Carbon Credits (Carbon Farming Initiative—Commercial and Public Lighting) Methodology Determination 2015

I, Greg Hunt, Minister for the Environment, make the following determination.

Dated 25:6:2015

GREG HUNT

Greg Hunt
Minister for the Environment

Contents

Part 1—Preliminary

1 Name

This is the *Carbon Credits (Carbon Farming Initiative—Commercial and Public Lighting) Methodology Determination 2015*.

2 Commencement

This determination commences on the day after it is registered.

3 Authority

This determination is made under subsection 106(1) of the *Carbon Credits (Carbon Farming Initiative) Act 2011*.

4 Duration

This determination remains in force for the period that:

(a) begins when this determination commences; and

(b) ends on the day before this determination would otherwise be repealed under subsection 50(1) of the *Legislative Instruments Act 2003*.

5 Definitions

(1) In this determination:

Act means the *Carbon Credits (Carbon Farming Initiative) Act 2011*.

ANZSIC means the Australian and New Zealand Standard Industrial Classification, jointly developed by the Australian Bureau of Statistics and Statistics New Zealand.

baseline, when used to describe a kind of lighting equipment in relation to a lighting upgrade (lamps or luminaires, control gear or lighting control devices) means the equipment of that kind that was part of the lighting system immediately before the commencement of the lighting upgrade.

BCA means the *Building Code of Australia*, forming part of the National Construction Code, as amended from time to time.

CO_2-e means carbon dioxide equivalent.

commissioned: a lighting system subject to an lighting upgrade is ***commissioned*** when the upgraded system is first used to provide lighting services once it has been established that it operates as intended.

control gear means equipment that converts electricity to a different voltage, current or waveform, for the purpose of powering a lamp.

declaration day, in relation to a lighting upgrade project, means the day the project is declared to be an eligible offsets project.

device load value, for a lamp or luminaire, means:

(a) if the National Electricity Market Load Tables for Unmetered Connection Points, published by the Australian Energy Market Operator from time to time, specifies a

load value for the lamp or luminaire in the State or Territory in which the lighting upgrade is taking place—that load value; and

(b) otherwise—the average of the load values specified in that document for that lamp or luminaire in all the States or Territories for which a value is given.

EEI means ballast energy efficiency index as defined in *AS/NZS 4783.2*.

ELV means extra-low voltage, as defined in *AS/NZS 60598.2.23*.

excluded area—see subsection 8(3).

fully operational: a lighting system is ***fully operational*** if it is capable of providing the artificial light intended to be provided to its serviced area.

GEMS Act means the *Greenhouse and Energy Minimum Standards Act 2012*.

GEMS determination means a determination made under the GEMS Act.

GEMS Register means the Register under the GEMS Act.

IEC means International Electrotechnical Commission.

induction luminaire—see item 17 of Schedule 1.

integrated photovoltaic luminaire unit—see item 19 of Schedule 1.

lamp, in relation to an eligible lighting upgrade project, means a lamp (including an LED lamp) of a type listed in Schedule 1.

lamp circuit power means the electrical power drawn by a single lamp and its associated control gear.

LCA means Lighting Council Australia.

LED or ***light emitting diode*** means:

(a) an LED as defined in *IEC 62031*; or

(b) an organic LED (OLED) as defined in *IEC 62868:2014*.

LED luminaire—see item 18 of Schedule 1.

lighting control device means equipment that controls the amount of power delivered to a lamp or luminaire, in response to sensors or user input.

lighting equipment, in relation to a lighting system, includes any control gear or lighting control device that serves a lamp or luminaire that is part of the lighting equipment.

lighting system: where one or more sets of lighting equipment together deliver all the artificial light that is intended to be provided to a particular area, the sets of lighting equipment together constitute a ***lighting system*** for that area (the serviced area).

lighting upgrade—see subsection 8(2).

lighting upgrade project—see subsection 8(4).

luminaire, in relation to an eligible lighting upgrade project, means a luminaire of a type listed in Schedule 1.

luminaire circuit power means the electrical power drawn by a luminaire and its associated control gear, whether from built in or external power supplies.

NATA equivalent testing laboratory means a National Association of Testing Authorities (NATA) accredited laboratory or an equivalent laboratory accredited by an organisation included in the Mutual Recognition Arrangements published by NATA.

NCC climate zone, for a location, means the applicable climate zone for that location determined in accordance with the Climate Zone Map prepared by the Australian Building Codes Board.

net abatement amount, in relation to a lighting upgrade project for a reporting period, means the carbon dioxide equivalent net abatement amount for the project in the reporting period for the purposes of paragraph 106(1)(c) of the Act (see also section 16).

NGA Factors document means the document titled *National Greenhouse Accounts Factors*, published by the Department and as in force from time to time.

nominal lamp power (NLP) means the electrical power, in watts, drawn by a lamp.

NSW ESS means the New South Wales Energy Savings Scheme.

project, when used to describe a kind of lighting equipment in relation to a lighting upgrade (lamps or luminaires, control gear or lighting control devices) means the equipment of that kind that is part of the lighting system when the lighting system is commissioned.

public lighting inventory means the inventory of the lighting equipment of a public lighting system that:

(a) is maintained by:
  (i) the public authority or other body responsible for the serviced area (for example, a local council); or
  (ii) the provider of the service (for example, an electricity company) for the purposes of billing the public authority or other body; and
(b) records the number and type of lamps and luminaires and their locations.

public lighting system means a lighting system that services a road or public space of a classification specified in *AS/NZS 1158*.

serviced area: where a lighting system delivers all the artificial light that is intended to be provided to a particular area, the area is the ***serviced area*** of the lighting system.

type means:

(a) in relation to a lamp or luminaire that fits a description in an item of Schedule 1—that description; and
(b) in relation to control gear that fits a description in an item of Schedule 2—that description; and
(c) in relation to a serviced area:
  (i) if the serviced area fits a single description in an item of Schedule 4—that description; and
  (ii) if it fits more than one description in an item of Schedule 4—the description in the item with the lowest number of operating hours; and
  (iii) otherwise:
    (A) if it fits a single description in an item of Schedule 5—that description; and
    (B) if it fits more than one description of an item of Schedule 5— the description in the item with the lowest number of operating hours; and

(d) in relation to a lighting control device that fits a description of an item of Schedule 6—that description.

Note: Schedule 5 includes item 13, which covers a place not otherwise covered by an item in Schedule 4 or Schedule 5.

VEET means the Victorian Energy Efficiency Target.

(2) The full names of the standards referred to in this determination are the following:

(a) *AS/NZS 1158 Lighting for roads and public spaces*;

(b) *AS/NZS 1680 Interior Lighting*;

(c) *AS/NZS 4783.2 Performance of electrical lighting equipment - Ballasts for fluorescent lamps - Energy labelling and minimum energy performance standards requirements*;

(d) *AS/NZS 60598.2.23 Luminaires - Particular requirements - Extra low voltage lighting systems for filament lamps*;

(e) *IEC 62031 LED modules for general lighting – safety specifications*;

(f) *IEC 62868:2014 Organic light emitting diode (OLED) panels for general lighting - Safety requirements*;

(g) *IES LM80-08 Illuminating Engineering Society Approved Method: Measuring Lumen Maintenance of LED Light Sources*;

(h) *IES TM21-11 Illuminating Engineering Society Approved Method: Projecting Long Term Lumen Maintenance of LED Light Sources*.

6 Factors and parameters from external sources

(1) If a calculation in this determination includes a factor or parameter that is defined or calculated by reference to another instrument or writing, the factor or parameter to be used for a reporting period is the factor or parameter referred to in, or calculated by reference to, the instrument or writing as in force at the end of the reporting period.

Note: This means that calculations using historical data for a reporting period may not be correct for later reporting periods because reference instruments might have changed. Baseline calculations, for example, may have to be re-worked from one reporting period to another, as necessary.

(2) Subsection (1) does not apply if:

(a) this determination specifies otherwise; or

(b) it is not possible to define or calculate the factor or parameter by reference to the instrument or writing as in force at the end of the reporting period.

7 Definitions in other instruments relating to lighting equipment

In applying:

(a) the definitions in section 5; or

(b) a provision of Schedule 1 or 2;

to the lighting equipment of a lighting system, a reference in those provisions to a definition in a standard is a reference to the definition in the version of the standard that was in force on the date the lighting system was commissioned.

Note: The specific requirements of this section override the general requirements of section 6 (see paragraph 6(2)(a)).

Part 2—Lighting upgrade projects

8 Lighting upgrade projects

(1) For paragraph 106(1)(a) of the Act, this determination applies to an offsets project if it involves one or more lighting upgrades, each of which:

(a) relates to a lighting system that has a serviced area that:

(i) is not an excluded area; and

(ii) is of a type listed in Schedule 4 or 5; and

(b) can be reasonably expected to:

(i) decrease the energy usage of an existing lighting system by increasing its energy efficiency; and

(ii) result in eligible carbon abatement.

(2) A ***lighting upgrade*** consists of one or more of the following in relation to a lighting system:

(a) modifying the lighting system;

(b) replacing the lighting system;

(c) supplementing the lighting system.

(3) An ***excluded area*** is an area that is:

(a) part of a BCA Class 1 or Class 4 building; or

(b) part of a BCA Class 2 building other than a common area.

Note: The effect of paragraph 8(1)(a) is to exclude residential dwellings (for example houses).

(4) A project covered by subsection (1) is a ***lighting upgrade project***.

Part 3—Project requirements

9 Operation of this Part

For paragraph 106(1)(b) of the Act, this Part sets out requirements that must be met for a lighting upgrade project to be an eligible offsets project.

10 Information to be included in application for declaration

(1) The application under section 22 of the Act in relation to the project must include the following information:

(a) for each lighting upgrade identified at the time of the application:

(i) the location of the lighting system;

(ii) the types of its baseline lamps or luminaires and project lamps or luminaires;

(iii) the types of any baseline control gear and of any project control gear;

(iv) the types of any baseline lighting control device and of any project control device;

(v) the type of its serviced area;

(vi) the nature of the upgrade (whether it is a modification, replacement or supplementation of the lighting system, or a combination of these);

(b) for each class of potential lighting upgrades not individually identified at the time of the application, a description of the class.

Note: See the definition of ***type*** in section 5.

(2) For paragraph (1)(b), the class must consist of lighting upgrades each of which has a system that:

(a) before the upgrade:

(i) has lamps or luminaires and control gear of the same type or types; and

(ii) services the same type of serviced area; and

(b) will be upgraded using the same modifications or the same type or types of new lighting equipment.

11 System requirements

(1) The project must meet the following requirements in relation to each lighting upgrade in the project and its relevant lighting system:

(a) before the upgrade and when the lighting system is commissioned after the upgrade:

(i) the same area must be serviced by the lighting system; and

(ii) the area must be of the same type as listed in Schedule 4 or 5;

Note: This provision is to limit changes in the use of the building. In addition, it excludes non-commercial residential dwellings (for example houses)—see in particular item 13 of Schedule 5.

(b) the system must be fully operational before the commencement of the upgrade;

(c) before the commencement of the upgrade and after the upgrade:

(i) all lamps and luminaires must be of a type listed in Schedule 1; and

(ii) all control gear must be of a type listed in Schedule 2;

(d) after the upgrade, any LED lamp or LED luminaire must have an L_{70} lamp life value of greater than or equal to 30,000 hours;

(e) the energy consumption of the system before the commencement of the upgrade and after the upgrade must be capable of being estimated in accordance with the method in Part 4;

(f) if the lighting upgrade is part of associated construction or reconstruction works—either:

(i) no development approval is required under State or Territory law to undertake the works; or

(ii) if development approval is required under State or Territory law to undertake the works—the approval is required only because of the lighting upgrade;

(g) if the lighting upgrade involves the installation of an item of equipment that is in a product class covered by a determination made under the GEMS Act, the item must be a product listed on the GEMS Register at the time it is commissioned.

(2) The upgrade must be undertaken or completed under the supervision of a licensed electrician, who must provide a signed statement that:

(a) states that he or she supervised the completion of the upgrade; and

(b) specifies the date the lighting system is commissioned; and

(c) certifies that the requirements in paragraphs (1)(a) to(c) are satisfied.

(3) For paragraph (1)(d), the ***L_{70} lamp life value*** (which is an estimate of life of the LED as represented by the average number of operating hours taken for its brightness to depreciate to 70% of its initial level) must be based on data for the lamp or luminaire provided in:

(a) a test report from a NATA equivalent testing laboratory for a test conducted in accordance with IES TM21-11 and IES LM80-08; or

(b) the NSW ESS Emerging Lighting Technologies Public Register; or

(c) if the lamp or luminaire is listed in the VEET Product Register as 'approved'—that Register; or

(d) the LCA Solid State Lighting (SSL) Quality Scheme.

(4) If the lighting upgrade involves relamping in which an LED lamp is connected to an existing transformer that is not listed as compatible control gear in product specifications publically released in Australia by the manufacturer or supplier, the L_{70} lamp life value must be based on data provided in a test report satisfying paragraph (3)(a), for a test in which the LED lamp is tested with the existing transformer.

12 Disclosure requirement

(1) In relation to each lighting upgrade for which the project proponent requires agreement from a third party to proceed, the proponent must not proceed unless it has:

(a) provided the third party with:

(i) a report about the lighting levels and quality of the lighting system after the proposed upgrade that satisfies subsection (2); and

(ii) in that report or another document—a comparison of the lighting levels and quality against the relevant standards set out in:

(A) for public lighting—*AS/NZS 1158*; and

(B) for other lighting—*AS/NZS 1680*; and

(b) received notice in writing that the third party accepts the proposed lighting levels and quality.

(2) A report satisfies this subsection if it is:

(a) a lighting level and quality modelling report that:

(i) for public lighting—is based on modelling conducted in accordance with *AS 1158* and signed off by a qualified person; and

(ii) for lighting other than public lighting—is based on modelling conducted using modelling software AGi32, DIALux, RELUX or equivalent commercial lighting planning program that uses IES files for photometric data, and signed off by a qualified person; or

Note: IES is a data file format that uses the standard file format for photometric data developed by the Illuminating Engineering Society.

(b) a report of estimated lighting levels and quality of the project lighting system prepared by:

(i) a Registered Lighting Practitioner of the Illuminating Engineering Society of Australia and New Zealand; or

(ii) a Certified Lighting Designer of the International Association of Lighting Designers.

(3) In this section:

AGi32 means the lighting planning program of that name developed by Lighting Analysts Inc., USA, or updated versions of the program.

DIALux means the lighting planning program of that name developed by DIAL GmbH, Germany, or updated versions of the program.

qualified person means a lighting practitioner who is:

(a) a Member, Fellow or Registered Lighting Practitioner of the Illuminating Engineering Society of Australia and New Zealand; or

(b) a Professional Member, Fellow or Certified Lighting Designer of the International Association of Lighting Designers.

RELUX means the lighting planning program of that name developed by Relux Informatik AG, Switzerland, or updated versions of the program.

13 Election to use device load values

(1) When calculating baseline energy values for a lighting upgrade of a public lighting system for which the project proponent has a public lighting inventory, the project proponent may elect to use device load values for the lamps or luminaires of the system.

(2) The election applies for the life of the project.

14 Disposal of equipment

(1) If the project will involve or require the removal of existing lighting equipment, it must also ensure that the lighting equipment is disposed of and not re-used or refurbished.

(2) Subsection (1) does not prevent the lighting equipment from being broken down into components and those components being recycled, other than for use in a lighting system.

Note: The project proponent may comply with this section by, for example, rendering the equipment not usable or refurbishable before disposing of it.

15 Requirement in lieu of newness requirement

(1) For subparagraph 27(4A)(a)(ii) of the Act, the substitute newness requirement is in lieu of the newness requirement for a lighting upgrade project.

(2) The project meets the ***substitute newness requirement*** if it has not begun to be implemented.

(3) The project also meets the ***substitute newness requirement*** if:

(a) the project proponent or project proponents for the project:

(i) gave the Regulator a written notice of intention to make an application in relation to the project that satisfied:

(A) paragraphs (1)(a) to (d) of item 388B of Schedule 1 to the amendment Act; or

(B) paragraphs (1)(a) to (d) of item 388C of that Schedule; and

(ii) made the application under section 22 of the Act, or were taken to have done so under the Act, before 1 July 2016; and

(b) the project had not begun to be implemented at the intention notice time.

(4) A determination as to whether a project has begun to be implemented at a particular time is to be done as if for the purposes of subparagraph 27(4A)(a)(i) of the Act (so that subsections 27(4B) to (4E) of the Act apply).

(5) In this section:

amendment Act means the *Carbon Farming Initiative Amendment Act 2014*.

intention notice time has the same meaning as in item 388B or 388C of Schedule 1 to the amendment Act, as appropriate.

Note: Transitional provisions in the *Carbon Farming Initiative Amendment Act 2014* allowed prospective proponents who gave notice of their intentions before the date of Proclamation of that Act to have the newness of their projects assessed as at the time of their notice, provided that they made the section 22 application before 1 July 2015. The effect of this section is to extend this deadline to 1 July 2016 for this determination.

Part 4—Net abatement amount

Division 1—Preliminary

16 Operation of this Part

For paragraph 106(1)(c) of the Act, this Part specifies the method for working out the carbon dioxide equivalent net abatement amount for a reporting period for a lighting upgrade project that is an eligible offsets project.

Note: In this determination, this is called the ***net abatement amount*** for the project for the reporting period (see section 5).

17 Overview of gases accounted for in abatement calculations

The following table provides an overview of the greenhouse gases and emissions sources that are relevant to working out the net abatement amount for a lighting upgrade project in a reporting period.

Greenhouse gases and emissions sources

Item	Relevant emissions calculation	Emissions source	Greenhouse gas
1	Baseline emissions Project emissions	Electricity consumption	Carbon dioxide (CO_2) Methane (CH_4) Nitrous oxide (N_2O)

18 Data to be used in calculations

Data covered by this section to be ascertained as at time of commissioning

(1) If a calculation under this determination in relation to a lighting upgrade includes data in relation to the relevant lighting system that is established in accordance with this section, the data to be used must be:

(a) if it is from a Register that is updated from time to time—taken from the version of the Register that was current at the time the lighting system was commissioned; and

(b) if it is from a test report or other source mentioned in subsections (4) to (8)—taken from a report or other source that was available at the time the lighting system was commissioned, and can reasonably be regarded as current at the time.

When GEMS data may and must be used

(2) If:

(a) a lamp is in a product class covered by a GEMS determination; and

(b) the GEMS determination requires the nominal lamp power of the lamp to be listed on the GEMS Register;

then the nominal lamp power of the lamp listed in the GEMS Register:

(c) may be used in calculating baseline energy consumption for the lighting system; and

(d) must be used in calculating project energy consumption for the lighting system.

(3) If:

(a) a luminaire is in a product class covered by a GEMS determination; and
(b) the GEMS determination requires power consumption data that corresponds to the luminaire circuit power to be listed on the GEMS Register;

then luminaire circuit power of the luminaire established using the corresponding power consumption data listed in the GEMS Register:

(c) may be used in calculating baseline energy consumption for the lighting system; and
(d) must be used in calculating project energy consumption for the lighting system.

Nominal lamp power of a non-LED lamp—baseline and project energy

(4) Subject to subsection (2), when establishing the nominal lamp power of a lamp, other than an LED lamp, for the purpose of calculating either baseline or project energy consumption for a lighting system, the project proponent for the project must use the nominal lamp power for the lamp from one of the following:
(a) product specifications publicly released in Australia by the manufacturer or supplier;
(b) a test report prepared by a NATA equivalent testing laboratory;
(c) a power rating label affixed by the manufacturer on the lamp.

Nominal lamp power of an LED lamp—baseline energy

(5) Subject to subsection (2), when establishing the nominal lamp power of an LED lamp for the purpose of calculating baseline energy consumption for a lighting system, the project proponent for the project must use the nominal lamp power for the lamp from one of the following:
(a) product specifications publically released in Australia by the manufacturer or supplier;
(b) a test report prepared by a NATA equivalent testing laboratory;
(c) a power rating label affixed by the manufacturer on the lamp.

Nominal lamp power of an LED lamp—project energy

(6) Subject to subsection (2), when establishing the nominal lamp power of an LED lamp for the purpose of calculating project energy consumption for a lighting system, the project proponent must use corresponding power consumption data for the lamp from one of the following:
(a) a test report prepared by a NATA equivalent testing laboratory;
(b) the NSW ESS Emerging Lighting Technologies Public Register;
(c) if the lamp is listed in the VEET Product Register as 'approved'—that Register;
(d) the LCA Solid State Lighting (SSL) Quality Scheme.

Luminaire circuit power—baseline energy

(7) Subject to subsection (3), when establishing the luminaire circuit power of an LED luminaire or induction luminaire for the purpose of calculating baseline energy consumption for a lighting system, the project proponent must use corresponding power consumption data for the luminaire provided in:
(a) product specifications publicly released in Australia by the manufacturer or supplier; or
(b) a test report prepared by a NATA equivalent testing laboratory; or
(c) a power rating label affixed by the manufacturer on the luminaire; or

(d) the NSW ESS Emerging Lighting Technologies Public Register; or
(e) if the luminaire is listed in the VEET Product Register as 'approved'—that Register; or
(f) the LCA Solid State Lighting (SSL) Quality Scheme.

Luminaire circuit power—project energy

(8) Subject to subsection (3), when establishing the luminaire circuit power of an LED luminaire or induction luminaire for the purpose of calculating project energy consumption for a lighting system, the project proponent must use corresponding power consumption data for the luminaire provided in:
(a) a test report prepared by a NATA equivalent testing laboratory; or
(b) the NSW ESS Emerging Lighting Technologies Public Register; or
(c) if the luminaire is listed in the VEET Product Register as 'approved'—that Register; or
(d) the LCA Solid State Lighting (SSL) Quality Scheme.

19 Lighting systems to be used in calculations

(1) In calculating the net abatement amount for the project for a reporting period:
(a) the project proponent may choose to exclude a particular lighting system from the calculations; and
(b) the project proponent must exclude a particular lighting system if, at any time during the reporting period:
(i) the serviced area of the lighting system is not of the same type as when the system was commissioned and, as a result:
(A) it is an excluded area; or
(B) it is of a type that has lower annual operating hours; or
(ii) the lighting system, or part of it, has been modified from the form in which it was commissioned in a way that has an effect, that is not minor or trivial, on the abatement for the lighting system.

Note: The exclusion of a lighting system from abatement calculations works to exclude the system from both the baseline and project energy consumption calcuations.

(2) For subparagraph (1)(b)(ii), modifying includes dismantling and otherwise making inoperative.

Division 2—Method for calculating net abatement amount

20 Summary

The net abatement amount for a project for a reporting period is the sum of the abatement for all lighting systems in the project in the reporting period.

The abatement for a lighting system is the baseline emissions minus the project emissions for the lighting system.

21 Net abatement amount for the project (*A*)

The net abatement amount for the project for a reporting period is worked out using the equation (***equation 1***):

$$A = \sum_{i=1}^{n} A_i$$

where:

A is the net abatement amount for the project for the reporting period, in tonnes CO_2-e.

n is the number of lighting systems in the project over which abatement is measured for the reporting period.

$\boldsymbol{A_i}$ is the abatement for the reporting period of the i^{th} lighting system, in tonnes CO_2-e, given by equation 2.

22 Abatement for a lighting system (A_i)

(1) For equation 1, $\boldsymbol{A_i}$ is worked out using the equation (***equation 2***):

$$A_i = \left(EC_{B,i} - EC_{P,i}\right) \times EF_{elec,i}$$

where:

$\boldsymbol{EC_{B,\,i}}$ is the baseline energy consumption, in MWh, of the i^{th} lighting system, given by equation 3.

$\boldsymbol{EC_{P,\,i}}$ is the energy consumption, in MWh, of the i^{th} lighting system after it is commissioned, given by equation 5.

$\boldsymbol{EF_{elec,i}}$ is:

(a) for electricity obtained from an electricity grid that is a grid in relation to which the NGA Factors document in force on the declaration day includes an emissions factor—that factor, in kilograms CO_2-e per kilowatt hour; or

(b) for electricity obtained from an electricity grid not covered by paragraph (a) or from a source other than an electricity grid:

(i) if the supplier of the electricity is able to provide an emissions factor that reflects the emissions intensity of the electricity and is applicable on the declaration day—that factor, in kilograms CO_2-e per kilowatt hour; or

(ii) otherwise—the emissions factor, in kilograms CO_2-e per kilowatt hour, for off-grid electricity included in the NGA Factors document in force on the declaration day.

(2) For subparagraph (b)(i) of the definition of $EF_{elec,i}$, the emissions factor must be worked out:

(a) on a sent-out basis; and

(b) using a measurement or estimation approach that is consistent with the *National Greenhouse and Energy Reporting (Measurement) Determination 2008*.

23 Baseline energy consumption for a lighting system ($EC_{B,i}$)

The baseline energy consumption, $\boldsymbol{EC_{B,i}}$, is an estimation of the amount of energy that would have been consumed by the lighting system during the reporting period had there been no lighting upgrade.

(1) For equation 2, $\boldsymbol{EC_{B,i}}$ is worked out using the equation (***equation 3***):

$$EC_{B,i} = \sum_{j=1}^{m} L_{B,i,j}$$

where:

m is the number of lamps or luminaires in the lighting system immediately before the commencement of the lighting upgrade.

$L_{B,i,j}$ is the baseline energy consumption, in MWh, for the j^{th} lamp or luminaire of the i^{th} lighting system as it stood immediately before the commencement of the lighting upgrade, given by equation 4.

(2) $L_{B,i,j}$ is worked out using the equation (***equation 4***):

$$L_{B,i,j} = LCP_{B,i,j} \times \left(t_i \times FT_i \times \frac{OH_i}{365}\right) \times F_{B,LC,i,j} \times F_{AC,i} \times 10^{-6}$$

where:

$LCP_{B,i,j}$ for the j^{th} lamp or luminaire of the i^{th} lighting system (as it stood immediately before the commencement of the lighting upgrade) is:

(a) if the lighting system is a public lighting system for which the project proponent has elected under section 13 to use device load values—the device load value, in watts, for the lamp or luminaire as at the time the lighting system is commissioned; and

(b) otherwise:

(i) for a lamp that is of a type listed in Schedule 3 and is connected to the control gear of corresponding type specified in that Schedule—the lamp circuit power, in watts, specified in that Schedule; and

(ii) for an LED luminaire or an induction luminaire—the luminaire circuit power, in watts, determined in accordance with section 18; and

(iii) otherwise—0.

t_i is the number of days in the reporting period for the ith lighting system after it is commissioned.

FT_i for the i^{th} lighting system is:

(a) for a serviced area that is type 20, 27 or 29 in Schdule 4 (a road or public space, an area serviced by a traffic light signal lantern, or certain underground areas such as tunnels)—1; and

(b) otherwise—0.95.

Note: The factor 0.95 is a factor that takes account of the fact that a lighting system may be out of operation, or the use of its serviced area may be suspended, for reasons other than normal usage patterns during the reporting period.

OH_i is:

(a) if the serviced area of the i^{th} lighting system at the beginning of the reporting period is of a type listed in Schedule 4—the annual operating hours specified in that Schedule; or

(b) otherwise (in which case the serviced area will be of a type listed in Schedule 5)—the annual operating hours specified in that Schedule.

$F_{B,LC,i,j}$ for the j^{th} lamp or luminaire of the i^{th} lighting system (as it stood immediately before the commencement of the lighting upgrade) is:

(a) if the lamp or luminaire has a lighting control device listed in Schedule 6—the lighting control factor for the device specified in the Schedule; or

(b) otherwise—1.

$\boldsymbol{F_{AC,i}}$ is:

(a) for a serviced area that:

(i) is in a climate zone for which Schedule 7 specifies an air conditioning factor greater than 1; and

(ii) is air conditioned using refrigerated cooling;

the air conditioning factor specified in Schedule 7; and

(b) for a serviced area that:

(i) is in a climate zone for which Schedule 7 specifies an air conditioning factor less than 1; and

(ii) is heated;

the air conditioning factor specified in Schedule 7; and

(c) otherwise—1.

Note: Subparagraph (a)(ii) in the definition of $\boldsymbol{F_{AC,i}}$, does not apply to a serviced area that is air conditioned by means of evaporative cooling, mechanical ventilation or heating only.

24 Project energy consumption for a lighting system ($\boldsymbol{EC_{P,i}}$)

The project energy consumption, $\boldsymbol{EC_{P,\,i}}$, is an estimation of the amount of energy that was consumed by the upgraded lighting system during the reporting period.

(1) For equation 2, $\boldsymbol{EC_{P,i}}$ is worked out using the equation (***equation 5***):

$$EC_{P,i} = \sum_{j=1}^{m} L_{P,i,j}$$

where:

m is the number of lamps or luminaires in the lighting system following the completion of the lighting upgrade.

$\boldsymbol{L_{P,i,j}}$ is the project energy consumption, in MWh, for the j^{th} lamp or luminaire in the i^{th} lighting system following the completion of the lighting upgrade given by equation 6.

(2) $\boldsymbol{L_{P,i,j}}$ is worked out using the equation (***equation 6***):

$$L_{P,i,j} = LCP_{P,i,j} \times \left(t_i \times FT_i \times \frac{OH_i}{365}\right) \times F_{P,LC,i,j} \times F_{AC,i} \times 10^{-6}$$

where:

$\boldsymbol{LCP_{P,i,j}}$, for the j^{th} lamp or luminaire of the i^{th} lighting system following the completion of the upgrade is:

(a) for an integrated photovoltaic luminaire unit—0; and

(b) otherwise:

(i) if the lighting system is a public lighting system for which the project proponent has elected under section 13 to use device load values for equation 3—either:

(A) the device load value, in watts, for the lamp or luminaire as at the time the lighting system is commissioned; or

(B) lamp circuit power or luminaire circuit power, in watts, derived from corresponding power data in a test report prepared by a NATA equivalent testing laboratory; and

(ii) otherwise:

(A) for a lamp other than an LED lamp—the lamp circuit power, in watts, specified in Schedule 3 for that lamp or luminaire and its control gear; or

(B) for an LED lamp—the lamp circuit power, in watts, determined in accordance with section 18; or

(C) for an LED luminaire or an induction luminaire—the luminaire circuit power, in watts, determined in accordance with section 18.

t_i has the same value as in equation 4.

FT_i has the same value as in equation

4.

OH_i has the same value as in equation 4.

$F_{P,LC,i,j}$, for the j^{th} lamp or luminaire of the i^{th} lighting system following the completion of the upgrade, is:

(a) if the lamp or luminaire is controlled by a lighting control device listed in Schedule 6—the lighting control factor specified by that Schedule; or

(b) otherwise—1.

$F_{AC,i}$ has the same value as in equation 4.

Part 5—Reporting, notification and record-keeping requirements

Note: Other reporting, notification, record-keeping and monitoring requirements are set out in regulations and rules made under the Act.

Division 1—Offsets report requirements

25 Operation of this Division

For paragraph 106(3)(a) of the Act, this Division sets out information that must be included in an offsets report about a lighting upgrade project that is an eligible offsets project.

26 Information that must be included in an offsets report

(1) An offsets report for a reporting period must, for each lighting system included in a calculation undertaken in accordance with Part 4 for the reporting period:
  (a) give its location in a form approved by the Regulator; and
  (b) state whether it:
    (i) was included in the most recent previous offsets report; or
    (ii) is an old upgrade that was excluded from the most recent previous report; or
    (iii) is a new upgrade that has not been included in a previous report.

(2) For a lighting system that was included in calculations for an earlier reporting period, but is not included in calculations for this reporting period, the report must state:
  (a) the reason for the exclusion; and
  (b) whether the exclusion is temporary or permanent.

(3) If, in the circumstances described in paragraph 6(2)(b), a factor or parameter is defined or calculated for a reporting period by reference to an instrument or writing as in force from time to time, the report must include the reasons why it was not possible to define or calculate the factor or parameter by reference to the instrument or writing as in force at the end of the reporting period.

Division 2—Notification requirements

27 Operation of this Division

For paragraph 106(3)(b) of the Act, this Division sets out requirements to notify certain matters relating to the project to the Regulator.

28 Notification requirements

(1) The project proponent must notify the Regulator of any safety issues that have been identified with lighting equipment installed or proposed to be installed in relation to the project as soon as practicable after the proponent becomes aware of that issue.

(2) The project proponent must notify the Regulator of any product performance issues that have been identified with lighting equipment installed or proposed to be installed in relation to the project, and are not minor or trivial, within 30 days after the proponent becomes aware of that issue.

(3) The project proponent must notify the Regulator of any product performance issues that have been identified with an equipment unit installed or proposed to be installed in relation to the project within 30 days after the proponent becomes aware of that issue if:
  (a) a product recall notice has been issued; or
  (b) the issue affects:
    (i) more than 5% of the lighting systems; or
    (ii) more than 50 lighting systems.

Division 3—Record-keeping requirements

29 Operation of this Division

For paragraph 106(3)(c) of the Act, this Division sets out record-keeping requirements for a lighting upgrade project that is an eligible offsets project.

30 Record-keeping requirements

(1) The project proponent for the project must keep a record of the disposal of lighting equipment, including evidence that the disposal was conducted in accordance with section 14 and any other applicable legislative requirements.

(2) If a lighting upgrade involves the installation of an item of equipment that is required by the GEMS Act to be a product listed on the GEMS Register, the project proponent must keep a record that demonstrates that the item was a product listed on the Register at the time it is commissioned.

(3) For each lighting upgrade, the project proponent must keep records of the following:
  (a) the date the lighting system was commissioned;
  (b) the type of the serviced area;
  (c) if section 12 applies to the lighting upgrade—evidence that the disclosure requirements of have been met;
  (d) if type of the serviced area changes:
    (i) the date when this occurs; and
    (ii) the new type or, if it becomes an excluded area, that fact;
  (e) if the lighting system, or part of it, is modified, dismantled or made inoperative so that subparagraph 19(1)(b)(ii) applies—the date when this occurs;
  (f) the statement by a licensed electrician made for the purposes of subsection 11(2).

Part 6—Dividing a lighting upgrade project

31 Division of project for reporting purposes

For subsection 77A(2) of the Act, the project may be divided into parts, each of which is 1 or more lighting systems.

Schedule 1—Lamp and Luminaire types

Note: See also section 7.

Lamp and luminaire types and their definitions

Item	Type	Definition
1	T12 linear fluorescent lamp (also known as a T38 linear fluorescent lamp)	A double-capped fluorescent lamp as defined by *AS/NZS 4782.1 Double-capped fluorescent lamps – Performance specifications* with a tube diameter of 38.1 mm.
2	T8 linear fluorescent lamp (also known as a T26 linear fluorescent lamp)	A double-capped fluorescent lamp as defined by *AS/NZS 4782.1 Double-capped fluorescent lamps – Performance specifications* with a tube diameter of 25.4 mm.
3	T5 linear fluorescent lamp (also known as a T16 linear fluorescent lamp)	A double-capped fluorescent lamp as defined by *AS/NZS 4782.1 Double-capped fluorescent lamps – Performance specifications* with a tube diameter of 15.9 mm. But does not include a T5 linear fluorescent lamp that is installed in a luminaire that is not specifically designed for use with that lamp (for example, by using a T5 adaptor kit).
4	T8 or T9 circular fluorescent lamp (also known as a T29 circular fluorescent lamp)	A circular double-capped fluorescent lamp as defined by *AS/NZS 4782.1 Double-capped fluorescent lamps – Performance specifications* with a tube diameter of 28.6 mm.
5	T5 circular fluorescent lamp	A circular fluorescent lamp as defined by *AS/NZS 4782.1 Double-capped fluorescent lamps – Performance specifications* with a tube diameter of 15.9 mm. But does not include a T5 linear fluorescent lamp that is installed in a luminaire that is not specifically designed for use with that lamp (for example, by using a T5 adaptor kit).
6	Compact fluorescent lamp with non-integrated ballast	An externally ballasted single-capped fluorescent lamp as defined by *AS/NZS 60901 Single-capped fluorescent lamps – Performance specifications*. The lamp may include an internal means of starting and pre-heated cathodes.
7	Compact fluorescent lamp with integrated ballast	A self-ballasted compact fluorescent lamp as defined by *AS/NZS 4847 Self- ballasted lamps for general lighting services*.
8	Incandescent lamp (240 V) in traffic signals	A 240 V incandescent lamp intended for use in traffic signals as outlined in *AS 4113.1:1993 Traffic Signal Lamps Part 1: Lamps for 240V a.c. operation*
9	Tungsten halogen lamp (240 V)	A tungsten halogen lamp as defined by *AS 4934 Incandescent lamps for general lighting service*, with a rated voltage of 240 V.
10	ELV tungsten halogen lamp	A tungsten halogen lamp (item 9), with an ELV rating, typically 12 V. These lamps run off an extra-low voltage lighting converter as defined by *AS 4879.1 Performance of transformers and electronic step-down convertors for ELV lamps—Test method—Energy performance*.
11	ELV infrared coated halogen lamp	A tungsten halogen lamp (item 9) with an ELV rating where the halogen globe is coated with a reflective infrared coating to improve the efficiency of the globe.
12	Metal halide lamp	A discharge lamp classified as a metal halide lamp as

Lamp and luminaire types and their definitions		
Item	**Type**	**Definition**
		defined by *IEC 61167 Metal halide lamps – Performance specification*.
13	Mercury vapour lamp	A discharge lamp classified as a high-pressure mercury vapour lamp as defined by *IEC 60188 High-pressure mercury vapour lamps – Performance specifications*.
14	High pressure sodium (HPS) lamp	A discharge lamp classified as a high pressure sodium vapour lamp as defined by *IEC 60662 High-pressure sodium vapour lamps*.
15	ELV LED lamp	A light emitting diode lamp operating at extra low voltage, operating off: an extra-low voltage lighting converter as defined by *AS 4879.1 Performance of transformers and electronic step-down convertors for ELV lamps*; or an LED module defined by *AS/NZS 61347.2.13 Lamp controlgear - Part 2-13: Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules*.
16	240 V LED lamp	A self-ballasted light emitting diode lamp as defined by *AS/NZS 62560 Self-ballasted LED lamps for general lighting services by voltage > 50 V*, with a rated voltage of 240 V.
17	Induction luminaire	A luminaire containing a gas discharge lamp in which the power required to generate light is transferred from outside the lamp envelope to the gas via electromagnetic induction.
18	LED luminaire	A luminaire that combines an LED module or an LED light engine with control gear (either built-in or external) and optical system, with or without a heat sink, to form a lighting system compliant with *AS/NZS 60598.1:2013 Luminaires - General requirements and tests* and the relevant part 2 standards.
19	Integrated photovoltaic luminaire unit	An assembled unit containing: (a) on or more luminaires; and (b) batteries; and (c) photovoltaic cells; that is not connected to an electricity grid. Note: The addditionality requirements mean that a project cannot include an integrated photovoltaic luminaire unit that is attracting subsidies or credits under another government program.

Schedule 2—Control gear types

Note: See also section 7.

Control gear type definitions		
Item	**Type**	**Definition**
1	Electronic ballast	An alternating current supplied electronic ballast as defined in *AS/NZS 4783 Performance of electrical lighting equipment – Ballasts for fluorescent lamps—Method of measurement to determine energy consumption and performance of ballast-lamp circuits*.
2	Magnetic ballast	A ferromagnetic ballast as defined in *AS/NZS 4783 Performance of electrical lighting equipment – Ballasts for fluorescent lamps—Method of measurement to determine energy consumption and performance of ballast-lamp circuits*.
3	Magnetic ballast (reactor type)	An electromagnetic ballast that uses an inductor or autotransformer to limit the current and provide the voltage necessary to ignite the lamp. These ballasts do not include any means of regulating the light output.
4	Magnetic ballast (constant wattage type)	An electromagnetic ballast that uses a combination of inductive and capacitive components to provide a regulated power output (constant wattage) to the lamp.
5	Electronic transformer	An electronic step-down convertor as defined in *AS/NZS 4879.1 Performance of transformers and electronic step-down convertors for ELV lamps - Test method - Energy performance*.
6	Magnetic transformer	A magnetic isolating transformer as defined in *AS/NZS 4879.1 Performance of transformers and electronic step-down convertors for ELV lamps - Test method - Energy performance.*
7	Voltage reduction unit	A device that reduces the voltage applied to the lighting circuit after start-up, when used with magnetically ballasted discharge luminaires.
8	LED power supply	An LED power supply as defined in *AS/NZS IEC 61347.2.13 Lamp controlgear – Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules*

Schedule 3—Lamp circuit power

Lamp circuit power			
Item	**Lamp types (see Schedule 1)**	**Control gear (see Schedule 2)**	**Lamp circuit power (watts)**
1	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent lamp	Electronic ballast, EEI = A1	NLP + 2
2	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent lamp	Electronic ballast, EEI = A2	NLP
3	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent lamp	Electronic ballast, EEI = A3	NLP + 2
4	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent lamp	Electronic ballast, EEI not marked	For baseline: NLP For project: NLP + 2
5	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent lamp	Magnetic ballast, EEI = B1	NLP + 6
6	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent lamp	Magnetic ballast, EEI = B2	NLP + 8
7	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent lamp	Magnetic ballast, EEI = C	NLP + 10
8	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent lamp	Magnetic ballast, EEI = D	NLP + 12
9	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent lamp	Magnetic ballast, EEI not marked	For baseline: NLP + 6 For project: For NLP + 12
10	T5 linear fluorescent lamp or T5 circular fluorescent lamp	Electronic ballast, EEI = A1	1.13 × NLP + 2.5 1.13 × NLP + 2.5
11	T5 linear fluorescent lamp or T5 circular fluorescent lamp	Electronic ballast, EEI = A2	1.08 × NLP + 1.5
12	T5 linear fluorescent lamp or T5 circular fluorescent lamp	Electronic ballast, EEI = A3	1.13 × NLP + 2.5
13	T5 linear fluorescent lamp or T5 circular fluorescent lamp	Electronic ballast, EEI not marked	For baseline: 1.08 × NLP + 1.5 For project: 1.13 × NLP + 2.5
14	Compact fluorescent lamp with non-integrated ballast	Electronic ballast, EEI = A1	NLP + 3
15	Compact fluorescent lamp with non-integrated ballast	Electronic ballast, EEI = A2	NLP + 1
16	Compact fluorescent lamp with non-integrated ballast	Electronic ballast, EEI = A3	NLP + 3
17	Compact fluorescent lamp with	Electronic ballast, no EEI	For baseline:

Lamp circuit power			
Item	**Lamp types (see Schedule 1)**	**Control gear (see Schedule 2)**	**Lamp circuit power (watts)**
	non-integrated ballast	marked	NLP + 1 For project: NLP + 3
18	Compact fluorescent lamp with non-integrated ballast	Magnetic ballast, EEI = B1	NLP + 5
19	Compact fluorescent lamp with non-integrated ballast	Magnetic ballast, EEI = B2	NLP + 7
20	Compact fluorescent lamp with non-integrated ballast	Magnetic ballast, EEI = C	NLP + 9
21	Compact fluorescent lamp with non-integrated ballast	Magnetic ballast, EEI = D	NLP + 11
22	Compact fluorescent lamp with non-integrated ballast	Magnetic ballast, no EEI marked	For baseline: NLP + 5 For project: NLP + 11
23	Compact fluorescent lamp with integrated ballast	Built in	NLP
24	Incandescent lamp (240V) in traffic signals	Built in	NLP
25	240V tungsten halogen lamp	Built in	NLP
26	ELV tungsten halogen lamp or ELV infrared coated halogen lamp	Magnetic transformer	1.25 × NLP (however, for baseline system, if NLP is greater than 35 watts, NLP is taken to be 35 watts)
27	ELV tungsten halogen lamp or ELV infrared coated halogen lamp	Electronic transformer	1.08 × NLP (however, for baseline system, if NLP is greater than 35 watts, NLP is taken to be 35 watts)
28	Metal halide lamp	Magnetic ballast (reactor type)	1.05 × NLP + 14
29	Metal halide lamp	Magnetic ballast (constant wattage type)	1.07 × NLP + 22
30	Metal halide lamp	Electronic ballast	1.10 × NLP + 0.9
31	Mercury vapour lamp	Magnetic ballast	1.03 × NLP + 11
32	High pressure sodium lamp	Magnetic ballast	1.05 × NLP + 13
33	ELV LED lamp	Built in + magnetic transformer	1.25 × NLP
34	ELV LED lamp	Built in + electronic transformer	1.08 × NLP
35	240V LED lamp	Built in	NLP
36	T8 or T12 linear fluorescent lamp or T8 or T9 circular fluorescent	Magnetic ballast + voltage reduction unit	LampCP × (OV ÷ 230)^2

Lamp circuit power			
Item	**Lamp types (see Schedule 1)**	**Control gear (see Schedule 2)**	**Lamp circuit power (watts)**
	lamp or compact fluorescent lamp with non-integrated ballast or mercury vapour lamp or high pressure sodium lamp		where: ***LampCP*** is the lamp circuit power of the relevant lamp with a magnetic ballast specified in this table; and ***OV*** is the output voltage of the voltage reduction unit selected or measured after installation.

Schedule 4—Annual operating hours for types of serviced area—specific kind of area

Note: This Schedule applies to specific kinds of areas and Schedule 5 applies to general areas.

(1) In the following table, a reference to a type of serviced area does not include a reference to an excluded area:

(2) Table:

Annual operating hours for types of serviced area—specific kinds of area

Item	Type of serviced area	Annual Operating Hours (hours per annum)
1	Auditorium, church or public hall or the like	2,000
2	Board room or conference room	2,800
3	Common rooms, spaces and corridors in a BCA Class 2 building	7,000
4	Control room, switch room, or the like	See the annual operating hours (hours per annum) listed in Schedule 5 for the BCA building classification that applies to the serviced area.
5	Corridors	See the annual operating hours (hours per annum) listed in Schedule 5 for the BCA building classification that applies to the serviced area.
6	Courtroom	2,000
7	A dormitory of a BCA Class 3 building used for sleeping only or sleeping and study	2,800
8	An entry lobby outside a building	See the annual operating hours (hours per annum) listed in Schedule 5 for the BCA building classification that applies to the serviced area.
9	Area serviced by an emergency escape lighting or exit signs for buildings	8,760
10	Health-care— children's ward, examination room, patient ward, all patient care areas including corridors where cyanosis lamps are used	6,000
11	Kitchen or food preparation area	See the annual operating hours (hours per annum) listed in Schedule 5 for the BCA building classification that applies to the serviced area.
12	Laboratory—artificially lit to an ambient level of 400 lx or more	2,800
13	Library—stack and shelving area, reading room and general areas	2,800
14	Lounge area for communal use in a BCA Class 3 building or BCA Class 9c aged care building	7,000
15	The circulation, cleaning and service lighting of a museum or gallery	2,000
16	An office	2,800

Annual operating hours for types of serviced area—specific kinds of area		
Item	**Type of serviced area**	**Annual Operating Hours (hours per annum)**
17	A plant room	See the annual operating hours (hours per annum) listed in Schedule 5 for the BCA building classification that applies to the serviced area.
18	A restaurant, café, bar, hotel lounge or other space used for the purpose of serving and consuming food or drinks	5,000
19	A retail space, including a space in a museum or gallery used for the purpose of selling objects	4,000
20	A road or public space	4,500
21	A general purpose learning area or tutorial room of a school	2,000
22	A sole-occupancy unit of a BCA Class 3 building	2,800olo
23	A sole-occupancy unit of a BCA Class 9c aged care building	6,000
24	Storage (not including store rooms within a building of a building class with annual operating hours of less than 5,000)	5,000
25	A service area, store room, cleaner's room or the like within a building	See the annual operating hours (hours per annum) listed in Schedule 5 for the BCA building classification that applies to the serviced area.
26	A toilet, locker room, staff room, rest room or the like	See the annual operating hours (hours per annum) listed in Schedule 5 for the BCA building classification that applies to the serviced area.
27	Area served by traffic signal lantern	2,920 Note: This is 1/3 of total hours in a year, as only one of the three lights is on at any time.
28	Wholesale storage or display area	5,000
29	Underground area with 24 hour public or vehicle access with limited natural lighting, other than a BCA class 7A area	8,760
30	Security lighting for outdoor areas	4,350

Schedule 5—Annual operating hours for types of serviced area—general area

Note: This Schedule applies to general areas and Schedule 4 applies to specific kinds of areas.

Annual operating hours for types of serviced area—general areas		
Item	**Type of serviced area**	**Annual Operating Hours (hours per annum)**
1	BCA Class 2 buildings (Common Areas)	7,000
2	BCA Class 3 buildings (Common Areas)	7,000
3	BCA Class 3 buildings (other than Common Areas)	2,800
4	BCA Class 5 buildings	2,800
5	BCA Class 6 buildings	4,000
6	BCA Class 7 buildings	5,000
7	BCA Class 7A (open air car parks)	4,500
8	BCA Class 7A (undercover car parks)	7,000
9	BCA Class 8 buildings (other than ANZSIC Division C, Manufacturing)	2,800
10	BCA Class 8 buildings (ANZSIC Division C, Manufacturing)	5,000
11	BCA Class 9a and 9c buildings	6,000
12	BCA Class 9b buildings	2,000
13	Other place not mentioned in Schedule 4 or this Schedule, other than an excluded area	1,000

Schedule 6—Lighting control factors

Lighting control factors			
Item	**Lighting control device**	**Definition**	**Lighting control factor**
1	Occupancy sensor (not for item 20 of Schedule 4)	A device that: (a) uses a motion sensor to detect the presence of a person in an illuminated space and responds by adjusting the light output of a lamp or luminaire; and (b) for a baseline system—controls lamps or luminaires in a single enclosed space or open plan zone of less than $100m^2$; and (c) for a project system—controls no more than 6 lamps or luminaires.	0.7
2	Occupancy sensor (item 20 of Schedule 4 only)	A device that: (a) uses a motion sensor to detect the presence of a person in an illuminated space and responds by adjusting the light output of a lamp or luminaire; and (b) for a baseline system—controls lamps or luminaires in a single enclosed space or open plan zone of less than $100m^2$; and (c) for a project system—controls no more than 6 lamps or luminaires.	0.5
3	Daylight-linked sensor	A device that: (a) uses a photoelectric cell to measure ambient daylight levels to automatically vary the light out of a lamp or luminaire; and (b) is located close to a significant source of daylight.	0.7
4	Programmable dimmer	A device that controls the light output of a luminaire to pre-selected light levels (scenes) that: (a) are automatically selected according to time of day,	0.85

Lighting control factors			
Item	**Lighting control device**	**Definition**	**Lighting control factor**
		photoelectric cell or occupancy sensor; and (b) reduce lighting power.	
5	Manual dimmer	A device that allows a user to control the light output of a luminaire using a knob, slider or other manual input mechanism or by manually selecting a pre-programmed light level.	0.9
6	Programmable dimmer and manual dimmer	A combination of item 4 (programmable dimmer) and item 5 (manual dimmer) where all lamps in the lighting system are connected to a programmable dimmer and manual dimmer.	0.76
7	Multi-modal lighting (item 7 Schedule 5 parking area only)	Any lighting equipment that operates in 2 or more lamp circuit power modes	0.3
8	Multi-modal lighting (item 7 Schedule 5 firestairs only)	Any lighting equipment that operates in 2 or more lamp circuit power modes	0.2
9	Multi-modal lighting (item 4 Schedule 5 for carpark only)	Any lighting equipment that operates in 2 or more lamp circuit power modes.	0.25
10	Multi-modal lighting (item 4 Schedule 5 for fire stairs—emergency only)	Any lighting equipment that operates in 2 or more lamp circuit power modes	0.02
11	Multi-modal lighting (item 4 Schedule 5 for fire stairs—general access only)	Any lighting equipment that operates in 2 or more lamp circuit power modes	0.1
12	Other combination of devices	Any combination of 2 or more of the control systems listed in items 1 to 5 other than the combination in item 6	0.6

Schedule 7—Air conditioning factors

Air conditioning factors		
Item	**NCC Climate zone**	**Air conditioning factor**
1	Climate zone 1—Hot humid summer, warm winter	1.25
2	Climate zone 2—Warm humid summer, mild winter	1.17
3	Climate zone 3—Hot dry summer, warm winter	1.16
4	Climate zone 4—Hot dry summer, cool winter	1.01
5	Climate zone 5—Warm temperate	1.04
6	Climate zone 6—Mild temperate	0.96
7	Climate zone 7—Cool temperate	0.9
8	Climate zone 8—Alpine	0.9