Commercial Lighting Upgrade; Commercial Only	Activity No.
	CL 1

1. Activity Specific Definitions

Commercial Lighting is defined as lighting equipment in use in South Australia for the purpose of:

- lighting for roads and public spaces
- traffic signals
- lighting for commercial or industrial premises classified under the Building Code of Australia as either Class 3, 5, 6, 7, 8, 9, 10 or the Common Areas of Class 2

Upgrade means the replacement and/or modification of Existing Lighting Equipment with New Lighting Equipment resulting in a reduction in the consumption of electricity compared to what would have otherwise been consumed.

Existing Lighting Equipment means the equipment that provides lighting services that was already installed and in working order at the time of implementation of the activity, including luminaires and/or lamps, control gear, and control systems

New Lighting Equipment means the equipment that provides lighting services that is installed as a result of the Upgrade for the purpose of the Activity, including luminaires and/or lamps, Control Gear, and control systems

Control Gear means the lighting ballast, transformer or driver.

ELV means extra low voltage, not exceeding 50 volts alternating current (AC) or 120 volts ripple free direct current (DC), as defined in AS/NZS 3000 Wiring rules.

Small Energy Consuming Customer means a customer consuming less than 160MWh of electricity per National Meter Identifier in the 12 months prior to the upgrade.

Large Energy Consuming Customer means a customer consuming more than 160MWh of electricity per National Meter Identifier in the 12 months prior to the upgrade.

2. Activity Description (Summary)

The Activity involves an upgrade to the energy efficiency of Commercial Lighting that results in energy savings as calculated in accordance with this specification.

3. Activity Eligibility Requirements

1. The existing lighting equipment must be in working order at time of the upgrade.
2. The following Activities are excluded:

- New lighting installations undertaken as part of new work or refurbishments that require development approval under the *Development Act 1993*
- Task lighting installations such as portable lighting or desk lamps
- Installing T5 adaptor kits

Additional requirements where recipient of Activity is a large energy consuming customer

3. The recipient of the Activity must cause payment to the installer for the goods and services provided, with the minimum payment requirement being $1.40 per GJ of normalised energy saving as calculated in accordance with this specification.

4. Installed Product Requirements

1. The new lighting equipment must come with a minimum 2 years replacement warranty.
2. At the time of installation the new lighting equipment must:

- be on the list of products accepted for installation under the NSW 'Energy Savings Scheme' (ESS), as published by the ESS Administrator, or
- be an LED linear tube product that is listed on the Victorian Energy Efficiency Target Scheme Product Register, and complies with all relevant requirements of the SA Office of the Technical Regulator "Safety Risks of Changing or Modifying T8 and T5 Lighting", with specific regard to the Requirements for LED Tubes. This document is available from www.sa.gov.au.

3. Control gear for linear fluorescent lamps manufactured in, or imported into Australia must comply with the requirements in AS/NZS 4783.2-2002.

5. Minimum Installation Requirements

1. The Activity must be performed by a licensed electrical worker under the supervision of a licensed electrical contractor
2. The Activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the Activity, including any licensing, registration, statutory approval, Activity certification, health, safety, environmental or waste disposal requirements

3. Where relevant, the Activity must achieve the relevant requirements of:
   - AS 2293 Emergency escape lighting and exit signs for buildings
   - AS/NZS 1158 Lighting for roads and Public Spaces
   - AS 2144 traffic signal lanterns
4. Where required, an Electrical Certificate of Compliance must be provided and retained for verification purposes.
5. All removed lighting and equipment must be removed in accordance with the Environment Protection (Waste to Resources) Policy 2010 under the *Environment Protection Act 1993*. No fluorescent lighting or any other lighting that contains mercury is to be disposed of to landfill.

Additional requirements where recipient of the Activity is a small energy consuming customer:

6. Where the new lighting installed equipment causes sub-optimal operation, or has not been completed to the demonstrated satisfaction of the recipient with regards to the colour temperature, colour rendering and the illumination levels of the new lighting, the installer shall either reinstall equipment equivalent to the original equipment or replace any components of the equipment that are causing the installation not to operate, at no expense to the recipient. Such a request for reinstatement must be acted upon if made within 20 business days of the installation of the new equipment.
7. The installer must make best endeavours to avoid compromising lighting service levels, and lux levels must be maintained at least at the levels prior to the Activity, unless otherwise agreed to by the recipient.

Additional requirements where recipient of the Activity is a large energy consuming customer:

8. Each space, after implementation of the Lighting Upgrade must achieve:
   - the relevant requirements of AS/NZS 1680
   - the requirements of the BCA section F4.4, Artificial Lighting
   - an Illumination Power Density that equals or is less than the maximum Illumination Power Density for each space, as defined in Part J6 of the BCA

6. Reporting Requirements

For verification purposes, the following records will be retained in relation to the Activity:

1. Site Name
2. Site Address
3. The classification of the commercial premises in accordance with Australian and New Zealand Standard Industrial Classification (ANZSIC) codes at the divisional level
4. Date of Activity
5. Energy saved calculated in accordance with the activity energy saving requirements in this specification
6. An output report from the ESS Commercial Lighting Calculation Tool (http://www.ess.nsw.gov.au/Methods_for_calculating_energy_savings/Commercial_Lighting) - produced using the version of the Calculation Tool current at the time the Activity is undertaken
7. Photographs of the lighting in its location (date and location stamped), before and after the upgrade that coincide with the locations specified in the Commercial Lighting Calculation Tool output report.
8. Proof that all removed lighting equipment (including lamps and control gear) has been properly decommissioned including proof of correct recycling or disposal.

Additional requirements where recipient of the Activity is a small energy consuming customer:

9. Evidence that the recipient has received , and acknowledges receipt of, written information on:
   a) the details of the new lighting equipment, including colour temperature, colour rendering and illumination levels, and
   b) the steps the recipient can take should the new lighting equipment be sub-optimal or unsatisfactory.

Additional requirements where recipient of the Activity is a large energy consuming customer:

10. A valid tax invoice, clearly showing the completion date, the address, the name and contact details of the person billed for the installation, and the amount charged for the installation.
11. Lighting levels post installation

7. Activity energy savings

The normalised energy saving from undertaking this Activity is equal to:

Normalised Energy Saving (GJ) = output from the ESS Commercial Lighting Calculation Tool as expressed in 'saved MWh' x 3.6 up to a maximum of 900GJ.

With the exception of lamp only replacements of fluorescent tubes with LED tube products, energy savings for this Activity will be calculated using Equations 6, 7 and 9 of the commercial lighting energy savings formula in Section 9 of the NSW 'Energy Savings Scheme (Amendment No.2) Rule 2014.

For lamp only replacements of fluorescent tubes with LED tube products energy savings will be calculated using the ESS Commercial Lighting Calculation Tool using the lighting category 'LED Lamp Only 240V'.

Calculations will use the factors and values from Schedule A – Default Factors and Classifications of the NSW 'Energy Savings Scheme (Amendment No. 2) Rule 2014.

8. Guidance Notes

Eligible products under the NSW Energy Savings scheme include products of a class listed in the following:
NSW 'Energy Savings Scheme (Amendment No. 2) Rule, 2014 - Schedule A – Table A9.1 'Standards Equipment Classes for Lighting Upgrades', or

NSW 'Energy Savings Scheme (Amendment No. 2) Rule, 2014 - Schedule A – Table A9.3 'Other Equipment Classes for Lighting Upgrades' (Excluding T5 Adaptor kits), or

Products listed under NSW Energy Saving Scheme "Public List of Accepted Emerging Lighting Technologies"
http://www.ess.nsw.gov.au/Projects_and_equipment/Lighting_Technologies/Using_Lighting_Technologies_for_Commercial_Lighting