Luminaires with Integral Control Gear for Lighting of Roads and Public Spaces	
M80D S70D	Aeroscreen Road Lighting		
DECORATIVE LIGHTING			**COLOUR**
M50D M80D S70D	Nostalgia	EGX TS 459D EE ETS 05-01-01 (V2) Luminaires with Integral Control Gear for Lighting of Roads and Public Spaces	Green, Black, or Blue/Grey. (Navy EGX only)
M50D M80D S70D	Post Top (Available for replacement only)		Maintenance Stock Only
M50D	Opal Sphere (not available – obsolete)		Not Available - Obsolete
LUMINAIRE CONTROL – PHOTO - ELECTRICAL			
Minor Road Application	For all Minor Road Luminaires	EGX TS 308D EE ETS 05-05-01 (V3) Photo-electric Control Switches for Road Lighting Luminaires	
DISHCRAGE LAMPS & FLOURESCENT STARTERS			
Minor Road Applications	For al Minor Road Luminaires	EGX TS 317D EE ETS 05-03-01 (V3) Discharge Lamps and Fluorescent Starters for Road Lighting	

S (Prefix) = High Pressure Sodium Vapour
M (Prefix) = Mercury Vapour
D (Suffix) = Diffuse

1.2. Standard Public Lighting – Poles & Outreach Arms - Non-Contributed (Rate 1) & Contributed (Rate 2) Minor Road Lighting

POLE DESCRIPTION	FOUNDATION TYPE	POLE TYPE	COLOUR	REFERENCE NUMBERS	OUTREACH ARM COMBINATIONS	LUMINAIRE
4.5 metre steel (3 bolt base plate)	BPM	Minor Road BPM	Galvanised	26	• 1.5 m Single & Double Outreach Arms • Post Top Adaptor	• Standard Minor Road Lighting Luminaires M50, and M80 and S70 • Standard Road Lighting Aeroscreen Luminaires M50, and M80 and S70 • Standard Post Top may be fitted to poles fitted with 50 x 300 mm spigot by using an adaptor
5.5 metre steel (3 bolt base plate) (4 bolt base plate)				27		
				28		
6.5 metre steel (3 bolt base plate) (4 bolt base plate)				25	• Integral 0.5m Bracket	
				26		
3.5 metre steel (4 bolt base plate)		Estate	Green	30	• Single or Twin	• Standard Post Top and Decorative Luminaires M50, M80 and S70
3.5 metre steel (4 bolt base plate)			Black	35		
4.5 metre steel (4 bolt base plate)			Green	32		
4.5 metre steel (4 bolt base plate)			Blue/Grey	33		
4.5 metre steel (4 bolt base plate)			Navy	35		
4.5 metre steel (4 bolt base plate)			Black	34		

Notes:

1. Reference Numbers refer to Technical Specification EGX TS 300D, EE ETS 05-02-01 (V4)
2. BPM – Base Plate Mounted
3. Galvanised – Bare unpainted finish after hot dip galvanising.
4. Three Bolt BPM & 3.5m Estate Poles are limited quantity maintenance spares
5. For cast in situ pole foundation steelwork refer to Technical Specification EGX TS 480D EE ETS 05-02-02 (V1)
6. For precast pole foundations refer to Technical Specification EGX TS 421D EE ETS 05-02-03 (V1)
7. For installation requirements of pole foundations refer to the Public Lighting Construction Manual.

1.2 Standard Public Lighting – Poles & Outreach Arms - Non-Contributed (Rate 1) & Contributed (Rate 2) Minor Road Lighting (Cont)

POLE DESCRIPTION	FOUNDATION TYPE	POLE TYPE	COLOUR	REFERENCE NUMBERS	OUTREACH ARM COMBINATIONS	LUMINAIRE
5.0 metre steel	BPM	Minor Road Mid-hinged (Right) w/- Hinged Base Plate	Galvanised	36	• Integral Spot	• M50. M80 and S70 (Normal & Aeroscreen)
5.0 metre steel	BPM	Minor Road Mid-hinged (Left)[4] w/- Hinged Base Plate		37		
5.0 metre steel	BPM	Minor Road Mid-hinged (Right) w/- Hinged Base Plate	Green	38		
5.0 metre steel	BPM	Minor Road Mid0hinged (Right) w/- Hinged Base Plate	Black	39		
5.0 metre steel	BPM	Minor Road Mid-hinged (Right) w/- Hinged Base Plate	Blue/Grey	40		

Notes:

1. Reference Numbers refer to Technical Specification EGX TS 300D, EE ETS 05-02-01 (V4)
2. BPM – Base Plate Mounted
3. Galvanised – Bare unpainted finish after hot dip galvanising.
4. Right Hinge Poles are standard and hinge in the direction of the traffic flow. Left hinging pole is a special non stock item.
5. For cast in situ pole foundation steelwork refer to Technical Specification EGX TS 480D EE ETS 05-02-02 (V1)
6. For precast pole foundations refer to Technical Specification EGX TS 421D EE ETS 05-02-03 (V1)
7. For installation requirements of pole foundations refer to the Public Lighting Construction Manual.

1.2 Standard Public Lighting – Poles & Outreach Arms - Non-Contributed (Rate 1) & Contributed (Rate 2) Minor Road Lighting (Cont)

OUTREACH ARM DESCRIPTION	COLOUR	REFERENCE NUMBER	POLE COMBINATIONS
0.5 metre Single Steel Outreach 0 deg Upcast	Galvanised	41	• Minor Road BPM 5.5 metre poles
1.5 metre Single Steel Outreach	Galvanised	42	
1.5 metre Double Steel Outreach	Galvanised	43	
Post Top Adaptor 300 mm x 50 mm x 75 mm dia (Maintenance Purposes Only)	Galvanised	63	
Post Top Adaptor 300 mm x 50 mm x 75 mm dia (Maintenance Purposes Only)	Black	64	
Post Top Adaptor 300 mm x 50 mm x 75 mm dia (Maintenance Purposes Only)	Green	TBA	
0.5 metre Single Steel Outreach	Black	54	• Minor Road 4.5 metre Estate Poles
0.5 metre Single Steel Outreach	Green	55	
0.5 metre Single Steel Outreach	Blue/Grey	56	
0.5 metre Single Steel Outreach	Navy	59	
0.5 metre Double Steel Outreach	Black	57	
0.5 metre Double Steel Outreach	Green	61	
0.5 metre Double Steel Outreach	Blue/Grey	58	
0.5 metre Double Steel Outreach	Navy	60	
0.3 metre Single Steel Outreach Bracket (PT)	Galvanised	46	• Minor Road Wood Poles
0.5 metre Single Steel Outreach Bracket (MI3)	Galvanised	51	
1.2 metre Single Steel Outreach Bracket (MI1)	Galvanised	52	
3.0 metre Single Steel Outreach Bracket (MI2)	Galvanised	53	

Notes:

1. Reference Numbers refer to Technical Specification EGX TS 300D, EE ETS 05-02-01 (V4)
2. BPM – Base Plate Mounted
3. Galvanised – Bare unpainted finish after hot dip galvanising.

1.3. Standard Public Lighting – Poles & Outreach Arms – Non-Contributed (Rate 1) & Contributed (Rate 2) Major Road Lighting

POLE DESCRIPTION	FOUNDATION TYPE	POLE TYPE	COLOUR	REFERENCE NUMBERS	OUTREACH ARM COMBINATIONS	LUMINAIRE
7.0 metre steel	BPM	Rigid Major Road	Galvanised	1	• 1.5 metre single and double • 3.0 metre single and double • 1.5 metre extension arm	• Standard road lighting Luminaires for Normal, & Aeroscreen applications S100, S150 S250, S400, H150, H250, H400,
8.5 metre steel	BPM			2		
10.0 metre steel	BPM			3		
13.0 metre steel	BPM			4		
7.0 metre steel	BPM	Slip Base Major Road		5		
8.5 metre steel	BPM			6		
10.0 metre steel	BPM			7		
13.0 metre steel	BPM			8		
10.0 metre steel	BPM	Mid-hinged Major Road		9		
13.0 metre steel	BPM			10		
SBM Assy for M24 bolts 350 mm PCD	SBM	Slip Base Major Road		66	N/A	N/A
SBM Assy for M24 bolts 500 mm PCD	SBM	Slip Base Major Road		67	N/A	N/A
Headframe 2-way	BPM	Rigid and Mid Hinged Major Road		11		• Typically with High Mast Luminaires, (but can also use Normal and Aeroscreen Luminaires)
Headframe 3-way				12		
Headframe 4-way				13		

Notes:

1. Reference Numbers refer to Technical Specification EGX TS 300D, EE ETS 05-02-01 (V4)
2. BPM – Base Plate Mounted
3. SBM – Slip Base Mounted
4. Galvanised – Bare unpainted finish after hot dip galvanising.
5. For cast in situ pole foundation steelwork refer to Technical Specification EGX TS 480D EE ETS 05-02-02 (V1)
6. For precast pole foundations refer to Technical Specification EGX TS 421D EE ETS 05-02-03 (V1)
7. For installation requirements of pole foundations refer to the Public Lighting Construction Manual.

1.3 Standard Public Lighting – Poles & Outreach Arms - Non-Contributed (Rate 1) & Contributed (Rate 2) Major Road Lighting (Cont)

OUTREACH ARM DESCRIPTION	COLOUR	REFERENCE NUMBER	POLE COMBINATIONS
1.5 metre Single Steel Outreach	Galvanised	14	• Major Road 7.0, 8.5, 10.0 and 13.0 metre BPM and SBM galvanised steel poles
1.5 metre Double Steel Outreach		15	
3.0 metre Single Steel Outreach		16	
3.0 metre Double Steel Outreach		17	
1.5 metre Steel Extension		18	
1.5 metre Steel Outreach Bracket MA1		47	• Major Road Wood Poles
1.5m Outreach Bracket MA5 2.0 metre Uplift		68	
3.0m Outreach Bracket MA6 2.0 metre Uplift		69	
1.5m Bracket Extension MA7 2.0 metre Uplift		70	
3.0 metre Steel Outreach Bracket (MA2)		48	
4.5 metre x 2.5 metre Outreach Bracket (MA3)		49	
Steel Stay Type A for MA3 Bracket		44	
Steel Stay Type C for MA3 Bracket		45	
3.0 metre x 4.0 metre Steel Outreach Bracket (MA4)		50	
Steel Adaptor Converter Major Road to Minor Road		62	As above

Notes:

1. Reference Numbers refer to Technical Specification EGX TS 300D, EE ETS 05-02-01 (V4)
2. BPM – Base Plate Mounted
3. Galvanised – Bare unpainted finish after hot dip galvanising.

1.4. Standard Contributed (Rate 2) Public Lighting – Miscellaneous Equipment & Construction Techniques

This information has been provided to assist Approved Contractors to source equipment that will comply with ENERGEX's construction requirements.

All equipment used in the installation of Contributed (Rate 2) Public Lighting equipment and not detailed in Appendices 5.1, 5.2 or 5.3 shall be <u>supplied and installed</u> by Approved Contractors in accordance with the current version of ENERGEX's Public Lighting Construction Manual and the relevant parts of ENERGEX's Underground Distribution and Overhead Construction Manuals.

Equipment covered shall include the following:-

- Conduit
- Cabling
- Line Clamps
- Termination Panels
- Pillars
- Pits
- Pole Foundations
- Distribution boards
- Circuit Breakers / Fuse Switches
- Openable Junction Box

This Public Lighting Standard and ENERGEX's Construction Manuals specify the approved standard equipment to be used in the construction of Contributed (Rate 2) Public Lighting installations.

1.5. Wiring Details – Non-Contributed (Rate 1) & Contributed (Rate 2) Public Lighting Installations

1.5.1 General

Non Contributed (Rate 1) and Contributed (Rate 2) Public Lighting is normally supplied from ENERGEX's low voltage underground or overhead distribution system via a protection device.

The location of the protection device is at ENERGEX's discretion and is the point of supply. All installation works beyond this point constitute the Non Contributed (Rate 1) or Contributed (Rate 2) Public Lighting installation.

1.5.2 Wiring Details

Non Contributed (Rate 1) or Contributed (Rate 2) Public Lighting may be supplied by any of the following methods:-

(1) Overhead cabling

(2) Underground cabling – supply looped via poles

(3) Underground cabling – supply looped via poles or teed off at pits or pillars.

1.5.3 Circuit Protection

At the point of supply ENERGEX shall provide a protective device (fuse/circuit breaker). This protective device shall be normally mounted on ENERGEX's supply pole or in the case of an underground point of supply in the pillar of pad mounted transformer LV cubicle.

Where Contributed (Rate 2) Public Lighting is installed by an "Approved Contractor", this Contractor shall provide the protective device at the point of supply.

In addition to circuit protection at the point of supply, luminaire protection shall be provided at each pole. This protection device may be either mounted inside the pole or in the adjacent connection pit or pillar.

1.5.4 Cabling

All cables (overhead or underground) shall be installed in accordance with ENERGEX's Public Lighting Construction Manual.

1.5.5 Earthing

1.5.5.1 General

All steel, aluminium and concrete poles shall be earthed.

In areas where the multiple earthed neutral system (MEN) is employed, lighting poles will be "earthed" by direct connection to the supply neutral by means of a connection having a cross sectional area of not less than 4 mm² (copper).

At each pole a MEN point shall be created by bonding the neutral conductor to the pole.

1.5.5.2 Buried in Ground Poles

Provided a steel, aluminium or concrete pole is buried directly in the ground and is not coated with any insulating compound (paint, epoxy etc.), then the pole is considered adequately earthed, and it is not necessary to install a separate earth stake.

In the ENERGEX Area of Supply, although BIG Galvanised Steel Poles have been made obsolete (and are being replaced with base plate mounted poles on concrete foundations), a limited number of these poles may be approved for use where it is established that the required site location is so severely restricted that a concrete foundation is impracticable. Obsolete BIG Galvanised Steel Poles manufactured to the ENERGEX pole specification (TS 05-02-01) are fitted with a ground line protective sleeve, when buried directly in the ground are considered to provide an adequate earth.

1.5.5.3 Earthing of Bridge Lighting

Where the pole foundation cannot provide an "effective earth" (e.g. bridges), then a separate earth conductor must be installed clear of the structure to ensure adequate earthing.

Where Non Contributed (Rate 1) or Contributed (Rate 2) Public Lighting is installed on a pedestrian and/or vehicular bridge, a separate earthing system will be required.

This earth conductor will be installed with the supply cabling and shall have a cross sectional area according to the requirements of the Wiring Rules. The conductor shall have a cross sectional area of not less than 4 mm² (copper).

The earthing cable shall be connected to an "effective earth point" at the first appropriate pillar or pole clear of the bridge structure. At each pole on the bridge, the earth cable shall be bonded to the pole and the neutral conductor. The provision of this clause shall also apply to the Public Lighting installed on other structures that do not provide an effective earth.

1.5.6 Reference Drawings

For further information on circuit wiring or earthing refer to ENERGEX's Public Lighting Construction Manual.

APPENDIX 6 – NON-CONTRIBUTED (RATE 1) & CONTRIBUTED (RATE 2) DESIGN DOCUMENTATION

1.1. General

In accordance with ENERGEX Public Lighting Standard, designs may be carried out by parties other than ENERGEX as follows:-

Non Contributed (Rate 1) – Lighting Designs by Public Bodies

Contributed (Rate 2) – Lighting Designs by Public Bodies or Developers

- Electrical Layout Designs by a suitably qualified RPEQ as appointed by the Public Body or Developer

Where Non Contributed (Rate 1) and Contributed (Rate 2) Lighting and / or Electrical Layout Designs are carried out by approved parties other than ENERGEX, the design documentation detailed in this Appendix shall be provided to ENERGEX for each Public Lighting project from the nominated point of supply.

Samples of typical Public Lighting and Electrical Layout Documentation may be obtained in the ENERGEX Area of Supply from ENERGEX's Planning and Design Co-ordinator – Public Lighting, or the Subdivision and Street Lighting Department.

1.2. Non-Contributed (Rate 1) Designs

Where a Public Body directly requests ENERGEX to erect new Non Contributed (Rate 1) Public Lighting luminaires located on existing distribution power poles, or existing Non Contributed (Rate 1) Public Lighting poles, then an equipment schedule detailing the type of luminaire, location, mounting height and overhang may be provided instead of the comprehensive documentation detailed in Clause 3.0 of this Appendix.

In these cases ENERGEX shall carry out the electrical layout design (if necessary) and prepare the required construction drawings considering the requirements of the Electricity Act and Regulation. The cost of ENERGEX's work shall be included as part of the new installation costs and any Extended Service Charge required shall be assessed in accordance with Clause 10.7 of this Public Lighting Standard.

In all other design cases the provisions of Clauses 1.3, & 1.4 of the Appendix shall apply.

1.3. Lighting Design Documentation Non-Contributed (Rate 1) and Contributed (Rate 2)

1.3.1 Layout Drawings

Drawings

- Type – Prints & Electronic format (ENERGEX Area: AutoCAD
- Quantity – 2 copies
- Scale up to 1:1000
- Symbols – ENERGEX's standard symbols as per Construction Manuals or Specifications.

Details

- Location – poles, luminaires
- Alteration – to existing Public Lighting reticulation
- Obstructions – trees, bus stops, drains etc.
- Lighting Design Category – (e.g. V5 – AS 1158).
- Dimensions – pole locations referenced to Real Property (RP) boundaries or fixed points
- Construction notes – cut trees, special bracket etc.

1.3.2 Equipment Schedule

Drawings

- Table form
- Scale up to 1:1000
- Quantity – 2 copies

Equipment to be detailed

- Poles
- Outreach Arms/Brackets
- Luminaires

Details

- Mounting Height
- Recover/erection
- Luminaire type
- Luminaire type and rate – as per Construction Manual / Specification
- ENERGEX's Stores Stock Code Numbers

1.4. Electrical Layout Designs (Contributed Rate 2 only)

1.4.1 Layout Drawings

Drawings

- Type – prints
- Quantity – 2 copies
- Scale up to 1:1000
- Symbols – ENERGEX's standard symbols as per Construction Manuals or Specifications.

Details

- Underground cables
- Overhead cables
- Pillars/pits
- Reticulation alterations/additions
- Points of supply
- Cable sizes/types
- Dimensions – cable lengths

1.4.2 Work Schedules

Drawings

- Type – prints
- Symbols – ENERGEX's standard
- Scale up to 1:1000
- Quantity – 2 copies

Schedule Types

- Street Light Schedule
- Equipment Schedule
- Underground Cable Schedule
- Underground Civil Works Schedule
- Overhead Cable Schedule

Details

- Cable size/types/spans
- Pit/pillar
- Service poles location/type
- Reticulation alterations/additions
- Loading on poles (wind/cable)
- Constructional details alterations/additions

1.4.3 Voltage Drop Calculations

Calculations (as required by Clause 6)

- According to the Wiring Rules
- Currents – Lamp starting (minimum 216 Volts) with or without power factor correction depending on the installation (Note that all public road lighting installed in SE Queensland after 2008 should have High Power Factor (HPF) luminaires fitted

Documentation

- Voltage drops shown in schematic form
- "LV Drop" software output (alternative to above)

1.4.4 Fault Loop Impedance Calculations

Calculations (as required by Clause 6)

- For bolted faults at the end of the Public Lighting circuit (that is at the last pole or column)
- For bolted faults at the luminaire

Documentation

- Single phase to earth and three phase to earth (If applicable) fault currents in Amps shown on schematic diagrams for faults at the end of each circuit at the last pole/column.
- Single phase to earth fault current at the luminaire on the last pole /column in each circuit in amps shown on schematic diagrams.
- Loop impedance values in ohms
- Details of circuit protective devices selected to interrupt a bolted fault in 0.4 seconds – Name of Manufacturer, product identification name/number, voltage and current rating are to be provided for correlation of fault clearing time.

1.4.5 Wiring Schematic

Details

- Line Diagram
- Type – prints
- Quantity – 2 copies

Details

- Circuits
- Point of Supply Locations
- Pole Numbers
- Phasing

- Protective Device Rating
- Location of Distribution Fuse Panel – reference to roadway layout

APPENDIX 7 – APPROVED CONTRACTOR

For a Private Company or Public Body to receive ENERGEX's "Approved Contractor", classification the following procedure and standards shall apply.

1.1. Application to ENERGEX in Writing

The Public Body or Private Company shall apply to ENERGEX to be rated as an "Approved Contractor". The application for the Pre-qualification of ENERGEX's Service Providers is available on ENERGEX's internet sites, www.energex.com.au under "service providers".

1.2. Information Kit

ENERGEX shall then forward the applicant an information kit containing all relevant approval requirements. The rating system is based upon ENERGEX's Quality Assurance Requirements for Tenderers of Services. A copy of this document is provided with the information kit.

1.3. Assessment

The procedure is summarised as below:-

The applicant will be assessed on the following factors:-

(a) Ability to carry out the specified work
(b) Availability of appropriate staff (including process for engagement of staff)
(c) Staff qualifications
(d) Staff training process
(e) Safety awareness
(f) Availability of suitable tools, vehicles and equipment
(g) Financial capacity
(h) Control of subcontractors (including process for engagement of subcontractors).
(i) Previous work performance.

The assessment will be carried out by suitably qualified DNSP personnel.

Information and assessment checklists are provided with the information kit.

1.4. Quality Manual

The applicant shall be required to compile a Quality Manual detailing the applicant's standard organisational process controls and responsibility levels in accordance with the appropriate ISO 9000 Standards.

Also, this manual shall detail the applicant's quality plan (flow chart form) to clearly identify all quality requirements about the supply and installation of electrical services. This plan shall fully detail the timing, inspection, testing, auditing, safety requirements, frequency of work checks etc.

1.5. Standard Work Procedure

ENERGEX shall provide as part of the information kit SWP's and Work Practices for the supply and installation of electrical services. The applicant must become familiar with this SWP and follow all requirements contained therein.

1.6. Contractor Ratings

After the applicant has submitted all required documentation and an assessment has been completed, a rating will be assigned. The rating system is fully detailed in ENERGEX's "Quality Assurance Requirements for Suppliers of Services".

The higher the rating of the approved contractors, the lower the level of contract supervision and administration that will be provided by ENERGEX.

1.7. ENERGEX's Standards

It will be necessary for an "Approved Contractor" to carry out all construction and have a good working knowledge of the installation of electrical services according to the standards of ENERGEX.

APPENDIX 8 – INFORMATION REQUIRED FOR ACCEPTANCE OF CONTRIBUTED (RATE 2) PUBLIC LIGHTING

Approved Contractors shall provide ENERGEX with the following information before a final installation audit is undertaken and the Contributed (Rate 2) Public Lighting installation is accepted by ENERGEX.

For large scale projects where it is proposed to commission the Contributed (Rate 2) Public Lighting installation in stages, as constructed drawings for each stage shall be provided to ENERGEX prior to commissioning each stage.

Full Set of As Constructed Drawings

- Lighting and Electrical Layout
- Format as per Appendix 6.1 (Clause 1.2 and 1.3)

A Schematic Wiring Diagram Detailing:

- Format as per Appendix 6.1 (Clause 1.4.5)
- Details of as constructed circuit layouts

Voltage Drop Calculations for all Circuits

- As required by Appendix 6.1 (Clause 1.4.3)
- Re-calculated depending upon circuit alterations (if any)
- Maximum Demand for all “Points of Supply”

Fault Loop Impedance Calculations

- As required by Appendix 6.1 (Clause 1.4.4)
- Re-calculated depending upon circuit alterations (if any)
- Circuit protective device and rating

Evidence of Compliance with ENERGEX’s Equipment Specifications

Certificates from Manufactures for:

- Luminaires to ENERGEX’s Specifications
- Poles to ENERGEX’s Specifications

Test Certificates (Electrical Testing)

In accordance with SWP

- Continuity
- Earthing
- Insulation Resistance
- Phasing

APPENDIX 9 – WIRING DETAILS – UNMETERED (RATE 3) PUBLIC LIGHTING INSTALLATIONS

1.1. General

Unmetered (Rate 3) Public Lighting is normally supplied from ENERGEX's low voltage underground / overhead distribution system or alternatively from the Non Contributed (Rate 1) or Contributed (Rate 2) Public Lighting system. Supply is taken from these installations via a switchboard.

The location of this switchboard is at ENERGEX's discretion and is the point of supply. All installation works beyond this point constitutes the Unmetered (Rate 3) Public Lighting installation.

1.2. Wiring Details

Unmetered (Rate 3) (similarly to Non Contributed (Rate 1) and Contributed (Rate 2)) Public Lighting may be supplied by any of the following methods:-

(1) Overhead cabling

(2) Underground cabling looped via poles

(3) Underground cabling looped via pits

1.3. Circuit Protection

Unmetered (Rate 3) Public Lighting installations are classified as consumer's installations and must comply with the Wiring Rules (AS/NZS 3000).

As such the following two basic supply methods may be adopted:-

(1) Individual protection in poles / pits.

In this case each termination panel at the pole or pit is considered to constitute a switchboard and the looped cabling is sub mains. There is therefore no requirement to provide a continuous earth conductor from the point of supply.

(2) No protection in poles / pits

Unmetered (Rate 3) lighting may be supplied via a main switchboard located adjacent to the point of supply, with no additional protection provided at each pole or pit.

Each circuit originating from this main switchboard is considered a final sub-circuit and continuous individual circuit earths must be run with each sub-circuit.

1.4. Cabling

All cables and electrical conduit shall be installed according to the Wiring Rules (AS/NZS 3000).

Note that the conduit used for Non Contributed (Rate 1) and Contributed (Rate 2) Public Lighting is of a different grade than that required by the Wiring Rules and cannot be used for Unmetered (Rate 3) Public Lighting.

All work carried out on ENERGEX's assets (poles, pillars and pits) shall be according to the requirements of ENERGEX Public Lighting Construction Manual.

1.5. Earthing

1.5.1 General

Unmetered (Rate 3) Public Lighting installations are classified as consumers' installations and must comply with the Wiring Riles (AS/NZS 3000) and the following earthing requirements.

1.5.2 Individual Protection in Poles / Pits

Where individual protection is installed in individual poles/pits, an individual earth must be established at each location.

Where Unmetered (Rate 3) Public Lighting is installed on a pedestrian and/or vehicular bridge, or, on any other structures that do not provide an effective earth, a separate earthing system will be required. An earth conductor shall be installed with the supply cabling and shall have a minimum cross section area of not less that 4 mm² (copper) and comply with the requirements of the Wiring Rules. The earthing cable shall be connected to an "effective earth point" at the first appropriate pillar or pole clear of the bridge structure. At each pole on the bridge, the earth cable shall be bonded to the pole and the neutral conductor.

1.5.3 No Protection in Poles / Pits

Where the Unmetered (Rate 3) Public Lighting installation is supplied from a switchboard and a protective device is not installed in poles/pits, it is necessary to install protection at the switchboard and to install a separate earth conductor from the main switchboard to all the poles on each circuit.

The earth conductor will be installed with the supply cabling and shall have a cross section area in accordance with the requirements of the Wiring Rules (AS/NZS 3000).

At each pole the earth conductor shall be bonded to the pole but not the neutral conductor (i.e. no MEN connection allowable).

1.6. Reference Drawings

For further information on circuit wiring, reference should be made to the drawings in ENERGEX's Public Lighting Construction Manual or Standard Specification.

APPENDIX 10 – WIRING DETAILS – NON-PUBLIC LIGHTING UN-METERED LIGHTING INSTALLATIONS

Non-Public un-metered lighting installations are classified as consumers' installations and must comply with the Wiring Rules (AS/NZS 3000).

These installations are to be installed under the same conditions as Unmetered (Rate 3) Public Lighting and the provisions of Appendix 9 Clauses 1.1 to 1.5 shall apply.

For further information on circuit wiring, reference should be made to drawings as detailed in ENERGEX's Public Lighting Construction Manual.

APPENDIX 11 – AMENDMENT RECORD

AMENDMENTS TO PUBLIC LIGHTING STANDARD CONDITIONS - BMS 03327

- Comparison with QTSC Group Standard Conditions dated 1996.

GENERAL

- "Rate 1" and "Rate 2" are now "Non contributory (Rate 1)" and "Contributory (Rate 2)" respectively to enable a move away from the older tariff based description
- Rate 3 is now termed "Unmetered (Rate 3)"

THE MAJOR AMENDMENTS ARE:

1. ENERGEX will fully fund the cost of new Non Contributory (Rate 1) Public Lighting installations except for the cost of any extended service in excess of the allowable servicing distances, as stated in the document for the various installation types.
2. When a Contributory (Rate 2) Public Lighting Installation is replaced at the end of its useful life, it will revert to a Non Contributory (Rate 1) installation with the cost of replacement being funded by ENERGEX as for new Non Contributory (Rate 1) Public Lighting Installations.
3. In relation to the "General Requirements for Non Contributory (Rate 1) and Contributory (Rate 2) Public Lighting", the minimum width of shoulder on entry/exit ramps and two-way roads for the parking and safe operation of a EWP vehicle in maintenance mode has been reduced from 4.5 to 3.5 metres.
4. Hyperlinks have been included in the document to provide access to the "Network Pricing Schedule" that is located on the ENERGEX web site.
5. The appendices have been up-dated to include references to ENERGEX's technical specifications and details of the current standard poles and outreach brackets, luminaires, lamps and photo-electric control switches that satisfy the conditions for installation of Non Contributory (Rate 1) and Contributory (Rate 2) Public Lighting.

THE FOLLOWING SECTIONS HAVE BEEN ADDED

- Section 2 - Responsibilities
- Section 3 - Application
- Section 4 - Objectives
- Clause 7.5 - Hinged Poles
- Clause 7.6 - Joint Use of Poles Streetlights and Traffic Lights
- Clause 9.6 - Fitting of vandal Guards

THE FOLLOWING SECTIONS HAVE BEEN AMENDED/ALTERED

- **Section 5** Definitions - (Previously 1.5)
- **Section 6** Referred documents - (Previously 1.4)
- **Clause 7.4** Considerations for Use of Slip Base Poles in Design of Non Contributory Rate 1 & Contributory Rate 2 Lighting (Previously 2.4) – Frangible now called slip base
- **Clause 9.1** General Guidelines for Non Contributory Rate 1 & Contributory Rate 2 Lighting (Previously 4.1) – Shoulder width of 4.5m reduced to 3.5m
- **Clause 10.5** Responsibility for Maintenance with Non Contributory Rate 1 Lighting (Previously 5.5) – Vegetation clearance added

- **Clause 10.7** New Installation Costs and Calculated Extended Service Charges with Non Contributory Rate 1 Lighting (Previously 5.7) – new installation costs
- **Clause 11.5** Responsibility for Maintenance with Contributory Rate 2 Lighting (Previously 6.5) – Reference to Section14. Vegetation clearance added
- **Clause 11.8** Alterations to Existing Contributory Rate 2 Installations (Previously 6.8) - Changes to terminology and clarified wording relating to asset removal and depreciated asset charges.
- **Clause 12.2** Design of Unmetered Rate 3 Lighting (Previously 7.2) - Clarification added regarding connection approvals, energisation, and Contact details.
- **Section 13** Change of Lighting Category (Previously 9.0) – A Change from Non Contributory Rate 1 to Contributory Rate 2 has been removed, and the balance has been brought in line with Full Retail Contestability (FRC) / Australian Electricity Regulator (AER) charging.
- **Appendix 2** Public Lighting Design Brief – This section contains a reworked table of allowable pole heights, Outreach Arm Uplifts, and Luminaire Mounting Heights.
- **Appendix 3** Public Lighting Network Charges – This section previously had Tariff Rates and now has reference to ENERGEX's web site.
- **Appendix 5** Poles, Outreach Arms & Luminaire Tables for Non Contributory Rate 1 & Contributory Rate 2 Lighting – This section has been updated with standard allowable components suitable for ENERGEX with references to Joint Technical Specifications.
- **Appendices 5.7 to 5.9** – These Tariff based Appendices have been removed.
- **Appendix 7** Approved Contractor (Previously Appendix 6.2) – Procedures and Assessment has been updated.