IPART Energy Sustainability Schemes

Public Lighting Energy Savings Formula

Method Guide

V1.7, September 2022

ESS »

The Independent Pricing and Regulatory Tribunal

IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from IPART's website.

Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders, past, present and emerging.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

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1 About this document

The NSW Energy Savings Scheme (**ESS**) seeks to reduce energy consumption in NSW by creating financial incentives for organisations to invest in energy saving projects.

The other objects of the ESS are to:

- assist households and businesses to reduce energy consumption and energy costs
- make the reduction of greenhouse gas emissions achievable at a lower cost, and
- reduce the cost of, and need for, additional energy generation, transmission and distribution infrastructure.[1]

Electricity retailers and other mandatory participants (**Scheme Participants**) are obliged to meet energy saving targets. Energy savings can be achieved by installing, improving or replacing energy saving equipment. Persons that become Accredited Certificate Providers (**ACPs**) can create energy savings certificates (**ESCs**) from these activities and then sell those ESCs to Scheme Participants. The Independent Pricing and Regulatory Tribunal of NSW (**IPART**) is both the Scheme Administrator and Scheme Regulator of the ESS.[2]

This document provides guidance about how the Public Lighting Energy Savings Formula (**Public Lighting**) method of the ESS operates, some of the key requirements that must be met when using the method, and how to calculate energy savings for a Recognised Energy Saving Activity (**RESA**) and create ESCs. This document should be used by:

- applicants seeking accreditation as a certificate provider, to assist them in completing their application, and
- those persons who are already ACPs, to assist them in accurately calculating energy savings using this method.

1.1 Legislative requirements

This document is not legal advice. The legal requirements for ACPs participating in the ESS are set out in:

- Part 9 of the *Electricity Supply Act 1995* (**Act**)
- Part 6 of the *Electricity Supply (General) Regulation 2014* (**Regulation**), and
- the *Energy Savings Scheme Rule of 2009* (**ESS Rule**).

ACPs are also required to meet any additional accreditation conditions as set out in their Accreditation Notice.

1.2 Document control

Version number	Change description	Date published
V1.0	Initial release – following amendments to the *Energy Savings Scheme Rule of 2009*	May 2016
V1.1	Amended to include additional information about equipment requirements in section 3.4 and control multipliers in section 4.1.	June 2016
V1.2	Update of the equipment requirements in section 3.4, eligibility requirements in section 3.7 and minimum required records in section 6.	October 2016
V1.3	Updated to reflect amendments to the ESS Rule.	May 2017
V1.4	Updated to correct an error in section 3.6.	May 2017
V1.5	Updated to reflect amendments to the ESS Rule	July 2018
V1.6	Updated to reflect amendments to the ESS Rule	March 2020
V1.7	Updated to reflect minor changes to processes following the introduction of The Energy Security Safeguard Application (TESSA)	September 2022

2 Method overview

The Public Lighting method can be used to calculate energy savings from a lighting upgrade of lighting for roads and public spaces or traffic signals, provided that the luminaire is an asset owned and/or maintained by a distributor[a] or Roads and Maritime Services (**RMS**).

ESCs cannot be created if the activity is a standard control service or prescribed transmission service undertaken by a network service provider in accordance with the National Electricity Rules under the *National Electricity (NSW) Law*, except if the activity is a non-network option as defined in the National Electricity Rules.

[a] A distributor is a person who owns, controls or operates a distribution system. Distribution system is defined in the Act.

3 Requirements that must be met

We have provided information below about the requirements of the method. This is not an exhaustive list of requirements, and ACPs should ensure they are familiar with their obligations under the Act, Regulation, ESS Rule and any conditions of their accreditation.

3.1 Energy saver

An ACP can only calculate energy savings and create ESCs from an implementation if the ACP is the energy saver under the ESS Rule. The ACP must be the energy saver as at the implementation date. An energy saver can be either:

- **the original energy saver** – which, under this method, is:
  - the distributor or RMS that is the owner of the luminaire, or
  - the council or RMS if they:
    - are a public lighting customer, for billing, regulatory or management purposes, of the distributor that owns the luminaire, and
    - request the lighting upgrade from the distributor that owns the luminaire, in writing.
- **the nominated energy saver** – which is someone the original energy saver has nominated as the energy saver by completing a Nomination Form.

An ACP that is the original energy saver must be accredited as an ACP **prior to** the implementation date in order to create ESCs from an implementation.

An ACP that is a nominated energy saver must:

- be accredited as an ACP **prior** to the implementation date and before the nomination is made
- have a documented procedure for obtaining the nomination from the original energy saver, and
- be **nominated** by the original energy saver **on or before** the implementation date. The nomination is taken to occur on the date that the nomination form is signed by the original energy saver**.**

3.2 Implementation, implementation date and site

The ESS Rule defines implementations, implementation dates and site (explained below). These concepts are used to determine the number of ESCs, and from when they can be created.

3.2.1 Implementation

An implementation is the delivery of a RESA at a site. A RESA must meet all of the criteria set out in clause 5.3, 5.3A, 5.3B and 5.4 of the ESS Rule.

3.2.2 Implementation date

For RESAs under the Public Lighting method, the implementation date is the date the lighting upgrade was completed.

3.2.3 Site

For the purposes of the Public Lighting method, the site of a lighting upgrade may be described by reference to:

- a street address
- a unique identifier that identifies the affected end-user equipment, or
- a method accepted by the Scheme Administrator.

As part of the application for accreditation, the ACP will need to describe what is considered to be the site of the proposed activity. For example, whether the site is an individual luminaire, or whether it is a council area. In turn, this will determine whether the activity is a single implementation with a single implementation date, or multiple implementations.

3.3 Lighting equipment requirements

Under the Public Lighting method, each item of end-user equipment used in the lighting upgrade must be either:

- a 'standard equipment class' as listed in Table A9.1 of Schedule A to the ESS Rule, or
- an 'other equipment class' as listed in Table A9.3 of Schedule A to the ESS Rule.[3]

If the lighting end-user equipment is listed in Table A9.3, it must be accepted by the Scheme Administrator as meeting the requirements specified in Table A9.4 of Schedule A to the ESS Rule. The Scheme Administrator has decided, in relation to Table A9.4 of the ESS Rule:

- that the lighting equipment approval processes of distributors and RMS are certification schemes accepted by the Scheme Administrator, and
- that approval of the equipment by the relevant distributor, or RMS, demonstrates compliance with a relevant AS/NZS standard.

As such, all lighting end-user equipment listed in Table A9.3 that has been approved for use by the relevant distributor or RMS (when applicable) is accepted by the Scheme Administrator as meeting the lighting equipment requirements specified in Table A9.4 of Schedule A to the ESS Rule.

If the lighting upgrade involves an existing or replacement lamp or luminaire that is registered on a national electricity market load table for unmetered connection points, the device load value listed in that load table must be used as the Lamp Circuit Power (LCP) in Equations 7A and 9A of the ESS Rule.[4]

If the lighting upgrade involves an existing or replacement lamp or luminaire that is not registered on a national electricity market load table for unmetered connection points, the device load value as listed in a public lighting inventory[b] must be used as the LCP in Equations 7A and 9A of the ESS Rule.[5]

3.4 Lighting upgrade

A lighting upgrade means the replacement of existing lighting end-user equipment with new lighting end-user equipment that consumes less electricity, or, the modification of existing lighting end-user equipment resulting in a reduction in the consumption of electricity compared to what would have otherwise been consumed.

The Public Lighting method can only be used to calculate the energy savings for a lighting upgrade of lighting for roads and public spaces or traffic signals.

Lighting for roads and public spaces means lighting covered by *AS/NZS 1158: Lighting for road and public spaces* or *AS/NZS 60598.2.3 Luminaires - Particular requirements - Luminaires for road and street lighting* or both, as applicable.

Traffic signals means lighting referred to in the *AS 2144: Traffic signal lanterns* series of standards.

3.5 Lighting recycling requirements

ACPs are responsible for ensuring that lighting end-user equipment removed or replaced during a lighting upgrade is disposed of appropriately. Furthermore, if the implementation:

- is in a metropolitan levy area (i.e. an area with a postcode listed in Table A25 of Schedule A to the ESS Rule), and
- has an implementation date on or after 15 May 2016,

then any lighting end-user equipment containing mercury must be recycled in accordance with the recycling requirements of a product stewardship program such as 'Fluorocycle' or its equivalent.[6]

3.6 Activities of network service providers that are not eligible

Clause 5.4 of the ESS Rule specifies that an activity is not a RESA if it is a standard control service or prescribed transmission service undertaken by a network service provider in accordance with the *National Electricity Rules* under the *National Electricity (NSW) Law*, except if the activity is a non-network option.[c]

[b] It is requirement of the NSW Public Lighting Code that the distributor maintain a public lighting inventory.

[c] Refer to clause 10.1 of the *Energy Savings Scheme Rule of 2009* for definitions of the key terms used.

3.7 Minimum requirements of conduct

The Scheme Administrator has established minimum requirements for the conduct of ACPs and their representatives (for example, employees or subcontractors). This includes ACP responsibilities for:

- training representatives
- maintaining a register of representatives
- ensuring there is a formal, documented, signed and enforceable (legally binding) contract or agreement in place for each representative, and
- providing appropriate customer service.

ACPs are accountable for all ESS activities conducted by employees, third parties and other representatives. This includes all aspects of an activity for which they create ESCs, from the initial engagement with customers, through to the final quality assurance of documents. ACPs will be held responsible for all actions, omissions and information provided by representatives acting on their behalf under the ESS – regardless of any contract or agreement with other parties. For more information, refer to *ESS Notice 01/2013 (V3.0) Minimum requirements of conduct.*

3.8 Insurance

ACPs (and any contractors[d] involved in the delivery of the RESA) must hold and maintain public liability insurance of at least $5 million. Insurance cover of this amount must be maintained for the life of the RESA. Public liability insurance must, at a minimum, cover the replacement and/or rectification of customers' property damaged as a result of work performed by the ACP and/or the ACP's contractors.

Either the ACP or the ACP's contractors must also hold and maintain product liability insurance of at least $5 million that covers all products used in the RESA. In the event that the ACP is unable to obtain product liability insurance, the ACP must ensure that their contractors hold product liability insurance of at least $5 million.

ACPs must also:

- provide the Scheme Administrator with certificates of currency for their, and their contractors', public liability and product liability insurances, within seven days of each renewal, reissue or change of policy, and
- maintain a register of contractors that contains copies of their public liability insurance and, where required, their product liability insurance.

Compliance with these requirements will be checked at the time of audit.

[d] This includes any person or company the ACP is working with that is involved directly in the implementation of any aspect of the RESA.

4 Calculating energy savings

Under the ESS Rule, energy savings may comprise both electricity savings and gas savings.

4.1 Electricity savings

The electricity savings from an implementation of the Public Lighting method can be calculated using equations 6A, 7A and 9A which are set out in clause 9.4A of the ESS Rule.

4.1.1 Regional network factor

The equation to calculate electricity savings under the public lighting method includes a regional network factor. The applicable regional network factor is based on the postcode of the site and is set out in Table A24 of Schedule A to the ESS Rule.

4.2 Gas savings

The gas savings from this method will always be equal to zero (as, under the ESS Rule, gas savings are not calculated for this method and are therefore not applicable to this method).

5 Calculating and creating ESCs

Once energy savings have been calculated for an implementation using the Public Lighting method, Equation 1 of the ESS Rule is used to calculate the number of ESCs that may be created from the energy savings calculated in relation to an implementation.

Equation 1

$$Number\ of\ Certificates = \sum Implementations\ (Electricity\ Savings\ x\ Electricity\ Certificate\ Conversion\ Factor + Gas\ Savings\ x\ Gas\ Certificate\ Conversion\ Factor)$$

5.1 Applying to register ESCs

Certain information must be submitted to the Scheme Administrator by an ACP to apply to register ESCs.[7] ACPs must provide the required information by uploading the Implementation Data in a csv file format on our online system, TESSA.

5.1.1 Implementation Data

The Implementation Data upload must include a calculation of the number of ESCs to be created in accordance with Equation 1 in the ESS Rule. This calculation involves multiplying the electricity savings arising from the implementation or implementations by the certificate conversion factor for electricity (1.06).[8]

The result is the total number of ESCs that ACPs can apply to register from the implementation or implementations. If the result is not a whole number, it is rounded down to the nearest whole number.

More information about the Implementation Data that needs to be provided for the Public Lighting method is set out in the *CSV Specification* guide.

5.1.2 Submitting your Implementation Data

Implementation Data must be saved in csv file format. This must be completed before uploading to TESSA at the time of registering certificates.

Implementations can be bundled together in an Implementation Data upload. However:

- ACPs must apply to register all ESCs included in an Implementation Data upload in a single application
- ACPs cannot split energy savings calculated from a single implementation across two or more Implementation Data uploads, and
- each Implementation Data upload must only include the calculation of energy savings that are taken to have occurred in the same calendar year (commonly referred to as 'vintage').

When determining how many implementations to bundle in the same Implementation Data upload, ACPs should consider:

- the ESC creation limit specified in their Accreditation Notice, as they must be able to register all the ESCs in the bundle at the same time, and
- the cost of registering certificates.

More information on registering certificates can be found on the ESS website.

6 Minimum required records

ACPs are required to keep records in respect of a RESA, including records of:

- the location in which the RESA occurred
- the energy savings arising from that RESA
- the methodology, data and assumptions used to calculate those energy savings, and
- any other records specified in writing by the Scheme Administrator.[9]

ACPs must retain records for at least six years, in a form and manner approved by the Scheme Administrator.[10] Each ACP's Accreditation Notice may include a condition requiring that the ACP's record keeping arrangements are consistent with the *Record Keeping Guide*.

Table 6.1 below describes the minimum documents ACPs are required to keep as a record of the energy savings from each project. For each implementation, ACPs must collect:

- the records described in Table 6.1, and
- any other records relevant to the activity or activities being implemented.

Table 6.1 Minimum records for all implementations

Requirement	Document	Description
Implementation Date	ACPs propose what document they will keep as a record of the implementation date in their application for accreditation	The document must clearly show the date the lighting upgrade was completed.
Energy Saver	ACPs propose what document they will keep as a record of the energy saver in their application for accreditation.	The document must clearly show: • the name of the energy saver • the ABN of the energy saver • ownership of the luminaire, and • that the upgrade has been requested and approved in writing from the owner of the luminaire (only applicable where the original energy saver is not the owner of the luminaire).
Nomination	Nomination form (not required if the ACP is the original energy saver)	The nomination form must: • be the relevant template available from the ESS website • be signed by the original energy saver, and • be completed on or before the implementation date.
Calculations	The spreadsheet or calculation tool ACPs use to calculate energy savings from each implementation.	The document must clearly show the calculation of energy savings.
Lighting equipment requirements	The lighting equipment being published in the relevant distributor's standard luminaire list, **or** A document issued by RMS showing that the lighting equipment has been accepted for use, **or** A letter from the distributor confirming that the lighting equipment is approved to be installed on their distribution network.	
Lighting upgrade	Lighting inventory or similar document (ACPs may propose what this document will be in their application for accreditation).	The document must clearly show: • the location of the lighting upgrade, and • the specifications of the existing and replacement lighting equipment.
Upgrade type	A declaration that the activity is a lighting upgrade of lighting for roads and public spaces	The declaration must state: • that the lighting is covered by AS/NZS 1158, and/or • that all luminaires in the upgrade are covered by AS/NZS 60598.2.3
	or A declaration that the activity is a lighting upgrade of traffic signals	
Recycling of lighting equipment containing mercury	Receipt or similar document	The document must show that the lighting equipment has been recycled in accordance with the recycling requirements of a product stewardship scheme such as Fluorocycle or its equivalent (refer to clause 5.3A(b)(i) of the ESS Rule).

[1] Cl 98(2) of Schedule 4A, *Electricity Supply Act 1995*.
[2] Cls 151(2) and 153(2) of Schedule 4A, *Electricity Supply Act 1995*.
[3] Cl 9.4A.1(c) of the *Energy Savings Scheme Rule of 2009*.
[4] Cl 9.4A.4(a) of the *Energy Savings Scheme Rule of 2009*.
[5] Cl 9.4A.4(b) of the *Energy Savings Scheme Rule of 2009*.
[6] Cl 5.3A(b) of the *Energy Savings Scheme Rule of 2009*
[7] Cl 6.8 of the *Energy Savings Scheme Rule of 2009*.
[8] Cl 130(1)(a) of Schedule 4A, *Electricity Supply Act 1995*. Cl 130(3) of Schedule 4A, *Electricity Supply Act 1995* provides this may be amended by regulations.
[9] Cls 46(1)-(2) of the *Electricity Supply (General) Regulation 2014*
[10] Cls 46(3)-(4) of the *Electricity Supply (General) Regulation 2014*