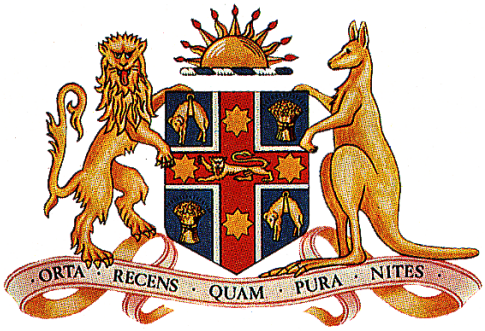

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Notice of Approval of *Energy Savings Scheme (Amendment No. 1) Rule 2026*

under the

Electricity Supply Act 1995

I, PENELOPE SHARPE, Minister for Energy and Minister for Climate Change, pursuant to clause 70(4) of Schedule 4A of the *Electricity Supply Act 1995*, approve the *Energy Savings Scheme (Amendment No. 1) Rule 2026* (Amendment Rule) attached to this notice.

The Amendment Rule commences on 1 July 2026, and it amends the *Energy Savings Scheme Rule of 2009*.

This notice of approval of the Amendment Rule is provided pursuant to clause 70(5)(a) of Schedule 4A of the *Electricity Supply Act 1995*.

A copy of the amended *Energy Savings Scheme Rule of 2009* may also be obtained through the website administered by the NSW Department of Climate Change, Energy, the Environment and Water at www.energy.nsw.gov.au/government-and-regulation/energy-security-safeguard/energy-savings-scheme.

Dated this 24 day of June 2026.

The Hon PENELOPE SHARPE, MLC
Minister for Energy and Minister for Climate Change

Energy Savings Scheme (Amendment No. 1) Rule 2026

under the

ELECTRICITY SUPPLY ACT 1995

1. Name of Rule

This Rule is the *Energy Savings Scheme (Amendment No.1) Rule 2026*.

2. Operation of Rule

This Rule amends the *Energy Savings Scheme Rule of 2009* in the manner set out in Schedule 1.

3. Commencement

This Rule commences on 1 July 2026.

SCHEDULE 1

Energy Savings Scheme Rule of 2009

The Hon Penny Sharpe, MLC
Minister for Energy and Minister for Climate Change

Simplified outline

The following is a simplified outline of this Rule:

- clauses 1-4 set out the commencement of the Rule, the objects of the Rule, the application of the Rule, and status and operation of the Rule.
- clause 5 sets out the definitions of Energy Saver and Recognised Energy Saving Activity, and eligibility for accreditation as an Accredited Certificate Provider.
- clause 6 sets out the conditions on the creation of Energy Savings Certificates under the Rule.
- clause 7 sets out the calculation method for determining Energy Savings under the Project Impact Assessment Method.
- clause 7A sets out the calculation method for determining Energy Savings under the Project Impact Assessment with Measurement and Verification Method.
- clause 8 sets out the calculation method for determining Energy Savings under the Metered Baseline Method using one of the following sub-methods:
    - Baseline per unit of output (clause 8.5)
    - Baseline unaffected by output (clause 8.6)
    - Normalised baseline (clause 8.7)
    - NABERS baseline (clause 8.8)
    - Aggregated Metered Baseline (clause 8.9).
- clause 9 sets out the calculation method for determining Energy Savings under the Deemed Energy Savings Method using one of the following sub-methods:
    - Sale of New Appliances (clause 9.3) - (deleted)
    - Commercial Lighting Energy Savings Formula (clause 9.4)

  - Public Lighting Energy Savings Formula (clause 9.4A)
  - High Efficiency Motor Energy Savings Formula (clause 9.5)
  - Power Factor Correction Energy Savings Formula (clause 9.6)
  - Removal of Old Appliances (clause 9.7)
  - Home Energy Efficiency Retrofits (clause 9.8)
  - Installation of High Efficiency Appliances for Businesses (clause 9.9).
- clause 10 sets out the definitions and interpretation provisions.
- clause 11 sets out savings and transitional arrangements relating to the amendment of this Rule.
- Schedule A sets out Default Factors and Classifications.
- Schedule B sets out Activity Definitions for the Sale of New Appliances (clause 9.3) – (deleted)
- Schedule C sets out Activity Definitions for the Removal of Old Appliances (clause 9.7).
- Schedule D sets out Activity Definitions for General Activities for Home Energy Efficiency Retrofits (clause 9.8).
- Schedule E sets out Activity Definitions for Low Cost Activities for Home Energy Efficiency Retrofits (clause 9.8).
- Schedule F sets out Activity Definitions for the Installation of High Efficiency Appliances for Businesses (clause 9.9).

1 Name and commencement

1.1 This Rule is the *Energy Savings Scheme Rule of 2009* and commences on 1 July 2026, with the following exceptions:

(a) Activities D6, D7, D8 and D9 (Insulation) of Schedule D commence on a date notified by the Minister responsible for the Act by notice published in the NSW Government Gazette;

(b) (deleted);

(c) Clauses 5.4(k), 5.4(l) and 5.9 commence on a date notified by the Minister responsible for the Act by notice published in the NSW Government Gazette.

> **Note:** The provisions referred to in clause 1.1(c) may commence on or after an Approved Corresponding Scheme is in operation in the Australian Capital Territory.

2 Objects of the Rule

2.1 The object of this Rule is to specify provisions for the calculation and creation of Energy Savings Certificates in respect of any activity, or class of activities, prescribed by the Rule.

3 Application of the Rule

3.1 This Rule applies to Accredited Certificate Providers accredited to create Energy Savings Certificates in respect of Recognised Energy Saving Activities in accordance with Part 1, Division 8 of Schedule 4A of the Act, the *Electricity Supply (General) Regulation 2014* and this Rule.

3.2 For the avoidance of doubt, unless expressly provided otherwise, this Rule applies to the calculation of Energy Savings used to create Energy Savings Certificates for which an application for registration is made on or after 1 July 2026.

4 Status and Operation of the Rule

4.1 This Rule is an Energy Savings Scheme Rule made under Part 1, Division 13 of Schedule 4A of the Act.

5 Definitions of Energy Saver and Recognised Energy Saving Activity, and eligibility for accreditation

> **Note:** Other definitions of terms used in this document are set out at clause 10.

5.1 (deleted)

Energy Saver

5.2 The Energy Saver with respect to Energy Savings arising from a Recognised Energy Saving Activity, as calculated according to a calculation method in this Rule, is either:

(a) the person defined as the Energy Saver in the relevant calculation method, provided that, as at the relevant Implementation Date, that person has not nominated another person to be the Energy Saver for those Energy Savings in accordance with clause 5.2 (b); or

(b) the person nominated to be the Energy Saver by the person in clause 5.2 (a), provided that:

(i) the nomination has been made in a form and manner approved by the Scheme Administrator; and

(ii) as at the relevant Implementation Date, another person has not been nominated as the Energy Saver with respect to the same Energy Savings.

Recognised Energy Saving Activity

5.3 A Recognised Energy Saving Activity is any activity that meets all of the following criteria:

(a) it reduces consumption of an Eligible Fuel that is consumed for stationary energy purposes, by:

(i) modifying End-User Equipment or the usage of End-User Equipment (including by installing additional components);

(ii) replacing End-User Equipment with other End-User Equipment, subject to clause 5.3A;

(iii) installing New End-User Equipment, subject to clause 5.3B; or

(iv) removing End-User Equipment, subject to clause 5.3A; and

(b) (deleted)

(c) it is implemented at a Site or Sites in an ESS Jurisdiction; and

(d) it is not unlawful to carry out the activity in that ESS Jurisdiction as at the Implementation Date; and

(e) it reduces consumption of an Eligible Fuel by doing one or more of the following:

(i) increasing the efficiency of consuming an Eligible Fuel;

(ii) (deleted);

(iii) switching to another Eligible Fuel;

(iv) generating energy with the result that there is an overall reduction in the consumption of an Eligible Fuel compared to what would have otherwise been consumed, subject to clause 5.4(i); and/or

(v) reducing consumption of an Eligible Fuel per unit of output;

(f) it reduces consumption of an Eligible Fuel, where this is used for stationary energy;

(g) it results in the outcome of Equation 1 being a positive number, using the Energy Savings for each of the relevant Eligible Fuels, even if negative.

5.3A The replacement or removal of End-User Equipment only constitutes a Recognised Energy Saving Activity if the End-User Equipment:

(a) is not refurbished, re-used or resold; and

(b) is disposed of lawfully, such that:

(i) if the postcode of the Implementation is in a Metropolitan Levy Area listed in Table A25 of Schedule A, any lighting End-User Equipment containing mercury must be recycled in accordance with the recycling requirements of a Product Stewardship Scheme; and

(ii) recycling evidence is obtained for any refrigerants being disposed of, such as a tax invoice or a recycling receipt, or any other evidence acceptable to the Scheme Administrator.

5.3B For the purposes of Clauses 7A and 8, the installation of New End-User Equipment constitutes a Recognised Energy Saving Activity if the Scheme Administrator is satisfied that:

(a) the efficiency of energy consumption of the New End-User Equipment is greater than the average energy efficiency of End-User Equipment that provides the same type, function, output or service. For these purposes, the average energy efficiency of End-User Equipment may be estimated by reference to:

(i) baseline efficiency for that End-User Equipment which may, from time to time, be Published by the Scheme Administrator;

(ii) sales-weighted market data for that End-User Equipment collected from installers, retailers, distributors or manufacturers; or

(iii) product-weighted averages of Products registered as complying with an AS/NZS that defines how energy efficiency is to be measured for that End-User Equipment; or

(b) The New End-User Equipment consumes less Non-renewable Fuel than other End-User Equipment of the same type, function, output or service.

Activities which are not Recognised Energy Saving Activities

5.4 Recognised Energy Saving Activities do not include any of the following:

(a) the installation of End-User Equipment defined as a:

(i) T5 Adaptor kit in Table A9.3 of Schedule A; or

(ii) Retrofit Luminaire-LED Linear Lamp in Table A9.3 of Schedule A;

(b) an activity undertaken in order to comply with any mandatory legal requirement imposed through an Instrument of any jurisdiction, including, but not limited to, compliance with BCA and BASIX development requirements, except for “alterations” of a “BASIX development” as those terms are defined in Schedule 7 of the *Environmental Planning and Assessment Regulation 2021*;

(c) an activity that 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;

Note: Clause 5.4(c) does not prohibit the calculation of Energy Savings under the Public Lighting Energy Savings Formula in clause 9.4A.

(d) the supply of electricity by an Electricity Retailer, or the purchase of electricity from an Electricity Retailer by a customer, from the Electricity Network, under a representation by the Electricity Retailer that there is a reduction in greenhouse gas emissions because the electricity supplied is connected with, or represents an amount equal to, the generation of electricity from a particular energy source. This includes but is not limited to purchases of GreenPower;

(e) an activity that results in a reduction in the consumption of an Eligible Fuel by reducing production, service or safety levels;

> **Note:** Reduced consumption of an Eligible Fuel not directly due to specific actions to improve efficiency does not qualify as a Recognised Energy Saving Activity. Mild weather, lower production, closing down part of a Site, or reducing the quality or quantity of service derived from the use of an Eligible Fuel does not qualify as a Recognised Energy Saving Activity.
>
> Reducing consumption of an Eligible Fuel where there is no negative effect on production or service levels (e.g. reduction of excessive lighting, removal of redundant installed capacity or the installation of more energy efficient equipment) is a Recognised Energy Saving Activity and is not excluded by this clause.

(f) an activity that reduces consumption of an Eligible Fuel by increasing consumption of Non-renewable Fuels (other than electricity) to provide equivalent goods or services;

(g) (deleted);

(h) an activity that reduces Gas or Biogas consumption by flaring that Gas or Biogas instead;

(i) an activity that reduces consumption of an Eligible Fuel by generating electricity from any source where the generating system has a nameplate rating of 30 MW or higher;

(j) a fuel switching activity under clause 7A, clause 8.5, clause 8.6 or clause 8.7 that leads to a net increase in greenhouse gas emissions, where greenhouse gas emissions are calculated using Energy Savings, and the emissions factors in the National Greenhouse Accounts (NGA) Factors as:

  (i) the combined value of Scope 2 and Scope 3 emission factors, for electricity as an energy source; or

  (ii) the combined value of Scope 1 and Scope 3 emission factors, for other fuel types.

  Or emission factors from other sources as approved by the Scheme Administrator.

(k) an activity implemented at a Site in the Australian Capital Territory where the Site is required to report energy consumption under any of the following:

  (i) the *National Greenhouse and Energy Reporting Act 2007* (Cth); or

  (ii) the Australian Government's Energy Efficiency in Government Operations Policy; or

  (iii) the Carbon Neutral ACT Government Framework;

(l) if the Site is in the Australian Capital Territory, any Lighting Upgrade (as referred to in clause 9.4) that is undertaken as part of a development or refurbishment requiring development approval under the *Planning and Development Act 2007* (ACT);

(m) the export of electricity, Gas or Biogas from a Site to the Electricity Network or Gas Network;

(n) supply or purchase of a gaseous fuel from the Gas Network by a customer:

  (i) where representations are made by the Gas Retailer that there is a reduction in greenhouse gas emissions, because the gaseous fuel supplied represents an amount equal to the production of a gaseous fuel from a particular energy source;

  (ii) except where Biogas is supplied directly between neighbouring or nearby Sites by a purpose-built pipe or system of pipes that has been licensed by SafeWork NSW;

(o) an activity that generates energy using Native Forest Bio-materials;

(p) the installation of a solar photovoltaic system, except where this is used for solar irrigation pumping;

(q) the installation of a solar or heat pump water heater, except where these replace an electric or gas hot water heater, or are installed in a non-residential building;

(r) an activity connected with Unsolicited Doorknocking;

(s) an activity where:

(i) the Implementation Date of an Implementation of that activity is on or after 1 July 2026; and

(ii) the activity involves the installation of End-User Equipment, or the replacement of existing equipment with replacement End-User Equipment, that is a gas fired steam boiler, gas fired water heater, gas fired hot water boiler or gas space heater.

5.5 For the purposes of clause 5.3, a Recognised Energy Saving Activity may:

(a) involve multiple Activity Definitions or items of End-User Equipment; and

(b) occur at a single Site or across multiple Sites where each Implementation has an Implementation Date; and

(c) be delivered by Implementations with the same or different Implementation Dates.

Eligibility for accreditation

5.6 (deleted)

5.7 (deleted)

5.8 (deleted)

5.9 For Implementations at any Site located in the Australian Capital Territory, the energy savings certificate provider must be an Approved Abatement Provider approved by the Energy Efficiency Improvement Scheme Administrator as at the Implementation Date.

5.10 (deleted)

6 Creation of Energy Savings Certificates

6.1 (deleted)

6.2 An Accredited Certificate Provider may only create Energy Savings Certificates in respect of the Energy Savings for an Implementation where:

(a) the Accredited Certificate Provider is the Energy Saver for those Energy Savings as at the Implementation Date; and

(b) the Accredited Certificate Provider's Accreditation Date for that Recognised Energy Saving Activity is prior to the Implementation Date.

6.3 (deleted)

6.4 An Accredited Certificate Provider may not create Energy Savings Certificates in respect of any Energy Savings for which Energy Savings Certificates have already been created.

6.5 An Accredited Certificate Provider may only create a certain Number of Certificates in respect of the Energy Savings arising from a Recognised Energy Saving Activity, calculated in accordance with **Equation 1**.

Equation 1

$$Number\ of\ Certificates = \sum_{implementations} \left[\begin{array}{c} Electricity\ Savings \times Regional\ Network\ Factor \times Electricity\ Certificate\ Conversion\ Factor \\ + Gas\ Savings \times Gas\ Certificate\ Conversion\ Factor \\ + Diesel\ Savings \times Diesel\ Certificate\ Conversion\ Factor \\ + Biofuel\ Savings \times Biofuel\ Certificate\ Conversion\ Factor \\ + Biogas\ Savings \times Biogas\ Certificate\ Conversion\ Factor \\ + Biomass\ Savings \times Biomass\ Certificate\ Conversion\ Factor \\ + Onsite\ Renewables\ Savings \times Onsite\ Renewable\ Energy\ Certificate\ Conversion\ Factor \end{array} \right]$$

Where:

- *Number of Certificates* is rounded down to a whole number of Energy Savings Certificates;
- the sum is across the Energy Savings arising from one or more Implementations of the Recognised Energy Saving Activity;
- *Electricity Savings, Gas Savings, Diesel Savings, Biofuel Savings, Biogas Savings, Biomass Savings* and *Onsite Renewables Savings* are the Electricity Savings, Gas Savings, Diesel Savings, Biofuel Savings, Biogas Savings, Biomass Savings and Onsite Renewables Savings respectively, in MWh, arising from each Implementation as calculated according to (as relevant):

  - the Project Impact Assessment Method (clause 7);

  - the Project Impact Assessment with Measurement and Verification Method (clause 7A);

  - the Metered Baseline Method (clause 8); or

  - the Deemed Energy Savings Method (clause 9).
- *Certificate Conversion Factors* are as specified in clauses 33(1) and 33A of Schedule 4A of the Act and clause 37A of the *Electricity Supply (General) Regulation 2014*.
- *Regional Network Factor* is the value from Table A24 of Schedule A corresponding to the postcode of the Address of the Site or Sites where the Implementation(s) took place.

Note: Electricity Savings, Gas Savings, Diesel Savings, Biofuel Savings, Biogas Savings, Biomass Savings and Onsite Renewables Savings may be negative. Energy Savings Certificates may only be created where the result of Equation 1 is a positive number.

6.5A An Accredited Certificate Provider may only create Energy Savings Certificates in respect of Energy Savings arising from a Recognised Energy Saving Activity if:

(a) the Scheme Administrator has given the Accredited Certificate Provider approval to use a calculation method in clauses 7, 7A, 8 or 9; and

(b) the Scheme Administrator is satisfied that the Accredited Certificate Provider's application of the calculation method produced a result reasonably reflecting the Energy Savings arising from that Implementation of the Recognised Energy Saving Activity.

6.5B Energy Savings may be totalled over more than one Implementations of the same Recognised Energy Saving Activity to create one or more Energy Savings Certificates.

6.5C Any Implementation that meets all of the Eligibility Requirements, Equipment Requirements and Implementation Requirements for the relevant Recognised Energy Saving Activity on the Implementation Date, is deemed to meet those requirements of this Rule for Energy Savings Certificate creation, unless otherwise advised in writing by the Scheme Administrator.

6.6 (deleted)

6.7 (deleted)

6.8 For the purpose of applying to register the creation of Energy Savings Certificates for one or more Implementations, an Accredited Certificate Provider must provide the following data to the Scheme Administrator in a manner and form determined by the Scheme Administrator:

(a) the Accredited Certificate Provider identifier;

(b) the Recognised Energy Saving Activity identifier;

(c) the Address of the Site or Sites where the Implementation(s) took place;

(d) any other identifiers required to identify the Site or Sites where the Implementation(s) took place;

(e) the Implementation Date of the Implementation(s);

(f) the Electricity Savings, Regional Network Factor applied, Gas Savings, Diesel Savings, Biofuel Savings, Biogas Savings, Biomass Savings and Onsite Renewables Savings for each Implementation, and the estimated percentage of each of these savings attributable to fuel switching;

(g) the Australian Business Number of the entity utilising the End-Use Service, where applicable;

(i) (deleted – moved to (g))

(ii) (deleted)

(h) the cost to the person who pays for the goods or services that comprise the Implementation, excluding GST;

(i) the type of the End-Use Service for which energy was saved in accordance with Table A17 of Schedule A;

(j) the Business Classification of the entity utilising the End-Use Service in accordance with Table A18 of Schedule A;

(k) the Method or sub-method and Activity Definition, where relevant, used to calculate the Energy Savings;

(l) the Electricity Savings, Gas Savings, Diesel Savings, Biofuel Savings, Biogas Savings, Biomass Savings and Onsite Renewables Savings calculated under each Activity Definition that is used for the Implementation, if the Energy Savings are calculated under clause 9.8 or 9.9 of the Deemed Energy Savings Method; and

(m) any other data providing evidence of Energy Savings from the Implementation as Published, from time to time, by the Scheme Administrator.

6.9 Before registering the creation of an Energy Savings Certificate, the Scheme Administrator may review the data provided in accordance with clause 6.8 to ensure that the calculation of the Energy Savings used to create the Energy Savings Certificate is based on complete data.

Note: An Energy Savings Certificate has no force or effect until the creation of the certificate is registered by the Scheme Administrator (clause 46 of Schedule 4A of the Act).

6.10 An Accredited Certificate Provider must not create Energy Savings Certificates for an Implementation which involves the installation of Banned End-User Equipment (including the replacement of End-User Equipment with Banned End-User Equipment).

6.11 Until such a time as is nominated by the Minister responsible for the Act by notice published in the NSW Government Gazette, no Accredited Certificate Provider may carry out, or create Energy Savings Certificates from, an Implementation of a Suspended Activity with an Implementation Date on or after 12 September 2025. For the purpose of this clause, a Suspended Activity is:

(a) an activity that:

(i) uses Activity Definition F1.1; and

(ii) involves the installation of End-User Equipment that is of Refrigerated Cabinet Product Classes 1–11 as defined in that Activity Definition; or

(b) an activity that:

(i) uses Activity Definition F1.2; and

(ii) involves the installation of End-User Equipment that is of Refrigerated Cabinet Product Classes 1-11 as defined in that Activity Definition.

6.12 For each Implementation under clauses 9.8 and 9.9 that occurs in a calendar month after September 2025, the ACP must, before the end of the next calendar month, report the information specified in clause 6.8 to the Scheme Administrator, in a manner and form determined by the Scheme Administrator.

7 Project Impact Assessment Method

Note: The Project Impact Assessment Method may only be used to "forward create" (under clause 7.4.4) or "top-up" (under clause 7.4.6) Energy Savings Certificates in relation to Implementations with an Implementation Date on or before 30 October 2015.

The Project Impact Assessment Method may only be used for "annual creation" (using Equation 2) to create Energy Savings Certificates in relation to Implementations with an Implementation Date on or before 15 April 2016.

7.1 Energy Savings under the Project Impact Assessment Method

(a) An Accredited Certificate Provider may only use the Project Impact Assessment Method to calculate the Energy Savings of Implementations if the Accredited Certificate Provider is authorised, on or before 30 September 2014, to use clause 7 to calculate those Energy Savings under its accreditation conditions.

(b) (deleted)

(c) Energy Savings calculated in accordance with clause 7.4.4 or 7.4.6, may only be used to create Energy Savings Certificates where those Energy Savings are for Implementations with an Implementation Date on or before 30 October 2015.

(d) Using the Project Impact Assessment Method, the Energy Savings of an Implementation may be calculated using **Equation 2**, where:

(i) those Energy Savings are for Implementations with an Implementation Date on or before 15 April 2016; and

(ii) those Energy Savings are for a maximum period of 10 years after the Implementation Date.

(e) For the purposes of clause 34(4) of Schedule 4A to the Act, Energy Savings that are calculated using equation 2 are taken to occur on the last date of the period for which the Energy Savings are calculated. The Accredited Certificate Provider must make a written record of the deemed date before applying to register Energy Savings Certificates in respect of the Energy Savings.

Equation 2

Electricity Savings = Reduced Electricity Consumption x *Confidence Factor*

Where:

- *Reduced Electricity Consumption* is the extent to which the electricity consumption of the equipment, process, or system is, as a consequence of the Recognised Energy Saving Activity, different to what it otherwise would have been, and is to be calculated in accordance with the engineering assessment in clause 7.2; and
- *Confidence Factor* is the number determined in accordance with clause 7.3 (depending on the type of engineering assessment performed).

7.2 Engineering assessment of reduced electricity consumption

Accredited Certificate Providers using the Project Impact Assessment Method in respect of any Recognised Energy Saving Activity must calculate the reduced electricity consumption of only the equipment, process, or system that is the subject of the Recognised Energy Saving Activity using an engineering assessment or model:

(a) that uses reasonable assumptions and generally accepted engineering methods, models, and formulae;

(b) in which the methods, models and formulae used to assess the Recognised Energy Saving Activity are chosen by the Accredited Certificate Provider, but the assessment is assigned a Confidence Factor under clause 7.3 reflecting the accuracy of the engineering assessment conducted; and

(c) that takes account of:

(i) the consumption of the existing equipment, systems or processes, or for the purposes of clause 5.3B, the average energy efficiency of comparable New End-User Equipment as described in that clause;

(ii) the performance of the equipment, systems or processes, including degradation over time;

(iii) the operating characteristics of the equipment, systems or processes, including hours of use, degree of loading, usage, operating patterns and behaviour, ambient conditions and any other relevant factors; and

(iv) any of the factors or constants used in a Deemed Energy Savings Method under clause 9, if the variable that the value represents is relevant to the assessment or, if the Accredited Certificate Provider proposes to use a different value for the same purpose, that value is acceptable to the Scheme Administrator.

7.3 **Confidence Factor**

The Confidence Factor is:

(a) 1.0, if the engineering assessment determines energy consumption to a high level of accuracy based on logged or equivalent data from the End-User Equipment such as:

(i) hours of operation for the End-User Equipment determined from measurements taken over time or other logged data, or a simpler method where this yields an equivalent level of accuracy;

(ii) allowances for any variance in input characteristics and usage, degree of loading, or output characteristics for the End-User Equipment over time determined from measurements or other logged data, or a simpler method where this yields an equivalent level of accuracy;

(iii) operating environment and ambient conditions over time for the End-User Equipment determined from measurements or other logged data, or a simpler method where this yields an equivalent level of accuracy;

(iv) End-User Equipment characteristics using a full performance curve from manufacturers' or measured data, or a simpler method where this yields an equivalent level of accuracy; and

(v) performance degradation of the End-User Equipment over time using detailed calculations and manufacturers' or measured degradation characteristics, or a simpler method where this yields an equivalent level of accuracy, (including where the engineering assessment relies upon factors or constants used in a Deemed Energy Savings Method set out in this Rule);

or,

(b) 0.9, if the engineering assessment determines energy consumption to a lesser level of accuracy from that described in clause 7.3(a), based on estimations from logged data, records or equivalent data such as:

(i) hours of operation for the End-User Equipment estimated from records, or a simpler method where this yields an equivalent level of accuracy;

(ii) allowances for any variance in input characteristics and usage, degree of loading, or output characteristics for the End-User Equipment over time estimated from records, or a simpler method where this yields an equivalent level of accuracy;

(iii) operating environment and ambient conditions over time estimated for the End-User Equipment from records or average measurements, or a simpler method where this yields an equivalent level of accuracy;

(iv) End-User Equipment characteristics taking account of performance at full and part load or discrete operating modes, or a simpler method where this yields an equivalent level of accuracy; and

(v) estimates of performance degradation of the End-User Equipment over time using manufacturers' or other representative degradation characteristics, or a simpler method where this yields an equivalent level of accuracy,

or,

(c) 0.8, or another value approved by the Scheme Administrator, if the engineering assessment does not meet the level of accuracy set out in clause 7.3 (a) or (b).

7.4 Energy Savings able to be brought forward using the Project Impact Assessment Method

Note: Clause 34 of Schedule 4A of the Act provides that the Rules may specify when Energy Savings arising from a Recognised Energy Saving Activity are considered to have occurred.

Therefore, under the Rule, Accredited Certificate Providers may elect to 'forward create' Energy Savings Certificates by deeming Energy Savings which will cumulatively occur for a future period, to have occurred on the Implementation Date or a later date per the requirements of clause 7.4.3. However, a discount will be applied to the calculation of those Energy Savings.

7.4.1 For the purposes of clause 34 of Schedule 4A of the Act, an Accredited Certificate Provider may elect for future Energy Savings for an Implementation to be deemed to have occurred on a date determined in accordance with clause 7.4.3.

7.4.2 The time period of future Energy Savings for an Implementation which may be deemed to have occurred on a date determined by clause 7.4.3, must be set such that:

(a) the period does not exceed 5 years;

(b) the sum of all time periods of future Energy Savings for an Implementation does not exceed the life of the Implementation (in years) determined by the Accredited Certificate Provider, to the satisfaction of the Scheme Administrator, with reference to:

(i) the number of Energy Savings Certificates that are otherwise eligible to be created over a given period, determined in accordance with this Rule and to the satisfaction of the Scheme Administrator;

(ii) any likely performance degradation of the End-User Equipment that will tend to result in Energy Savings in one period being lower than Energy Savings in preceding periods of equal duration; and

(iii) the expected lifetime of the End-User Equipment, taking into account its characteristics, usage and typical frequency of replacement assuming that the use of the Site and End-User Equipment remains the same; and

(iv) the end date of the period is not later than 10 years after the Implementation Date.

7.4.3 If an Accredited Certificate Provider makes the election in clause 7.4.1, the date on which the Energy Savings for that Implementation are deemed to occur is the later of:

(a) the Implementation Date; and

(b) in respect of an Implementation prior to 1 July 2014, the first date by which all the Energy Savings previously brought forward under clause 7.4.1 to create Energy Savings Certificates in respect of the same Recognised Energy Saving Activity have actually occurred.

7.4.4 The amount of Energy Savings deemed to occur on the date determined by clause 7.4.3 must be calculated in accordance with the method set out in **Equation 3.**

Equation 3

$Electricity\ Savings = Reduced\ Electricity\ Consumption_n \times Confidence\ Factor \times Decay\ Factor_n$

Where:

- *Reduced Electricity Consumption* is the extent to which the electricity consumption of the equipment, process, or system is, as a consequence of the Recognised Energy Saving Activity, different to what it otherwise would have been in year *n*;
- *Confidence Factor* depends on the type of engineering assessment performed under clause 7.2 and is assigned according to clause 7.3;
- $Decay\ Factor_n$ is set out in **Table A16** of Schedule A for year *n*; and
- *n* is the year from 1 (the first year of Energy Savings claimed) to the number of years in the time period determined by clause 7.4.2.

Note: At the end of the period for which Energy Savings Certificates were 'forward created', Accredited Certificate Providers can apply to create Energy Savings Certificates for the Energy Savings which were previously discounted.

7.4.5 For the purposes of clause 34 of Schedule 4A of the Act, Energy Savings which are used to create Energy Savings Certificates in accordance with clause 7.4.6 are taken to occur on the date on which the time period as determined in clause 7.4.2 ends.

7.4.6 At the end of the time period determined by clause 7.4.2, the Accredited Certificate Provider may create Energy Savings Certificates using Energy Savings for the relevant Implementation equal to:

(a) the Energy Savings for each year in the time period other than the first year as calculated using **Equation 2**; less

(b) the Energy Savings for each year in the time period other than the first year as calculated for the relevant year in **Equation 3**,

provided the Accredited Certificate Provider establishes, to the satisfaction of the Scheme Administrator, that the Energy Savings calculated in clause 7.4.6(a) have actually occurred.

7.4.7 (deleted)

7.5 The Implementation Date is the date that the Implementation commenced normal operations.

7.6 The Energy Saver is the Purchaser.

7.7 (deleted)

7A Project Impact Assessment with Measurement and Verification Method

7A.1 Equations to calculate Energy Savings

Using the Project Impact Assessment with Measurement and Verification Method, the Energy Savings for an Implementation may be calculated using:

(a) **Equations 7A.1 and 7A.2 for forward creation for a single Site model,** for Energy Savings calculated from a Baseline Energy Model and Operating Energy Model established to model performance before and after the Implementation; or

(b) **Equations 7A.3 and 7A.4 for annual creation or top-up,** for Energy Savings calculated from actual measurements taken after Implementation compared with expected performance of a Baseline Energy Model under the same conditions; or

(c) **Equations 7A.1 and 7A.5 for creation based on a multiple Site model,** for Energy Savings calculated from a Baseline Energy Model and Operating Energy Model using a Sampling Method.

7A.2 Acceptable energy model types

(a) Baseline Energy Models and Operating Energy Models must be established in accordance with the following criteria:

(i) An Estimate of the Mean that is based on measurements of energy consumption, Independent Variables and Site Constants, where relevant; that specifies a Measurement Period and Modelling Frequency; where the Coefficient of Variation of the energy consumption over the Measurement Period is less than 15%; or

(ii) Regression Analysis that is based on measurements of energy consumption, Independent Variables and Site Constants;

a. specifies a Measurement Period, and Modelling Frequency;

b. meets all the minimum statistical requirements as stated in Table A22 of Schedule A;

c. has the number of independent observations at the Modelling Frequency for each Site when calculated in accordance with clause 7A.6 to be at least six times the Number of Model Parameters in the energy model, except when the Short Energy Models Method is used to make a Non-Routine Adjustment in accordance with clause 7A.5B1(b)(iii); or

(iii) Computer Simulation that uses a commercially available software package approved by the Scheme Administrator for use in modelling the relevant type of End-User Equipment, and that is calibrated against measurements taken from the actual End-User Equipment being simulated to meet any requirements as Published by the Scheme Administrator.

(b) Baseline Energy Models and Operating Energy Models may be developed for:

(i) a single Site based on measurements taken from that Site; or

(ii) multiple Sites based on measurements taken from Sample Sites, using a Sampling Method in accordance with clause 7A.20.

7A.3 Baseline Energy Model

A Baseline Energy Model must estimate the consumption of one Eligible Fuel in the absence of the Implementation and must:

(a) be dependent on Independent Variables and Site Constants, where relevant, that are established by measurements taken under Normal Operating Conditions in accordance with clause 7A.5 of this Rule;

(b) if the model is for New End-User Equipment, be established based on Independent Variables and Site Constants that incorporate the average energy performance of the same type of equipment in accordance with clause 5.3B of this Rule;

(c) have an Effective Range determined in accordance with clause 7A.8 of this Rule;

(d) if using **Equation 7A.1**, estimate annual consumption of one Eligible Fuel based on a Normal Year established in accordance with clause 7A.7 of this Rule;

(e) if using Equation 7A.3:

(i) estimate annual consumption of one Eligible Fuel based on measurements of Independent Variables and Site Constants; and

(ii) use a baseline Measurement Period that has an end date that is no more than 10 years earlier than the end date of the Measurement Period that Energy Savings are being claimed for;

(f) be deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.

7A.4 Operating Energy Model

An Operating Energy Model must estimate the consumption of one Eligible Fuel after an Implementation during a Normal Year and must:

(a) be dependent on Independent Variables and Site Constants, where relevant, that are established by measurements taken under Normal Operating Conditions in accordance with clause 7A.5 of this Rule;

(b) have an Effective Range determined in accordance with clause 7A.8 of this Rule;

(c) estimate annual consumption of one Eligible Fuel based on a Normal Year established in accordance with clause 7A.7 of this Rule; and

(d) be deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.

7A.5 Measurement Procedures

When measuring Eligible Fuel consumption, Independent Variables, Site Constants, or any other relevant parameter, the Accredited Certificate Provider must:

(a) define the Measurement Period so that it consists of a start date and an end date, and optionally a time of day for each of those dates;

(b) define the Measurement Period so that it will have:

(i) in relation to the Baseline Energy Model under clause 7A.3 of this Rule, an end date that occurs before the Implementation Date;

(ii) in relation to the Operating Energy Model under clause 7A.4 of this Rule, a start date that occurs after the Implementation Date; and

(iii) in relation to Measured Annual Eligible $Fuel_f$ Savings calculated using **Equation 7A.4** of this Rule, a start date that occurs on or after the Implementation Date and an end date that is the day before the anniversary of the start date (such that the Measurement Period is for a full year); and

(iv) in relation to Additional Energy Savings calculated in accordance with clause 7A.14 of this Rule, a start date that occurs on the Implementation Date or the anniversary of the Implementation Date (as the case may be) and an end date that is the day before the anniversary of the start date (such that the Measurement Period is for one or more full years and within the Maximum Time Period for Forward Creation determined under clause 7A.12).

(c) define the Measurement Frequency of measurements over the Measurement Period;

(d) define the Measurement Boundary;

(e) specify measurement equipment (meters) or other sources of measurements;

(f) define the calibration procedures, accuracy and precision of such measurement methods. This is not required for meters approved by the National Measurement Institute that are used for the purposes of trade as defined by the *National Measurement Act 1960*;

(f1) ensure that the Measurement Period includes time periods during which Independent Variables may reasonably be expected to lead to the Implementation increasing consumption of the relevant Eligible Fuel;

(g) (deleted)

(h) have the Measurement Procedures defined by clauses 7A.5 (a) to (g) deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.

7A.5A Measurement Procedures in Relation to the Baseline Energy Model

For the purposes of satisfying clause 7A.5(h), Measurement Procedures in relation to the Baseline Energy Model under clause 7A.3 must be deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided prior to the Implementation Date.

7A.5B PIAM&V Method Application Requirements for Non-Routine Events and Adjustments

(a) The Minister may, from time to time, by published order, make PIAM&V Method Application Requirements for Non-Routine Events and Adjustments.

(b) PIAM&V Method Application Requirements for Non-Routine Events and Adjustments may complement and/or supplement the requirements of clause 7A; but must not be inconsistent with this Rule.

(c) An Accredited Certificate Provider must comply with PIAM&V Method Application Requirements for Non-Routine Events and Adjustments.

(d) For the avoidance of doubt, for all purposes, including the purposes of clause 36(1) of Schedule 4A of the Act, a contravention of the PIAM&V Method Application Requirements for Non-Routine Events and Adjustments by an Accredited Certificate Provider is a contravention of this Rule.

7A.5B1 Measurement Procedures to adjust for Non-Routine Events

For the purpose of satisfying clauses 7A.5 and 7A.5B, an Accredited Certificate Provider must use the PIAM&V Method Application Requirements for Non-Routine Events and Adjustments to identify and record any Non-Routine Events occurring within the Measurement Boundary and during any of the Measurement Periods, or the Implementation Period; and

(a) for Non-Routine Events that are sub-metered, use the “Sub-Metering Method" to make a Non-Routine Adjustments; and

(b) for Non-Routine Events that are not sub-metered, use the following methods to make Non-Routine Adjustments:

(i) "Other Implementations (OIMPs) Estimate Method" for Non-Routine Events caused by Energy Savings from Implementations other than the current Implementation for which the PIAM&V energy model is being established and is impacted by the Non-Routine Event; or

(ii) "Data Exclusion Method" in situations where a temporary Non-Routine Event is less than or equal to 25% of the Measurement Period of choice, or where a permanent Non-Routine Event commences within the first 25% of the Baseline Energy Model Measurement Period or within the last 25% of the Operating Energy Model Measurement Period; or

(iii) "Short Energy Models Method" in situations where a temporary Non-Routine Event is greater than 25% of the Measurement Period of choice, or where a permanent Non-Routine Event commences after the first 25% of the Baseline Energy Model Measurement Period but before the last 25% of the Operating Energy Model Measurement Period; and

(c) ensure the Baseline Energy Model and Operating Energy Model resulting from processes performed in clauses 7A.5B1(a) and (b) meet the minimum statistical requirements in accordance with Table A22 in Schedule A; and

(d) have the Procedures defined by clauses 7A.5B1 (a) to (c) deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.

7A.6 Energy consumption, Independent Variables and Site Constants

When identifying and assigning values for Eligible Fuel consumption, Independent Variables and Site Constants an Accredited Certificate Provider must:

(a) define procedures for converting measurements to Eligible Fuel consumption, Independent Variables and Site Constants, if relevant;

(b) assign values for Eligible Fuel consumption, Independent Variables and Site Constants for each time period at the Modelling Frequency in each Measurement Period, where relevant;

(c) ensure the Modelling Frequency of independent observations for the Independent Variables and Eligible Fuel consumption within the Measurement Period for each energy model are the same; and

(d) have the Eligible Fuel consumption, Independent Variables and Site Constants deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.

7A.7 Normal Year

When determining a Normal Year an Accredited Certificate Provider must:

(a) provide values for each Independent Variable and Site Constant over a full year;

(b) ensure the Normal Year represents a typical year for operation of the End-User Equipment within the Maximum Time Period for Forward Creation determined in accordance with clause 7A.12;

(c) describe the assumptions used to establish the Normal Year; and

(d) for a single Site model, have the Normal Year deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided; and

(e) for a multiple Site model:

(i) develop a procedure for determining the Normal Year for each Site in the Population; and

(ii) have the procedure for determining the Normal Year deemed appropriate by a Measurement and Verification Professional, with their written explanatory reasoning provided.

7A.8 Effective Range

When defining the Effective Range of the energy models in clauses 7A.3 and 7A.4 an Accredited Certificate Provider must:

(a) ensure that the Effective Range is based on the range of measured values for each Independent Variable used to develop the energy model, where each Independent Variable has:

(i) a lower limit that is calculated as the minimum of the measured values, minus 5% of difference between the minimum and maximum of the measured values; and

(ii) an upper limit that is calculated as the maximum of the measured values, plus 5% of difference between the minimum and maximum of the measured values; and

(b) (deleted)

(c) have the Effective Range deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.

7A.9 Interactive Energy Effects

When estimating Interactive Energy Effects an Accredited Certificate Provider, in relation to **Equations 7A.2, 7A.4** or **7A.5**, must:

(a) (deleted)

(b) (deleted)

(c) estimate the sum of the change in consumption of each affected Eligible Fuel, *f*, from End-User Equipment for which consumption of each Eligible Fuel is not measured (Interactive Energy Effects$_f$);

(d) ensure that the sum of the absolute Interactive Energy Effects is not greater than 10% of total Eligible Fuel$_f$ Savings for that relevant Eligible Fuel, f, unless estimated in accordance with Method Requirements;

(e) have the Interactive Energy Effects$_f$ deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided; and

(f) include identified Interactive Energy Effects$_f$ for fuels that are not measured.

7A.10 Accuracy Factor

The Accuracy Factor, in relation to **Equations 7A.1** and **7A.3**, is between 1 and 0; and

(a) is either;

(i) the value corresponding to the energy model type and relative precision of the relevant Energy Savings estimate at 90% confidence level as listed in Table A23 of Schedule A; or

(ii) determined by another process as Published by the Scheme Administrator; and

(b) must be deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.

7A.11 Energy Savings brought forward

(a) For the purposes of clause 34 of Schedule 4A of the Act, the Energy Savings for an Implementation calculated using **Equation 7A.1**, based on the relevant Normal Year Energy Savings calculated using **Equation 7A.2**, are taken to occur on the last date of the Measurement Period for the Operating Energy Model as defined in clause 7A.4 of this Rule.

(b) For the purposes of clause 34 of Schedule 4A of the Act, the Energy Savings for an Implementation calculated using **Equation 7A.1**, based on the relevant Normal Year Energy Savings calculated using **Equation 7A.5**, are taken to occur on the later of:

(i) the last date of the Measurement Period for the Operating Energy Model; and

(ii) the Implementation Date.

(c) A maximum of 50,000 Energy Savings Certificates can be brought forward from each Implementation.

7A.12 Maximum Time Period for Forward Creation

The Maximum Time Period for Forward Creation of Energy Savings Certificates in respect of Energy Savings for an Implementation calculated using **Equation 7A.1**, and for the purposes of clauses 7A.7, 7A.13 and 7A.14, must be set such that:

(a) if a Persistence Model is used, the period does not exceed the expected lifetime of the End-User Equipment in whole years, as determined by that Persistence Model;

(b) (deleted)

(c) the start date of the period is the Implementation Date, and the end date of the period is not later than 10 years after the Implementation Date.

7A.13 Persistence Model

(a) A Persistence Model must not be used in connection with the calculation of Energy Savings unless it has first been determined to be acceptable for use by the Scheme Administrator.

(b) A Persistence Model must:

(i) estimate the expected lifetime of the End-User Equipment in whole years;

(ii) estimate the Decay Factor for each future year within the Maximum Time Period for Forward Creation;

(iii) be publicly accessible; and

(iv) satisfy any requirements Published by the Scheme Administrator.

(c) The use of a Persistence Model to forecast the Energy Savings from an Implementation must take into account:

(i) the Business Classification from Table A18 of Schedule A for the Site, if known and relevant;

(ii) the End-User Equipment type;

(iii) the operating hours for the End-User Equipment; and

(iv) typical ambient conditions for the Site, including, where relevant, temperature, humidity and salinity.

(d) The Accredited Certificate Provider must have the use of the Persistence Model deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.

7A.14 Top-up certificate creation

Accredited Certificate Providers may create new Energy Savings Certificates in respect of Additional Energy Savings which have been calculated using **Equations 7A.3** and **7A.4** for one or more Measurement Periods for the Implementation, according to the following:

(a) the term ‘Measured Annual Eligible $Fuel_f$ Savings’ in **Equation 7A.3** is taken to be the sum of relevant Eligible $Fuel_f$ Savings or Gas Savings for each Measurement Period for the relevant Implementation, calculated in accordance with **Equation 7A.4**; and

(b) the term 'Counted Energy $Savings_i$' in **Equation 7A.3** is taken to be the sum of total relevant Eligible $Fuel_f$ Savings for which Energy Savings Certificates have previously been created for the Implementation, for each Measurement Period for the relevant Implementation.

7A.14A Date on which Energy Savings are taken to occur

For the purposes of clause 34 of Schedule 4A of the Act, the Energy Savings for which Energy Savings Certificates are created using **Equations 7A.3** and **7A.4** are taken to occur on the end date of the Measurement Period of the Energy Savings.

7A.15 Measurement and Verification Professional

(a) A Measurement and Verification Professional is a person who is approved by the Scheme Administrator on the basis that such person meets the following criteria to the satisfaction of the Scheme Administrator:

(i) the person has an understanding of clause 7A and relevant measurement and verification techniques;

(ii) the person has an understanding of how the relevant End-User Equipment converts energy into End-Use Services and is affected by the Independent Variables;

(iii) the person is able to perform Regression Analysis, if relevant;

(iv) the person is able to perform an Estimate of the Mean, if relevant;

(v) the person is able to calibrate outputs from a computer simulation, if relevant;

(vi) the person has an understanding of the Sampling Method, if relevant; and

(vii) the person satisfies such additional requirements as Published, from time to time, by the Scheme Administrator.

(b) An application for approval as a Measurement and Verification Professional must be in the manner and form (if any) as determined and Published by the Scheme Administrator.

(c) The Scheme Administrator may withdraw its approval of a person as a Measurement and Verification Professional if the Scheme Administrator considers that the person does not, or ceases to, satisfy the criteria set out in clause 7A.15(a).

(d) The Scheme Administrator may approve or refuse an application made under clause 7A.15(a).

7A.16 Method Requirements

(a) The Scheme Administrator may Publish, from time to time, PIAM&V Method Requirements.

(b) PIAM&V Method Requirements:

(i) may complement and/or supplement the requirements of this clause 7A; but

(ii) must not be inconsistent with this Rule.

(c) An Accredited Certificate Provider must comply with PIAM&V Method Requirements.

(d) If the PIAM&V Method Requirements and the PIAM&V Method Application Requirements for Non-Routine Events and Adjustments are inconsistent, the latter prevails to the extent of the inconsistency.

(e) For the avoidance of doubt, for all purposes, including the purposes of clause 36(1) of Schedule 4A of the Act, a contravention of a PIAM&V Method Requirement by an Accredited Certificate Provider is a contravention of this Rule.

7A.17 Implementation Date

The Implementation Date is the date that the Implementation commenced normal operations.

7A.18 Energy Saver

The Energy Saver is the Purchaser.

7A.19 (deleted)

7A.20 Sampling Method

When using the Sampling Method to establish a Baseline Energy Model and Operating Energy Model for multiple Sites, an Accredited Certificate Provider must:

(a) define the Eligibility Requirements to test if a Site can be included in the Population, based on the:

(i) existing End-User Equipment:

(ii) End-Use Services being provided;

(iii) Recognised Energy Saving Activity to be undertaken;

(iv) Site Constants; and

(v) any additional requirements as Published, from time to time, by the Scheme Administrator;

(b) only include Sites, that meet the Eligibility Requirements, in the Population;

(c) describe the expected distribution of Site Constants across the Population;

(d) define the Representativeness Test to determine if the Sample Sites are representative of the Population with respect to Site Constants;

(e) define conditions under which additional Sample Sites must be selected to ensure Representativeness Tests are met;

(f) ensure that the number of Sample Sites is at least six times the number of Site Constants in each energy model;

(g) ensure the process of selecting Sample Sites minimises bias;

(h) determine the Normal Year for each Site prior to the Implementation Date, according to the procedure that is deemed appropriate under clause 7A.7 (e);

(i) have the Sampling Method deemed appropriate for the Population by a Measurement and Verification Professional, with their written explanatory reasoning provided; and

(j) meet any other criteria as Published, from time to time, by the Scheme Administrator.

7A.21 Additional Requirements for Lighting Upgrades

The Project Impact Assessment with Measurement and Verification Method in this clause 7A may only be used to calculate Energy Savings for a Lighting Upgrade where each item of End-User Equipment used in the Lighting Upgrade is either:

(a) a Standard Equipment Class as listed in Table A9.1 of Schedule A or,

(b) an Other Equipment Class as listed in Table A9.3 of Schedule A, provided that the item complies with any requirements relating to safety or performance Published, from time to time, by the Scheme Administrator under this clause.

7A.21A (deleted)

Note: Equations 7A.1 to 7A.5 are used as required to:

- calculate relevant Energy Savings for projects that affect consumption of that Eligible Fuel; or
- calculate relevant Energy Savings for each Eligible Fuel separately for projects that affect consumption of two or more Eligible Fuels, even if Energy Savings for an Eligible Fuel are negative. Separate energy models must be developed for each Eligible Fuel.

Equation 7A.1

Energy Savings calculated from a Baseline Energy Model and Operating Energy Model

Eligible Fuel$_f$ Savings =

$$\sum_i \left(Normal\ Year\ Eligible\ Fuel_f\ Savings \times Accuracy\ Factor_f \times Decay\ Factor_{fi} - Counted\ Energy\ Savings_{fi}\right)$$

Where:

- *Eligible Fuel$_f$ Savings* means the relevant Energy Savings expression for fuel *f* defined in **Table 7A.1**.

Table 7A.1: relevant Energy Savings expression for Eligible Fuel$_f$ Savings

Where fuel *f* in Eligible Fuel$_f$ is:	The Energy Savings expression is:
electricity	Electricity Savings
Gas	Gas Savings
diesel	Diesel Savings
Biofuel	Biofuel Savings
Biogas	Biogas Savings
Biomass	Biomass Savings
Onsite Renewables	Onsite Renewable Savings

- *f* means the relevant Eligible Fuel.
- *i* means the year number, commencing sequentially from 1 up to the *Maximum Time Period for Forward Creation* of Eligible Fuel *f*, where *Maximum Time Period for Forward Creation* is determined in accordance with clause 7A.12 of this Rule.
- *Normal Year Eligible Fuel$_f$ Savings* means the estimated savings from Eligible Fuel *f*, in MWh, attributable to the Implementation from a Normal Year of operation before taking into account equipment degradation, and is calculated using:
  - **Equation 7A.5** if a Sampling Method is used, and
  - **Equation 7A.2** in all other cases.
- *Accuracy Factor$_f$* means a number between 0 and 1 for Eligible Fuel *f*, as determined by clause 7A.10 of this Rule.
- *Decay Factor$_{fi}$* means a number between 0 and 1 for Eligible Fuel *f*, which quantifies the decay in year *i* of Eligible Fuel$_f$ Savings due to equipment degradation over time, and is:
  - equal to 1 for Eligible Fuel$_f$ Savings in any years the Normal Year
  - Eligible Fuel$_f$ Savings are negative; and
  - in all other cases, determined by either:
    - applying the value corresponding to the relevant year since the Implementation Date in **Table A16** of Schedule A, or
    - assigning a value for that year from a Persistence Model in accordance with clause 7A.13 of this Rule.
- *Counted Energy Savings$_{fi}$* means the total Eligible Fuel$_f$ Savings for Eligible Fuel *f*, for which Energy Savings Certificates have previously been created for the Implementation in the year *i*.

Equation 7A.2

Calculation of Normal Year Eligible Fuel$_f$ Savings

$$Normal\ Year\ Eligible\ Fuel_f Savings\ =$$
$$\sum_t \left(\left(E_{Baseline,f}\left(\tilde{x}_1(t), \tilde{x}_2(t), \dots \tilde{x}_p(t)\right) - E_{Operating,f}\left(\tilde{x}_1(t), \tilde{x}_2(t), \dots \tilde{x}_q(t)\right) \right) . ERAF_{ft} \right)$$
$$+ Interactive\ Energy\ Effects_f$$

Where:

- *Normal Year Eligible Fuel$_f$ Savings* means Energy Savings for the Normal Year for fuel *f*.
- *f* means the relevant Eligible Fuel.
- *t* means a time period at the Modelling Frequency in the Normal Year, while adjusting for any time periods subject to any Non-Routine Adjustments in accordance with clause 7A.5B1.
- $ERAF_{ft}$: is the Effective Range Adjustment Factor that adjusts for Normal Year Eligible Fuel$_f$ Savings during a time period t at the Modelling Frequency corresponding to Independent Variables values $\tilde{x}(t)$ that fall outside the Effective Range of either the Baseline Energy Model or Operating Energy Model:

$$0 < ERAF < 1$$

If ERAF is calculated to be a value less than 0, then an ERAF of 0 is to be applied.

For values of Independent Variables within the Effective Range of either the Baseline Energy Model or Operating Energy Model, an ERAF of 1.0 is applied. Otherwise ERAF is calculated as follows:

$$ERAF = 1 - |3.0 * POER|$$

Where:

$POER$: is the Percentage Outside Effective Range which describes how far a value of an Independent Variable is, outside the Effective Range of either the Baseline Energy Model or Operating Energy Model, from the minimum value or the maximum value of the Effective Range:

$$POER = \frac{Min - a}{R} \qquad \text{Or} \qquad POER = \frac{b - Max}{R}$$

Where:

Min: is the lower limit of the Effective Range calculated in accordance with clause 7A.8(a)(i) of this Rule.

Max: is the upper limit of the Effective Range calculated in accordance with clause 7A.8(a)(ii) of this Rule.

a: is the value of the Independent Variable during a time period at the Modelling Frequency where the Independent Variable is less than the lower limit of the Energy Model's Effective Range.

b: is the value of the Independent Variable during a time period at the Modelling Frequency where the Independent Variable is greater than the upper limit of the Energy Model's Effective Range.

R: is the range of the Energy Model Effective Range:

$$R = Max - Min$$

For Energy Models with multiple Independent Variables outside the Effective Range, the highest POER of those Independent Variables is used to calculate the ERAF.

The highest POER of the two POERs calculated for each of the Baseline Energy Model and the Operating Energy Model is used to calculate the ERAF.

- $E_{Baseline,f}$ means the consumption of Eligible Fuel *f* predicted by a Baseline Energy Model established in accordance with clauses 7A.2 and 7A.3 using measurements of Eligible $Fuel_f$ consumption.
- $E_{Operating,f}$ means the consumption of Eligible Fuel *f* predicted by an Operating Energy Model established in accordance with clauses 7A.2 and 7A.4 using measurements of Eligible $Fuel_f$ consumption.
- $\tilde{x}_p(t)$ means the value of an Independent Variable x_p for time period *t* over the Normal Year determined in accordance with clause 7A.7 of this Rule.
- $\tilde{x}_q(t)$ means the value of an Independent Variable x_q for time period *t* over the Normal Year determined in accordance with clause 7A.7 of this Rule.
- *p* means the number of Independent Variables in the Baseline Energy Model.
- *q* means the number of Independent Variables in the Operating Energy Model.
- *Interactive Energy Effects*$_f$ for Eligible $Fuel_f$ are estimated in accordance with clause 7A.9 of this Rule

Equation 7A.3

Energy Savings calculated from measurements and a Baseline Energy Model

$$Eligible\ Fuel_f\ Savings = Measured\ Annual\ Eligible\ Fuel_f\ Savings \times Accuracy\ Factor_f - Counted\ Energy\ Savings_{fi}$$

Where:

- *Eligible Fuel*$_f$ *Savings* means the relevant Energy Savings expression for fuel *f* defined in **Table 7A.1**.
- *f* means the relevant Eligible Fuel.
- *Measured Annual Eligible Fuel*$_f$ *Savings* means the Eligible $Fuel_f$ Savings for Eligible Fuel *f*, in MWh, attributable to the Implementation from the actual measured conditions over a full year, and is calculated in **Equation 7A.4**.
- *Accuracy Factor*$_f$ means a number between 0 and 1 for Eligible Fuel *f*, as determined by clause 7A.10 of this Rule.
- *Counted Energy Savings*$_{fi}$ means the total Eligible $Fuel_f$ Savings for Eligible Fuel *fi*, for which Energy Savings Certificates have previously been created for the Implementation in the year *i*.

Equation 7A.4

Calculation of Measured Annual Eligible $Fuel_f$ Savings

$$Measured\ Annual\ Eligible\ Fuel_f\ Savings = \sum_t \left(\left(E_{Baseline,f} \left(x_1(t), x_2(t), \dots x_p\ (t) \right) - E_{Measured,f}(t\ ) \right) . ERAF_{ft} \right) + Interactive\ Energy\ Effects_f$$

Where:

- *Measured Annual Eligible Fuel$_f$ Savings* means Energy Savings for that year for fuel *f*.
- *f* means the relevant Eligible Fuel.
- *t* means a time period at the Modelling Frequency in the year, while adjusting for any time periods subject to any Non-Routine Adjustments in accordance with clause 7A.5B1.
- $ERAF_{ft}$: is the Effective Range Adjustment Factor that adjusts for measured Eligible Fuel$_f$ Savings during a time period t at the Modelling Frequency corresponding to Independent Variables values $\tilde{x}(t)$ that fall outside the Effective Range of the Baseline Energy Model:

$$0 < ERAF < 1$$

If ERAF is calculated to be a value less than 0, then an ERAF of 0 is to be applied.
For values of Independent Variables within the Effective Range of the Baseline Energy Model, an ERAF of 1.0 is applied. Otherwise ERAF is calculated as follows:

$$ERAF = 1 - |3.0 * POER|$$

Where:

$POER$: is the Percentage Outside Effective Range which describes how far a value of an Independent Variable is, outside the Effective Range of the Baseline Energy Model, from the minimum value or the maximum value of the Effective Range:

$$POER = \frac{Min - a}{R} \qquad \text{Or} \qquad POER = \frac{b - Max}{R}$$

Where:

Min: is the lower limit of the Effective Range calculated in accordance with clause 7A.8(a)(i) of this Rule.
Max: is the upper limit of the Effective Range calculated in accordance with clause 7A.8(a)(ii) of this Rule.
a: is the value of the Independent Variable during a time period at the Modelling Frequency where the Independent Variable is less than the lower limit of the Baseline Energy Model's Effective Range.
b: is the value of the Independent Variable during a time period at the Modelling Frequency where the Independent Variable is greater than the upper limit of the Baseline Energy Model's Effective Range.
R: is the range of the Energy Model Effective Range:

$$R = Max - Min$$

For Energy Models with multiple Independent Variables outside the Effective Range, the highest POER of those Independent Variables is used to calculate the ERAF.

- $E_{Baseline,f}$ means the consumption of Eligible Fuel *f* predicted by a Baseline Energy Model established in accordance with clauses 7A.2 and 7A.3 using measurements of the Eligible Fuel$_f$ consumption
- $E_{Measured,f}$ means the consumption of Eligible Fuel *f*, measured during the time period *t* in

accordance with clause 7A.5 of this Rule.

- $x_p(t)$ means the value of an Independent Variable x_p measured during time period t determined in accordance with clause 7A.5 of this Rule.
- p means the number of Independent Variables in the Baseline Energy Model.
- *Interactive Energy Effects*$_f$ for Eligible Fuel$_f$ are estimated in accordance with clause 7A.9 of this Rule

Equation 7A.5

Calculation of Normal Year Eligible Fuel$_f$ Savings using a Sampling Method

$$\textit{Normal Year Eligible Fuel}_f\textit{ Savings} = \sum_t \left(E_{Baseline,\,f}(\tilde{x}_1(t), \tilde{x}_2(t), \ldots \tilde{x}_p(t), y_1, y_2, \ldots y_r) - E_{Operating,\,f}(\tilde{x}_1(t), \tilde{x}_2(t), \ldots \tilde{x}_q(t), y_1, y_2, \ldots y_r) \right) + \textit{Interactive Energy Effects}_f$$

Where:

- *Normal Year Eligible Fuel*$_f$ *Savings* means Energy Savings for the Normal Year for fuel *f*.
- *f* means the relevant Eligible Fuel.
- *t* means a time period at the Modelling Frequency in the Normal Year, excluding: any time periods for which any values of the Independent Variables are outside the Effective Range of either the Baseline Energy Model or Operating Energy Model; or any time periods for which the Site Constants are not their standard value for the Site.
- $E_{Baseline,\,f}$ means the consumption of Eligible Fuel *f*, predicted by a Baseline Energy Model established in accordance with clauses 7A.2 and 7A.3 using measurements of the Eligible Fuel$_f$ consumption
- $E_{Operating,\,f}$ means the consumption of Eligible Fuel *f*, predicted by an Operating Energy Model established in accordance with clauses 7A.2 and 7A.4 using measurements of Eligible Fuel$_f$ consumption
- $\tilde{x}_p(t)$ means the value of an Independent Variable $\tilde{x}_p$ during time period *t* in the Normal Year for the Site determined in accordance with clause 7A.7 of this Rule.
- $\tilde{x}_q(t)$ means the value of an Independent Variable $\tilde{x}_q$ during time period *t* in the Normal Year for the Site determined in accordance with clause 7A.7 of this Rule.
- *p* means the number of Independent Variables in the Baseline Energy Model.
- *q* means the number of Independent Variables in the Operating Energy Model.
- y_r *means* the value of a Site Constant for the Site measured in accordance with clause 7A.6.
- *r* means the number of Site Constants for the Site.
- *Interactive Energy Effects* are estimated in accordance with clause 7A.9 of this Rule.

8 Metered Baseline Method

Note: The Metered Baseline Method uses measurements of energy consumption "before" the Implementation has been undertaken to establish a "baseline" energy consumption standard for the Site being considered. The same measurements performed "after" the Implementation has been undertaken will establish new levels of energy consumption, with the difference representing the impact of the Implementation.

Energy Savings are adjusted by a Confidence Factor that is calculated based on the size of the Energy Savings relative to the unexplained variance in the baseline.

8.1 The Metered Baseline Method in this clause 8 may only be used to calculate Energy Savings if measurements made are of a standard, duration, and to a level of accuracy, satisfactory to the Scheme Administrator.

8.2 Using the Metered Baseline Method, the Energy Savings are calculated under:

(a) clause 8.5, using the Baseline per unit of output sub-method;

(b) clause 8.6, using the Baseline unaffected by output sub-method;

(c) clause 8.7, using the Normalised baseline sub-method;

(d) clause 8.8, using the NABERS baseline sub-method; or

(e) clause 8.9, using the Aggregated Metered Baseline sub-method,

provided that all Energy Savings can (to the satisfaction of the Scheme Administrator) be attributed to the corresponding Recognised Energy Saving Activity.

8.3 The time period over which any baseline is determined under this clause 8, using energy measurements before the Implementation Date of the Implementation, must include one or more time periods preceding the Implementation Date. The time period(s) used to determine the baseline must be acceptable to the Scheme Administrator.

Note: For the purposes of clauses 8.5, 8.6 and 8.7 the Accredited Certificate Provider may set new baseline Measurement Periods using the Implementation Dates from new Implementations at a site to calculate ongoing Energy Savings.

8.3A For the purposes of clauses 8.5, 8.6 and 8.7, where the Accreditation Date, with respect to the Recognised Energy Saving Activity, is:

(a) on or after 15 April 2016, Energy Savings may only be calculated for up to a maximum of 10 years from the end date of the baseline Measurement Period;

(b) before 15 April 2016 and the end date of the baseline Measurement Period is less than or equal to 10 years before 15 April 2016, Energy Savings may only be calculated for a maximum of 10 years from the end date of the baseline Measurement Period; and

(c) before 15 April 2016 and the end date of the baseline Measurement Period is more than 10 years before 15 April 2016, Energy Savings may only be calculated for a period that is, as a maximum, equal to the length of the period from the end date of the baseline Measurement Period to 15 April 2016.

8.4 The Accredited Certificate Provider must use utility meters, measurement equipment or other sources of measurement acceptable to the Scheme Administrator.

Note: Sub-metering may be used to effectively reduce the size of the Site considered for baseline calculations, thereby increasing the accuracy of the baseline and hence the Confidence Factor.

8.4A Additional Requirements for Lighting Upgrades

The Metered Baseline Method in this clause 8 may only be used to calculate Energy Savings for a Lighting Upgrade where each item of End-User Equipment used in the Lighting Upgrade is either:

(a) a Standard Equipment Class as listed in Table A9.1 of Schedule A or,

(b) an Other Equipment Class as listed in Table A9.3 of Schedule A, provided that the item complies with any requirements relating to safety or performance Published, from time to time, by the Scheme Administrator under this clause.

8.4B (deleted)

8.5 Baseline per unit of output

Note: This Metered Baseline Method is most appropriate where energy consumption is strongly linked to output (for example, in aluminium smelting).

Where the relationship is non-linear, or there are multiple products or changes in raw materials affecting consumption, another method of normalising the baseline should be used.

8.5.1 The Energy Savings for an Implementation may be calculated using **Method 1**, provided that:

(a) the energy consumption for the Site is a linear function of output;

(b) fixed energy consumption, which is the energy consumption of the Site that does not vary with variations in output, can be measured or estimated;

(c) output has not changed from the average output over the period during which the variable energy baseline is measured by more than 50%; and

(d) the variable energy baseline is calculated using data from periods immediately preceding the Implementation Date, up to a maximum of 5 years, excluding any periods that are not representative of the long-term Site consumption due to factors including plant shutdown or major maintenance. Where this is not possible, due to data unavailability or other reasons, a baseline may be set using other periods acceptable to the Scheme Administrator.

(e) for Implementations that affect consumption of more than one Eligible Fuel, that Energy Savings are calculated for each of those Eligible Fuels, even if the savings are negative.

8.5.2 The Implementation Date is the earlier of the start date of the first Measurement Period that occurs after the end of the last period T_b referred to in Method 1 or the date on which the reduction of energy consumption commenced due to the Implementation.

8.5.3 The Energy Saver is the person who is liable (contractually or otherwise) to pay for the energy consumption at the Site at the Implementation Date.

8.5.4 For the purposes of clause 34 of Schedule 4A of the Act, Energy Savings calculated under this clause 8.5 are taken to have occurred on the last date of the Measurement Period.

Method 1 – Baseline per unit of output

Step (1) Select a *Measurement Period* acceptable to the Scheme Administrator, that will be the duration of time over which all measurements in this method will be taken and that is:

(a) a minimum of one day and a maximum of one year; and

(b) if there is a regular cycle to the consumption of energy on the Site, an integer multiple of the period of that cycle.

Step (2) Determine *Energy Savings* by completing Steps (2A) to (2G) for each Eligible Fuel, and for each time period T_a by reference to which the Accredited Certificate Provider seeks to create Energy Savings Certificates by repeating Steps (2E) to (3) for each Eligible Fuel for each such period.

Step (2A) Determine the *Fixed Consumption* (in MWh), which is the consumption of the relevant Eligible Fuel for the Site that does not vary with variations in output, and is:

- determined by estimating or extrapolating from measurements taken during plant downtime or estimated or determined mathematically from multiple periods;
- a reasonable reflection of the consumption unaffected by output, and will lead to Energy Savings calculations that are reasonable, and
- over a period T_b before Energy Savings commence and the duration of which is equal to the Measurement Period.

Step (2B) Calculate $Variable\ Consumption_{Tb}$ (in MWh / unit of output) for n time periods T_b as follows:

$$Variable\ Consumption_{Tb} = (Total\ Consumption_{Tb} - Fixed\ Consumption) / Output_{Tb}$$

Where:

- T_b denotes a time period, before the Implementation Date, the duration of which is equal to the Measurement Period, and where each time period is mutually exclusive with each other such time period;
- $Total\ Consumption_{Tb}$ (in MWh) is the consumption of the relevant Eligible Fuel for the Site measured over each time period T_b;
- $Output_{Tb}$ is the number of units of output during each time period T_b; and
- n is the number of time periods, T_b, where n must be at least 1.

Step (2C) Calculate *Variable Baseline* (in MWh / unit of output):

$$Variable\ Baseline = \{\sum_{T=1}^{n} Variable\ Consumption_{Tb}\} / n$$

Step (2D) Calculate *Baseline Variability* (in MWh / unit of output), which is the unexplained variance in the baseline, as follows:

If n > 2:

$$Baseline\ Variability = (maximum\ Variable\ Consumption_{Tb} - minimum\ Variable\ Consumption_{Tb}) / 2$$

Where:

- $maximum\ Variable\ Consumption_{Tb}$ is the maximum value of $Variable\ Consumption_{Tb}$ over n time periods T_b; and
- $minimum\ Variable\ Consumption_{Tb}$ is the least value of $Variable\ Consumption_{Tb}$ over n time periods T_b.

If $n \leq 2$:

Baseline Variability = 10% of *Variable Baseline*

Step (2E) Calculate *Reduced Consumption* (in MWh) for the time period T_a (after the Implementation Date) for which the Accredited Certificate Provider seeks to create Energy Savings Certificates as follows:

$$Reduced\ Consumption = (Output_{Ta} \times Variable\ Baseline + Fixed\ Consumption) - Total\ Consumption_{Ta}$$

Where:

- T_a denotes a time period, after the Implementation Date, the duration of which is equal to the *Measurement Period*;
- $Total\ Consumption_{Ta}$ (in MWh) is the consumption of the relevant Eligible Fuel for the Site measured over a time period T_a; and
- $Output_{Ta}$ is the number of units of output during the time period T_a.

Step (2F) Calculate the *Confidence Factor* as follows:

$$Confidence\ Factor = 1 - (Baseline\ Variability / Variable\ Baseline)$$

Step (2G) Calculate relevant *Energy Savings* (in MWh) for each time period T_a for which the Accredited Certificate Provider seeks to create Energy Savings Certificates as follows:

$$Energy\ Savings = Reduced\ Consumption \times Confidence\ Factor$$

Where:

Energy Savings means the Energy Savings expression for the relevant fuel *f* defined in **Table 7A.1**.

Step (3) Ensure net *Energy Savings* are non-negative.

After determining Energy Savings for each relevant Eligible Fuel, if the result of **Equation 1** is a negative number, then Energy Savings = 0.

8.6 Baseline unaffected by output

Note: This Metered Baseline Method is most appropriate where consumption is not linked to output of the End-User Equipment subject to the energy savings activity. To use this method the output of the End-User Equipment should not be affected by temperature or other standard normalisation variables.

8.6.1 The Energy Savings for an Implementation may be calculated using **Method 2**, provided that:

(a) the consumption of all energy sources for the Site is independent of output; and

(b) the *Baseline* is calculated using data from periods immediately preceding the Implementation Date, to a maximum duration of 5 years, and excluding any periods that are not representative of long-term Site consumption due to factors including plant shutdown or major maintenance. Where this is not possible, due to data unavailability or other reasons, a baseline may be set using other periods acceptable to the Scheme Administrator.

(c) for Implementations that affect consumption of more than one Eligible Fuel, that Energy Savings are calculated for each of those Eligible Fuels, even if negative.

8.6.2 The Implementation Date is the earlier of the start date of the first Measurement Period that occurs after the end of the last period T_b referred to in Method 2 or the date on which the reduction of energy consumption commenced due to the Implementation.

8.6.3 The Energy Saver is the person who is liable (contractually or otherwise) to pay for the energy consumption at the Site at the Implementation Date.

8.6.4 For the purposes of clause 34 of Schedule 4A of the Act, Energy Savings calculated under this clause 8.6 are taken to have occurred on the last date of the Measurement Period.

Method 2 – Baseline unaffected by output

Step (1) Select a *Measurement Period* acceptable to the Scheme Administrator, that will be the duration of time over which all measurements in this method will be taken and that is:

(a) a minimum of one day and a maximum of one year; and

(b) if there is a regular cycle to the consumption of energy on the Site, an integer multiple of the period of the respective cycle.

Step (2) Determine *Energy Savings* by completing Steps (2A) to (2E) for each Eligible Fuel, and for each time period T_a by reference to which the Accredited Certificate Provider seeks to create Energy Savings Certificates by repeating Steps (2C) to (3) for each Eligible Fuel for each such period.

Step (2A) Calculate *Baseline* (in MWh) as follows:

$$Baseline = \{\sum_{T=1}^{n} Total\ Consumption_{Tb}\} / n$$

Where:

- T_b denotes a time period, before the Implementation Date, the duration of which is equal to the Measurement Period, and where each time period is mutually exclusive with each other such time period
- $Total\ Consumption_{Tb}$ (in MWh) is the consumption of the relevant Eligible Fuel for the Site measured by metering that consumption over each time period T_b; and
- n is the number of time periods, T_b, where n must be at least 1.

Step (2B) Calculate *Baseline Variability* (in MWh), which is the variance in the baseline, as follows:

If n > 1:

Baseline Variability = (*maximum Total Consumption*$_{Tb}$ – *minimum Total Consumption*$_{Tb}$) / 2

Where:

- *maximum Total Consumption*$_{Tb}$ is the maximum value of *Total Consumption*$_{Tb}$ over n time periods T_b*; and*
- *minimum Total Consumption*$_{Tb}$ is the least value of *Total Consumption*$_{Tb}$ over n time periods T_b

If n = 1:

Baseline Variability = 10% of *Baseline*

Step (2C) Calculate *Reduced Consumption* (in MWh) for the time period T_a (after the Implementation Date) for which the Accredited Certificate Provider seeks to create Energy Savings Certificates as follows:

$$Reduced\ Consumption = Baseline - Total\ Consumption_{Ta}$$

Where:

- T_a denotes a time period, after the Implementation Date, the duration of which is equal to the Measurement Period; and
- $Total\ Consumption_{Ta}$ (in MWh) is the consumption of the relevant Eligible Fuel for the Site measured over a time period T_a

Step (2D) Calculate *Confidence Factor* as follows:

Confidence Factor = 1 – (*Baseline Variability* / *Baseline*)

Step (2E) Calculate the relevant Energy Savings (in MWh) for each time period T_a for which the Accredited Certificate Provider seeks to create Energy Savings Certificates as follows:

- *Energy Savings = Reduced Consumption × Confidence Factor*

Where:

- *Energy Savings* means the Energy Savings expression for the relevant fuel *f* defined in **Table 7A.1**.

Step (3) Ensure net *Energy Savings* are non-negative.

After determining Energy Savings for each relevant Eligible Fuel, if the result of **Equation 1** is a negative number, then Energy Savings = 0.

8.7 Normalised baseline

Note: This Metered Baseline Method normalises energy consumption for a Site to remove explainable variation from the baseline, for example, adjusting for variations in ambient conditions or variations in input characteristics. The factors chosen for the normalisation must cause the variability (that is the subject of removal) and not be the result of spurious correlations.

Option C of the IPMVP can be used for guidance as to the normalisation of baselines, particularly for complex cases.

8.7.1 The Energy Savings for an Implementation may be calculated using **Method 3**, provided that:

(a) the *Normalisation Variables* in respect of which the *Total Consumption* is normalised are variables corresponding to the specific activities that are a reason for change in *Total Consumption*; and

(b) the Normalised Baseline is calculated using data from periods immediately preceding the Implementation Date, to a maximum duration of 5 years, and excluding any periods that are not representative of long-term Site consumption due to circumstances such as plant shutdown or major maintenance. Where this is not possible, due to data unavailability or other reasons, a baseline may be set using other periods acceptable to the Scheme Administrator.

(c) for Implementations that affect consumption of more than one Eligible Fuel, that Energy Savings are calculated for each Eligible Fuel, even if negative.

8.7.2 The Implementation Date is the earlier of the start date of the first Measurement Period that occurs after the end of the last period T_b referred to in Method 3 or the date on which the reduction of energy consumption commenced due to the Implementation.

8.7.3 The Energy Saver is the person who is liable (contractually or otherwise) to pay for the energy consumption at the Site at the Implementation Date.

8.7.4 For the purposes of clause 34 of Schedule 4A of the Act, Energy Savings calculated under this clause 8.7 are taken to have occurred on the last date of the Measurement Period.

Method 3 – Normalised baseline

Step (1) Select a *Measurement Period* acceptable to the Scheme Administrator, that will be the duration of time over which all measurements in this method will be taken and that is:

(a) a minimum of one day and a maximum of one year; and

(b) if there is a regular cycle to the consumption of energy on the Site, an integer multiple of the period of that cycle.

Step (2) Determine Energy Savings by completing Steps (2A) to (2F) for each Eligible Fuel and for each time period T_a by reference to which the Accredited Certificate Provider seeks to create Energy Savings Certificates, by repeating Steps (2D) to (3) for each Eligible Fuel for each such period.

Step (2A) Calculate *Normalised Consumption*$_{Tb}$ (in MWh) for n time periods T_b by normalising the *Total Consumption*$_{Tb}$ to determine the consumption that would have occurred for period T_b had the conditions at time T_a existed, using:

(a) a set of normalisation coefficients, which are one or more coefficients calculated to account for the variation in *Total Consumption*$_{Tb}$ per unit of change for each corresponding normalisation variable used in Step(2A)(b); and

(b) a set of values, which are the difference between the values of the normalisation variables for each time period T_b, and the values of the normalisation variables for one time period T_a, determined by measurements or other data sources.

Where:

- T_b denotes a time period, before the Implementation Date, the duration of which is equal to the Measurement Period, and where each time period is mutually exclusive with each other such time period
- T_a denotes a time period, after the Implementation Date, the duration of which is equal to the Measurement Period
- *Total Consumption*$_{Tb}$ (in MWh) is the consumption of an Eligible Fuel for the Site measured over each time period T_b
- n is the number of time periods, T_b, where n must be at least 1; and
- *Normalisation Variables* are the variables in respect of which the *Total Consumption*$_{Tb}$ is normalised and must correspond to factors that are a reason for change in *Total Consumption*$_{Tb}$

Step (2B) Calculate *Normalised Baseline* (in MWh) as follows:

$$\textit{Normalised Baseline} = \{\sum_{T=1}^{n} \textit{Normalised Consumption}_{Tb}\} \ / \ \text{n}$$

Step (2C) Calculate *Baseline Variability* (in MWh), which is the unexplained variance in the baseline, as follows:

If n > 1:

Baseline Variability = (*maximum Normalised Consumption*$_{Tb}$ – *minimum Normalised Consumption*$_{Tb}$) / 2

Where:

- *maximum Normalised Consumption*$_{Tb}$ is the maximum value of *Normalised Consumption*$_{Tb}$ over n time periods *Tb*; and
- *minimum Normalised Consumption*$_{Tb}$ is the least value of *Normalised Consumption*$_{Tb}$ over n time periods *Tb*

If n = 1:

Baseline Variability = 10% of *Normalised Baseline*

Step (2D) Calculate *Reduced Consumption* (in MWh) for the time period T_a (after the Implementation Date) for which the Accredited Certificate Provider seeks to create Energy Savings Certificates, as follows:

Reduced Consumption = Normalised Baseline – Total Consumption$_{Ta}$

Where:

- *Ta* denotes a time period, after the Implementation Date, the duration of which is equal to the Measurement Period; and
- *Total Consumption*$_{Ta}$ (in MWh) is the consumption of the relevant Eligible Fuel for the Site over a time period *Ta*

Step (2E) Calculate *Confidence Factor*:

Confidence Factor = 1 – (*Baseline Variability* / *Normalised Baseline*)

Step (2F) Calculate the relevant Energy Savings (in MWh) for each time period T_a for which the Accredited Certificate Provider seeks to create Energy Savings Certificates as follows:

Energy Savings = Reduced Consumption × *Confidence Factor*

Where:

- *Energy Savings* means the Energy Savings expression for the relevant fuel *f* defined in **Table 7A.1**.

Step (3) Ensure net *Energy Savings* are non-negative:

After determining Energy Savings for each relevant Eligible Fuel, if the result of **Equation 1** is a negative number, then Energy Savings = 0.

8.8 NABERS baseline

8.8.1 The Energy Savings for an Implementation may be calculated using **Method 4** for a NABERS Building, provided that:

(a) the NABERS Rating is calculated using one of the following NABERS tools:

(i) NABERS for Offices;

(ii) NABERS for Hotels;

(iii) NABERS for Shopping Centres;

(iv) NABERS for Data Centres;

(v) NABERS for Hospitals;

(vi) NABERS for Apartment Buildings;

(vii) NABERS for Residential Aged Care;

(viii) NABERS for Retirement Living;

(ix) NABERS for Warehouses;

(x) NABERS for Cold Storage;

(xi) NABERS for Schools; or

(xii) NABERS for Retail Stores;

(b) the NABERS Rating excludes any GreenPower in accordance with clause 5.4(d);

(c) the NABERS Rating meets the eligibility criteria applied in clause 8.8.3;

(d) all sources of on-site electricity generation have been identified; and

(e) all electricity generated from sources of On-site Unaccounted Electricity (as referred to in Method 4) has been metered and recorded over the Rating Period.

8.8.2 For the purposes of this clause 8.8:

(a) the NABERS Rating is a current NABERS rating that will be used to calculate Energy Savings;

(b) the Historical Baseline NABERS Rating is a previous NABERS Rating for the same NABERS Building, and is used for Calculation Method 2 at Step 2 of Method 4;

(c) the Rating Period is the time over which measurements were taken to establish the NABERS Rating or the Historical Baseline NABERS Rating for the NABERS Building;

(d) the Current Rating Year is the year for which Energy Savings Certificates will be created, and is the year that the Rating Period ended for the NABERS Rating;

(e) the Baseline Rating Year is the year that the Rating Period ended for the Historical Baseline NABERS Rating; and

(f) the forward creation of Energy Savings Certificates in respect of Energy Savings for an Implementation must be calculated using Calculation Method 2 at Step 2 of Method 4.

8.8.3 The NABERS Rating must:

(a) if using Calculation Method 1:

(i) exceed the Benchmark NABERS Rating from Table A20 of Schedule A by at least 0.5 stars; and

(ii) be the first NABERS Rating for the building; and

(iii) not be obtained to comply with the Commercial Building Disclosure Program, or a Development Approval.

(b) exceed the Historical Baseline NABERS Rating by at least 0.5 stars if using Calculation Method 2.

8.8.4 When calculating a Benchmark NABERS Rating using Calculation Method 2 at step 2 of Method 4:

(a) the Benchmark NABERS Rating can only be calculated using a fixed Historical Baseline NABERS Rating which was calculated no more than 7 years before the end date of the Current Rating Year; or

(b) if this Calculation Method is to be used for Additional Energy Savings and the fixed Historical Baseline NABERS Rating does not meet the requirements of clause 8.8.4(a), it must be reset using a previous NABERS Rating that is at least 7 years later than the end date of the Rating Period for the previous fixed Historical Baseline NABERS Rating;

(c) the Historical Baseline NABERS Rating must meet the ‘similar configuration’ criteria that has been determined by the Scheme Administrator which is listed in the NABERS Baseline Method Guide.

8.8.5 The Implementation Date is the end date of the first Rating Period for which Energy Savings will be calculated under clause 8.8.7.

8.8.6 The Energy Saver is:

(a) the person whose name is identified on the NABERS Rating certificate, or

(b) the building owner or manager of the building or buildings identified on the NABERS Rating certificate if the person’s name is not identified on the NABERS Rating certificate, as issued by the NABERS National Administrator, in respect of the NABERS Rating.

Note: An example of the building owner includes the Owners Corporation for apartment buildings.

8.8.7 For the purposes of clause 34 of Schedule 4A of the Act, Energy Savings are taken to occur on the date that the Scheme Administrator determines that the relevant NABERS Rating was completed.

8.8.8 Energy Savings Certificates cannot be created for a NABERS Rating more than twelve months after the end of the Rating Period applicable to that NABERS Rating.

8.8.9 The requirements of clauses 6.8(h) and 6.8(i) do not apply in relation to Energy Savings Certificates for Energy Savings calculated in accordance with clause 8.8.

8.8.10 When calculating Energy Savings using Calculation Method 2 at step 5 of Method 4:

(a) The Maximum Time Period for Forward Creation of Energy Savings Certificates in respect of Energy Savings for an Implementation calculated using Calculation Method 2 at step 5 of Method 4 is 3 years;

(b) The Benchmark NABERS Rating can only be calculated using a fixed Historical Baseline NABERS Rating with the end date of no more than 15 months before the end date of the NABERS Rating;

(c) NABERS Rating of the same value can only be used once to set a fixed Historical Baseline NABERS Rating for a NABERS Building. A lower Rating cannot be used as a new fixed Historical Baseline NABERS Rating in the future.

8.8.11 When calculating Energy Savings after forward creation:

(a) In years 2 to 7, Energy Savings for annual creation or top-up must be calculated at Calculation Method 2 at step 4 of Method 4 using the Benchmark NABERS Rating calculated at step 2 of Method 4. When calculating the Benchmark NABERS Rating, the Historical Baseline NABERS Rating established in accordance with clause 8.8.10 (b) must be used; and

(b) If the fixed Historical Baseline NABERS Rating is used for the purposes of Calculation Method 2 at steps 4 and 5 of Method 4, it must be reset no later than 7 years after the end date of the fixed Historical Baseline NABERS Rating.

8.8.12 Top-up certificate creation

Accredited Certificate Providers may create new Energy Savings Certificates in respect of Additional Energy Savings which have been calculated using Calculation Method 2 at step 4 of Method 4 for one or more Rating Periods for the Implementation, according to the following:

(a) the term 'Counted Energy Savings' in Calculation Method 2 at step 4 of Method 4 is taken to be the sum of total Electricity Savings and Gas Savings for which Energy Savings Certificates have previously been created for the Implementation, for each Rating Year for the relevant Implementation.

Method 4 – NABERS Benchmark

Step 1 – Calculate Measured Electricity Consumption and Measured Gas Consumption

Using the measurements taken to establish the NABERS Rating, and other measurements taken as necessary, calculate total energy consumption for the NABERS Building as follows:

Measured Electricity Consumption (MWh)= NABERS Electricity + On-site Unaccounted Electricity

Measured Gas Consumption (MWh) = NABERS Gas

Where:

- *NABERS Electricity*, in MWh, is the electricity purchased or imported from the Electricity Network and accounted for in the NABERS Rating, including electricity purchased as GreenPower; and
- *On-site Unaccounted Electricity*, in MWh, is electricity generated on-site from energy sources which have not been accounted for in the NABERS Rating, including electricity generated from photovoltaic cells or Gas generators fed from on-site Biogas sources, but excluding Gas generators where the imported Gas has been accounted for in the NABERS Rating; and
- *NABERS Gas,* in MWh, is the total of the Gas accounted for in the NABERS Rating.

Step 2 – Calculate Benchmark NABERS Rating

Calculate the Benchmark NABERS Rating, by using either:

(a) Calculation Method 1: Look up the Benchmark NABERS Rating in **Table A20** of Schedule A which corresponds to the relevant Current Rating Year, NABERS Rating tool and building category; or

(b) Calculation Method 2: Calculate the Benchmark NABERS Rating based on a Historical Baseline NABERS Rating as follows:

Benchmark NABERS Rating = Historical Baseline NABERS Rating + Annual Rating Adjustment × (Current Rating Year – Baseline Rating Year)

Where:

- *Historical Baseline NABERS Rating* is as defined in clause 8.8.2 and meets the requirements set out in clause 8.8.4
- *Annual Rating Adjustment* is the amount by which average NABERS Ratings increase each year and is the value in **Table A21** of Schedule A which corresponds to the relevant NABERS Rating tool and building category; and
- *Baseline Rating Year* is as defined in clause 8.8.2(e)

Step 3 – Calculate Benchmark Electricity Consumption and Benchmark Gas Consumption

Benchmark Electricity Consumption is the electricity consumption that would be required for that same NABERS Building to achieve the *Benchmark NABERS Rating* over the Rating Period, assuming the same breakdown of energy consumption. It is the electricity component of maximum allowable energy consumption, converted to MWh.

Benchmark Gas Consumption is the Gas consumption that would be required for that same NABERS Building to achieve the Benchmark NABERS Rating over the Rating Period, assuming

the same breakdown of energy consumption. It is the Gas component of maximum allowable energy consumption, converted to MWh.

Calculate the *Benchmark Electricity Consumption* and *Benchmark Gas Consumption* in MWh by using the NABERS Reverse Calculator for the relevant NABERS method, setting the target star rating to the *Benchmark NABERS Rating*, and giving all other input parameters the same value as for the actual NABERS Rating over that Rating Period, including:

- Rating type;
- Building information (e.g. Rated Area, number of computers); and
- Percentage breakdown of energy consumption (on an energy use basis in MWh).

If necessary for use with the relevant NABERS Reverse Calculator, round down the *Benchmark NABERS Rating* to the nearest half or whole star increment.

Next use Step 4 or Step 5

Step 4 – Calculate Energy Savings for annual creation or top-up

Calculate *Electricity Savings* and *Gas Savings*, in MWh as follows:

$$Electricity\ Savings_{NRYi} = (Benchmark\ Electricity\ Consumption - Measured\ Electricity\ Consumption) - Counted\ Energy\ Savings_{NRYi} + Electricity\ Savings_{NRYi-1}$$

$$Gas\ Savings_{NRYi} = Benchmark\ Gas\ Consumption - Measured\ Gas\ Consumption - Counted\ Energy\ Savings_{NRYi} + Gas\ Savings_{NRYi-1}$$

Where:

- *NRYi* is the NABERS Rating Year;
- *NRYi-1* is the NABERS Rating Year immediately preceding *NRYi*;
- the term $Electricity\ Savings_{NRYi-1}$ or $Gas\ Savings_{NRYi-1}$ should only be included in each formula if:
  - calculating from year 3 onwards of using the fixed Historical Baseline NABERS Rating; and
  - the term is a negative number;
- $Counted\ Energy\ Savings_{NRYi}$ is the:
  - total Electricity Savings for which Energy Savings Certificates have previously been created for the Implementation for the Rating Year *i* if calculating Electricity Savings; or
  - total Gas Savings for which Energy Savings Certificates have previously been created for the Implementation for the Rating Year *i* if calculating Gas Savings.

Step 5 – Calculate Energy Savings with forward creation

Calculate *Electricity Savings* and *Gas Savings*, in MWh as follows:

$$Electricity\ Savings = \sum_{NRYi} (Benchmark\ Electricity\ Consumption - Measured\ Electricity\ Consumption_{NRYi})$$

$$Gas\ Savings = \sum_{NRYi} (Benchmark\ Gas\ Consumption - Measured\ Gas\ Consumption_{NRYi})$$

Where:

- *NRYi* is the NABERS Rating Year;
- the summation is over each NABERS Rating Year *i* over the *Maximum Time Period for Forward Creation* of the Electricity Savings or Gas Savings;
- *Maximum Time Period for Forward Creation* is determined by clause 8.8.10(a);
- The value of *Measured Electricity Consumption*$_{NRYi}$ is the same for all NABERS Rating Years and is calculated at Calculation Method 2 at step 1 of Method 4 for NABERS Rating Year 1 when using the fixed Historical Baseline NABERS Rating;
- The value of *Measured Gas Consumption*$_{NRYi}$ is the same for all NABERS Rating Years and is calculated at Calculation Method 2 at step 1 of Method 4 for NABERS Rating Year 1 when using the fixed Historical Baseline NABERS Rating.

8.9 Aggregated Metered Baseline

Note: The Aggregated Metered Baseline sub-method allows for Energy Savings to be calculated on the basis of measured savings across a group of electricity and/or natural gas customers, using statistical techniques. To use this method, the Accredited Certificate Provider must engage an Accredited Statistician to perform the randomised Site allocation and validate the statistical methods prior to the Implementation Date. This method may be used for any Recognised Energy Saving Activity, but it is best suited to those activities where:

- Energy Savings are small on a Site by Site basis; and/or
- Energy Savings can vary greatly from Site to Site; and/or
- there is insufficient evidence that the Recognised Energy Saving Activity will not be reversed.

This method requires a group of energy customers (the Population) to be assigned without bias into a Treatment Group and a Control Group. The Treatment Group is offered goods or services that are designed to deliver Energy Savings over the Implementation Period. The Treatment is the offering of goods and services (and any subsequent provision, engagement and promotion activities) and is not just the provision of goods and services. The Control Group is not offered the Treatment, but instead is used to estimate what the energy consumption of the Treatment Group would have been in the absence of the Treatment.

8.9.1 The Energy Savings for an Implementation may be calculated using **Method 5.1** provided that all of the conditions in clauses 8.9.2 to 8.9.11 are met.

8.9.2 For each Implementation, a number of Sites must be identified and assigned to a Population, and every Site in that Population must be allocated to either a Treatment Group or a Control Group prior to the Implementation Date. Additionally:

(a) a Site may choose to join the Population, but once in the Population, must be allocated to the Treatment Group or the Control Group using an Unbiased Selection Method;

(b) Prior to allocating the Site to the Treatment Group or the Control Group, the Accredited Certificate Provider must:

(i) choose for each Site that is or will be in the Population, whether to measure the consumption of electricity or natural gas (or both), subject to clause 8.9.2(f)(ii); and

(ii) not decide which energy source(s) are included for measurement based on whether the Site is subsequently allocated in the Treatment Group or the Control Group; and

(iii) where the Population includes Sites that have measurements of different energy source combinations, ensure that the Treatment Group size to Control Group size ratio is, as close as possible, the same for each of the energy source combinations.

(c) persons at Sites must not be informed explicitly that they have been allocated to the Treatment Group or the Control Group;

(d) once a Site has been allocated to the Treatment Group and the Implementation Date has occurred, persons managing End-User Equipment at that Site may be offered a choice as to whether they wish to receive the goods and services component of the Treatment;

(e) if a Site chooses not to receive the goods and services component of the Treatment, that Site must be retained in the Treatment Group for measurement purposes, except where clauses 8.9.2(g) and 8.9.2(h) apply;

(f) the Population should not be targeted with the offer of goods and services that;

(i) are aimed at increasing electricity or natural gas use with the intent of creating a greater difference in electricity or natural gas use between the Control Group and Treatment Group; or

(ii) promote switching from using grid electricity to natural gas, or vice versa, if both grid electricity and natural gas consumptions is not measured at all Sites in the Population; or

(iii) promote switching to a non-renewable energy source other than grid electricity.

(g) a Site must be removed from the Population, and hence Treatment Group or Control Group, if Measured Electricity Consumption or Measured Gas Consumption data or both, as per Clause 8.9.2(b)(i), are not available for that Site during the Implementation Period;

(h) all Sites with Measured Electricity Consumption or Measured Gas Consumption data or both, as per Clause 8.9.2(b)(i), for only part of an Implementation Period due to Attrition, must be:

(i) removed from the Population; or

(ii) included in the Population until the last date Measured Electricity Consumption or Measured Gas Consumption data or both, are available for a given Site; and

(i) if data for a Pre-Implementation Period are used, the Accredited Certificate Provider must specify prior to the Implementation Date a period for which the data are available for the total Population.

8.9.3 Measurements of electricity consumption under this method must use Measured Electricity Consumption data for each Site in the Population, where the Measured Electricity Consumption for a Measurement Period means the metered amount of electricity used by a Site:

(a) as determined by the metering data held by the Electricity Retailer or Network Service Provider for that Site, pro-rated across the period, as measured and estimated in accordance with the provisions of the National Energy Retail Rules under the *National Energy Retail Law* (NSW), and in accordance with the provisions of the *Electricity Supply (General) Regulation 2014*; or

from a metering arrangement compliant with the accuracy requirements of National Measurement Institute document M6 (Electricity Meters), or another metering benchmark accepted by the Scheme Administrator, provided that:

(i) all metering devices are installed without bias as to whether that Site is in the Treatment Group or Control Group, and by parties who have no knowledge of whether each Site is part of the Treatment Group or Control Group; and

(ii) the reading of metering devices and checking, measurement, estimation and pro-rating of data is done without bias as to whether that Site is in the Treatment Group or Control Group, and by parties who have no knowledge of whether each Site is part of the Treatment Group or Control Group.

8.9.3A Measurements of natural gas consumption under this method must use Measured Gas Consumption data for each Site in the Population, where the Measured Gas Consumption for a Measurement Period means the metered amount of natural gas used by a Site:

(a) as determined by the metering data held by the Gas Retailer or gas network operator for that Site, pro-rated across the period, as measured and estimated in accordance with the provisions of the National Energy Retail Rules under the *National Energy Retail Law* (NSW), and in accordance with the provisions of the *Gas Supply (Consumer Safety) Regulation 2012*; or

(b) from a metering arrangement compliant with the accuracy requirements of National Measurement Institute document R137 (Gas Meters), or another metering benchmark accepted by the Scheme Administrator, provided that:

(i) all metering devices are installed without bias as to whether that Site is in the Treatment Group or Control Group, and by parties who have no knowledge of whether each Site is part of the Treatment Group or Control Group; and

(ii) the reading of metering devices and checking, measurement, estimation and pro-rating of data is done without bias as to whether that Site is in the Treatment Group or Control Group, and by parties who have no knowledge of whether each Site is part of the Treatment Group or Control Group.

8.9.4 For the purposes of calculating Energy Savings, the Measured Electricity Consumption or Measured Gas Consumption data or both, for a given Population must be recorded over one or more Measurement Periods, where:

(a) Implementation Periods and Pre-Implementation Periods are both Measurement Periods;

(b) the Implementation Period and the Pre-Implementation Period do not have to be immediately sequential in time;

(c) Measurement Periods must not overlap; and

(d) each Implementation Period must be at least 3 months and no more than 15 months in length.

8.9.4A Measured Energy Consumption is calculated for each Site in the Population in accordance with **Equation 8.9.1**.

Equation 8.9.1

$$Measured\ Energy\ Consumption = Measured\ Electricity\ Consumption + Measured\ Gas\ Consumption \times \frac{Gas\ Certificate\ Conversion\ Factor}{Electricity\ Certificate\ Conversion\ Factor}$$

Where:

- *Certificate Conversion Factors* are as specified in clauses 33(1) and 33A of Schedule 4A of the Act and clause 37A of the *Electricity Supply (General) Regulation 2014*.

8.9.5 For the purposes of clause 34 of Schedule 4A of the Act, Energy Savings for each Implementation are taken to have occurred on the last date of that Implementation Period.

8.9.6 Where required, the Energy Savings for the Implementation will be the sum of estimated Energy Savings for all Sites in a Treatment Group for each Implementation Period.

8.9.7 The records that must be kept of the method, data and assumptions used to calculate Energy Savings under Method 5.1 must include:

(a) the Addresses of the Sites in the Population and whether they are allocated to the Treatment Group or the Control Group;

(b) evidence that Sites were assigned to the Population and were allocated to the Treatment Group and Control Group in accordance with clause 8.9.2;

(c) information on metering arrangements used according to clause 8.9.3 and 8.9.3A;

(d) information on the Treatment offered to the Treatment Group;

(e) confirmation in writing (together with reasoning) from an Accredited Statistician prior to the Implementation Date, that the:

(i) Accredited Statistician has randomly allocated Sites from the Population into the Control Group and the Treatment Group;

(ii) analysis method used to calculate the observed Energy Savings in Step 2 of Method 5.1 has been selected and is valid;

(iii) explanatory variables, including any interactions between them, have been documented if Method 5.4 is used;

(iv) lengths of the Implementation Period and the Pre-Implementation Period (if applicable) have been determined and documented;

(f) information on Sites removed from the Population in accordance with clauses 8.9.2(g) and 8.9.2(h), including reasoning for each Site's removal;

(g) documentation of reproducible steps and log files for the calculations performed; and

(h) any additional requirements as Published, from time to time, by the Scheme Administrator.

8.9.8 The Accredited Certificate Provider can only modify the methods in clause 8.9.7(e) for subsequent Implementation Periods. If modified, the Accredited Certificate Provider must obtain from an Accredited Statistician prior to the Implementation Date of the subsequent Implementation Periods, a new verification in writing.

8.9.9 The Implementation Date is the start date of the Implementation Period.

8.9.10 The Energy Saver is the person who holds the Measured Electricity Consumption or Measured Gas Consumption data or both, for all Sites in a Population in accordance with clause 8.9.3 or 8.9.3A.

8.9.11 For the purposes of this clause 8.9, the requirements under clause 6.8 are as Published by the Scheme Administrator for the purposes of this calculation method.

Method 5.1

Calculation of Energy Savings under the Aggregated Metered Baseline sub-method

Step (1) For each Population, adjust the Control Group and the Treatment Group for Attrition at the end of each Implementation Period, in accordance with clause 8.9.2. The number of Sites in the Treatment and Control Groups will be designated N_T and N_C respectively.

Step (2) Calculate the *Observed Energy Savings,* $ES_{observed}$, in MWh, over the Implementation Period using one of the following methods:

(a) Method 5.2 (Time-Aggregated Energy Consumption During the Implementation Period); or

(b) Method 5.3 (Time-Aggregated Energy Consumption During the Implementation and Pre-Implementation Periods - Difference in Differences); or

(c) Method 5.4 (Regression Modelling).

Step (3) The Scheme Administrator may provide the Accredited Certificate Provider with an estimate of *Uplift Energy Savings*, ES_{uplift}, over the Implementation Period using:

(a) Method 5.5 (Estimation of Uplift Energy Savings); or

(b) another method as Published by the Scheme Administrator.

If the Scheme Administrator does not provide an estimate of *Uplift Energy Savings*, the value of *Uplift Energy Savings* must be taken to be zero.

Unless otherwise notified by the Scheme Administrator, the Accredited Certificate Provider must provide the Scheme Administrator with data required to estimate *Uplift Energy Savings*, including the Addresses of Sites in the Treatment Group and Control Group; the Implementation Period data; and any other data, as requested by the Scheme Administrator.

For Sites with Measured Electricity Consumption or Measured Gas Consumption data or both, as per Clause 8.9.2(b)(i), for part of an Implementation Period due to Attrition, the date of Attrition is considered the last date of the Implementation Period for those given Sites.

Step (4) Calculate *Electricity Savings* in MWh, by subtracting the effect of *Uplift Energy Savings* from the *Observed Energy Savings*, ensuring the result is non-negative:

$$Electricity\ Savings = \max\left(0, ES_{observed} - ES_{uplift}\right)$$

$$Gas\ Savings = 0$$

Method 5.2

Calculation of *Observed Energy Savings* from Time-Aggregated Energy Consumption During the Implementation Period

Step (1) Calculate the mean daily energy use of the Treatment Group (E_T) over the Implementation Period:

$$E_T = {(\sum_s E_s)}/{(\sum_s D_s)}$$

where:

- s indexes over Sites in the Treatment Group
- E_s is the Measured Energy Consumption for Site (s) in the Treatment Group over the Implementation Period, calculated in accordance with clause 8.9.4A of this Rule; and
- D_s is number of days of Measured Energy Consumption at Site (s) in the Treatment Group over the Implementation Period

Step (2) Calculate the mean daily energy use of the Control Group (E_C) over the Implementation Period:

$$E_C = {(\sum_s E_s)}/{(\sum_s D_s)}$$

where:

- s indexes over Sites in the Control Group
- E_s is the Measured Energy Consumption for Site (s) in the Control Group over the Implementation Period, calculated in accordance with clause 8.9.4A of this Rule; and
- D_s is number of days of Measured Energy Consumption at Site (s) in the Control Group over the Implementation Period

Step (3) Using the Treatment Group measurements, the Control Group measurements and the standard error for the Control Group mean, perform the following hypothesis test:

$$H_0 : E_C \leq E_T$$

$$H_{alt} : E_C > E_T$$

Calculate $t = (E_C - E_T)/\left(sd * \sqrt{\frac{fpc_T}{N_T} + \frac{fpc_C}{N_C}}\right)$

Reject H_0 (and accept H_{alt}) if $t > T_{(p=0.95)}$

where:

- sd is the standard deviation of mean daily energy use at Sites in the Control Group in the Implementation Period, weighted by the number of days in the Implementation Period for which there is data about Measured Energy Consumption at Sites in the Control Group, as worked out using the formula

$$sd = \sqrt{\left\{\sum_s f_s * \left(\frac{E_s}{D_s} - E_C\right)^2\right\} * \frac{N_c}{N_c - 1}}$$

where:

f_s means the number of days in the Implementation Period for which there is data about Measured Energy Consumption at Site (s), as a proportion of the sum of all the days in the Implementation Period for which there is data about Measured Energy Consumption at Sites in the Control Group, as follows:

$$f_s = {}^{D_s}/_{(\sum_s D_s)}$$

- N_C is the number of Sites in the Control Group and N_T is number of Sites in the Treatment Group;
- $T_{(p=0.95)}$ is the value from standard T tables with $(N_C - 1)$ degrees of freedom. For degrees of freedom exceeding 2400 use the value of 1.6449. Note that 0.95 values of the T statistic are from the upper 5% points of the distribution;
- fpc_C is an optional finite population correction for estimating the Population mean from the Control Group, $fpc_C = (N - N_C)/(N - 1)$; and
- fpc_T is an optional finite population correction when using the Population mean to predict the Treatment Group mean, $fpc_T = (N - N_T)/(N - 1)$.

If able to reject H_0, proceed to step (4). Otherwise, E_C is taken to be less than or equal to E_T and $ES_{observed}$ is taken to be zero.

Step (4) Calculate the *Observed Energy Savings*, $ES_{observed}$, in MWh, over the Implementation Period:

$$ES_{observed} = (E_C - E_T) * \left(\sum_s D_s\right)$$

where:

- s indexes over Sites in the Treatment Group; and
- D_s is number of days of Measured Energy Consumption at Site(s) in the Treatment Group over the Implementation Period.

Method 5.3

Calculation of *Observed Energy Savings* from Time-Aggregated Energy Consumption During the Implementation and Pre-Implementation Periods – Difference in Differences

Step (1) Calculate the change in mean daily energy use (C_s) between the Implementation Period and the Pre-Implementation Period for each Site in the Population:

$$C_s = E_{s,i} - E_{s,p} * \left(\frac{D_{s,i}}{D_{s,p}}\right)$$

where:

- $E_{s,i}$ is the Measured Energy Consumption at each Site (s) over the Implementation Period, calculated in accordance with clause 8.9.4A of this Rule;
- $E_{s,p}$ is the Measured Energy Consumption at Site (s) over the Pre-Implementation Period, calculated in accordance with clause 8.9.4A of this Rule;
- $\left(\frac{D_{s,i}}{D_{s,p}}\right)$ corrects for minor differences in length of Implementation Period compared to Pre- Implementation Period due to leap year;
- $D_{s,i}$ is the number of days of over the Implementation Period for which there is data about Measured Energy Consumption at Site (s); and
- $D_{s,p}$ is the number of days in the Pre-Implementation Period and must cover the same period of time in a previous year as $D_{s,i}$.

Step (2) Calculate the change in mean daily energy use of the Treatment Group (C_T) between the Implementation Period and the Pre-Implementation Period:

$$\mathrm{C_T} = \frac{\sum_s C_s}{\sum_s D_{s,i}}$$

where:

- s indexes over Sites in the Treatment Group; and
- $D_{s,i}$ is the number of days over the Implementation Period for which there is data about Measured Energy Consumption at Site(s).

Step (3) Calculate the change in mean daily energy use of the Control Group (C_C) between the Implementation Period and the Pre-Implementation Period:

$$C_C = \frac{\sum_s C_s}{\sum_s D_{s,i}}$$

where:

- s indexes over Sites in the Control Group; and

$D_{s,i}$is the number of days over the Implementation Period for which there is data about Measured Energy Consumption at Site(s).

Step (4) Using the Treatment Group measurements, the Control Group measurements and the standard error for the Control Group mean difference, perform the following hypothesis test:

$H_0 : C_C \leq C_T$

$H_{alt} : C_C > C_T$

Calculate $t = (C_C - C_T) / \left(sd * \sqrt{\frac{fpc_T}{N_T} + \frac{fpc_C}{N_C}} \right)$

Reject H_0 (and accept H_{alt}) if $t > T_{(p=0.95)}$

where:

- sd is the standard deviation of change, between the Pre-Implementation Period and Implementation Period, in the mean daily energy use at Sites in the Control Group, weighted by the number of days in the Implementation Period for which there is data about Measured Energy Consumption at Sites in the Control Group, as worked out using the formula

$$\mathrm{sd} = \sqrt{\left\{ \sum_s \mathrm{f_s} * \left(\frac{\mathrm{C_s}}{\mathrm{D_{s,i}}} - \mathrm{C_C} \right)^2 \right\} * \frac{\mathrm{N_c}}{\mathrm{N_c} - 1}}$$

where:

$\mathrm{f_s}$ means the number of days in the Implementation Period for which there is data about Measured Energy Consumption at Site(s), as a proportion of the sum of all the days in the Implementation Period for which there is data about Measured Energy Consumption at Sites in the Control Group, as follows:

$$\mathrm{f_s} = D_{s,i} / \left(\sum_s D_{s,i} \right)$$

- $\mathrm{N_C}$ is number of Sites in the Control Group and $\mathrm{N_T}$ is number of Site(s) in the Treatment Group;

- $T_{(p=0.95)}$ is the value from standard *T* tables with $(N_C - 1)$ degrees of freedom. For degrees of freedom exceeding 2400 use the value of 1.6449. Note that 0.95 values of the T statistic are from the upper 5% points of the distribution;
- fpc_C is an optional finite population correction for estimating the Population mean from the Control Group, $fpc_C = (N - N_C)/(N - 1)$; and
- fpc_T is an optional finite population correction when using the Population mean to predict the Treatment Group mean, $fpc_T = (N - N_T)/(N - 1)$.

If able to reject H_0, proceed to step (5). Otherwise, C_C is taken to be less than or equal to C_T and $ES_{observed}$ is taken to be zero

Step (5) Calculate the *Observed Energy Savings*, $ES_{observed}$, in MWh, over the Implementation Period:

$$ES_{observed} = (C_C - C_T) * \left(\sum_s D_s\right)$$

where:

- s indexes over Site(s) in the Treatment Group; and
- $D_{s,i}$ is the number of days over the Implementation Period for which there is data about Measured Energy Consumption at Site(s).

Method 5.4

Calculation of *Observed Energy Savings* from Regression Modelling

Step (1) Calculate the mean daily energy use $\left(DE_{s,i}\right)$ for each Site in the Population for the Implementation Period:

$$DE_{s,i} = E_{s,i}/D_{s,i}$$

where:

- $E_{s,i}$ is the Measured Energy Consumption for Site(s) over the Implementation Period, calculated in accordance with clause 8.9.4A of this Rule; and
- $D_{s,i}$ is the number of days of Measured Energy Consumption at Site(s) over the Implementation Period

Step (2) Calculate the mean daily energy use $\left(\text{DE}_{\text{s,p}}\right)$ for each Site in the Population for the Pre-Implementation Period:

$$DE_{s,p} = E_{s,p}/D_{s,p}$$

where:

- $E_{s,p}$ is the Measured Energy Consumption for each Site(s) over the Pre-Implementation Period, calculated in accordance with clause 8.9.4A of this Rule; and
- $D_{s,p}$is the number of days of Measured Energy Consumption at Site(s) over the Pre-Implementation Period.

Step (3) Create the evaluation data set consisting of one observation for each Site in the Population containing $DE_{s,i}$, $DE_{s,p}$, T_s and other appropriate explanatory variables, where:

- T_s is a variable taking the value 1 if a Site(s) is in the Treatment Group and 0 if it is in the Control Group; and
- OtherVariables_s is the vector of other appropriate explanatory variables.

Step (3B) For cases where there are Sites with Measured Energy Consumption data for part of an Implementation Period due to Attrition, create another variable $W_{s,m}$, where:

- $W_{s,m}$ is a variable taking the value 1 if the Site(s) has Measured Energy Consumption during time period m and 0 otherwise. m = 1 … NTP; and
- NTP is the number of non-overlapping and exhaustive time periods for the implementation.
- The time periods are to be allocated so that each time period has (as close as is possible) the same number of Sites subject to Attrition during that period.

Step (4) Estimate the average treatment effect per day $(\hat{\beta})$ by estimating the following regression via Weighted Least Squares (WLS) and weighting by $D_{s,i}$:

$$DE_{s,i} = \alpha + \beta T_s + \delta DE_{s,p} + \sum \lambda_m W_{s,m} + \sum \gamma_k OtherVariables_{s,k} + \varepsilon_s$$

where:

- α is the intercept;
- β is the treatment effect;
- δ is the impact of Pre-Implementation Period energy consumption;
- λ_m accounts for time period (m) variation;
- γ_k is the effect of the kth other explanatory variable, k=1….K where K is the total number of other explanatory variables; and
- ε_s is the error term.

Step (5) Using the estimated treatment effect (denoted as $\hat{\beta}$) and its standard error perform the following hypothesis test:

H_0: $\hat{\beta} \geq 0$

H_{alt}: $\hat{\beta} < 0$

Calculate $t = \hat{\beta} / se(\hat{\beta})$

Reject H_0 (and accept H_{alt}) if $t < T_{(p=0.05)}$

where:

- $se(\hat{\beta})$ is the standard error of $\hat{\beta}$; and
- T(p=0.05) is the value from the standard T table with $N_T + N_C - (3 + K +$ NTP)-degrees of freedom. For degrees of freedom exceeding 2400 use the value of -1.6449. Note that 0.05 values of the T statistic are from the lower 5% points of the distribution.

A negative value for $\hat{\beta}$ indicates a reduction in energy usage. Therefore, if able to reject H_0, proceed to step (6). Otherwise, $\hat{\beta}$ is taken to be non-negative and ES_{observed} is taken to be zero.

Step (6) Calculate the *Observed Energy Savings*, $ES_{observed}$, in MWh, over the Implementation Period*:*

$$ES_{observed} = -\hat{\beta} * \left(\sum_s D_s \right)$$

where:

- s indexes over Sites in the Treatment Group; and
- D_s is the number of days of Measured Energy Consumption at Site(s) in the Treatment Group over the Implementation Period.

Method 5.5 - Estimation of *Uplift Energy Savings*

Step (1) Estimate the *Lifetime Energy Savings*, $LES_{s,a}$, from each *Other Activity (a)* implemented in each Site (s) in the Population, within the Implementation Period.

Where:

- *Other Activity* (*a)* means either:
    - any other Recognised Energy Saving Activity, apart from the Recognised Energy Saving Activity that is the subject of this calculation; or
    - an activity referred to in clauses 5.4(f) 5.4(g), or 5.4(i) of this Rule.

Step (2) Calculate the Energy Savings, $ES_{s,a}$, for each Site *s* due to each *Other Activity a* during the Implementation Period:

$$ES_{s,a} = \ LES_{s,a} * \left(\frac{Overlap_a}{Lifetime_a}\right)$$

where:

- $Lifetime_a$, in years, is the Lifetime of the Energy Savings for each *Other Activity (a)*, or 10 years if it is not defined in this Rule; and
- $Overlap_a$, in years, is the length of time of the Implementation Period that overlaps with the Lifetime of the Energy Savings for each *Other Activity (a)*.
- If the *Other Activity (a)* had one or more Energy Savings calculated using the Metered Baseline Method, then the Lifetime of the Energy Savings is the length of the Measurement Period of that calculation.
- The calculation of the duration of overlap must take account of Attrition of Sites.

Step (3) Calculate the average Energy Savings, $ES_{T,all\ Other\ Activities}$ and $ES_{C,all\ Other\ Activities}$, due to all *Other Activities* (*a)* for all Sites in the Treatment Group and Control Group respectively, over the Implementation Period:

$$ES_{T,all\ Other\ Activities} = \frac{\sum_{s\ in\ Treament\ Group,a} ES_{s,a}}{\mathrm{N_T}}$$

and

$$ES_{C,all\ Other\ Activities} = \frac{\sum_{s\ in\ Control\ Group,a} ES_{s,a}}{\mathrm{N_C}}$$

where:

- The summation is over all Sites (s) in the Treatment Group (for $\mathrm{ES_{T,all\ Other\ Activities}}$) and Control Group (for $\mathrm{ES_{C,all\ Other\ Activities}}$), respectively, and all Other Activities that overlap with the Implementation Period; and
- The $\mathrm{N_T}$ and $\mathrm{N_C}$ are the number of Sites in the Treatment Group and Control Group respectively for Implementation Period.

Step (4) Calculate the *Uplift Energy Savings*, ES_{uplift}, from *Other Activities* due to participation in the program:

$$ES_{uplift} = \left(ES_{T,all\ Other\ Activities} - ES_{C,all\ Other\ Activities}\right) * N_T$$

Step (5) Ensure the *Uplift Energy Savings*, ES_{uplift}, are non-negative:

$$ES_{uplift} = \max\left(0, ES_{uplift}\right)$$

9 Deemed Energy Savings Method

Note: The Deemed Energy Savings Method can be used for the replacement, installation, and delivery of common End-User Equipment such as lighting, refrigerators and electric motors.

9.1 Energy Savings for Implementations may be calculated in accordance with:

(a) (deleted);

(b) clause 9.4 (Commercial Lighting Energy Savings Formula);

(c) clause 9.4A (Public Lighting Energy Savings Formula);

(d) clause 9.5 (High Efficiency Motor Energy Savings Formula);

(e) clause 9.6 (Power Factor Correction Energy Savings Formula);

(f) clause 9.7 (Removal of Old Appliances), for the Activity Definitions set out in Schedule C;

(g) clause 9.8 (Home Energy Efficiency Retrofits), for the Activity Definitions set out in Schedules D and E; or

(h) clause 9.9 (Installation of High Efficiency Appliances for Businesses), for the Activity Definitions set out in Schedule F.

(i) (deleted).

9.2 For the purposes of clause 34 of Schedule 4A of the Act, where the Energy Savings for an Implementation are calculated using the Deemed Energy Savings Method in this clause 9, those Energy Savings are taken to occur on the Implementation Date.

9.2A Acceptable End-User Equipment

9.2A.1 Under the Deemed Energy Savings Method, Equipment Requirements apply to End-User Equipment. The Equipment Requirements are specified in clauses 9.4 to 9.9, and also include any additional Equipment Requirements (as Published from time to time by the Scheme Administrator) that apply to the relevant calculation method of this Rule.

9.2A.2 The Scheme Administrator may, on its own motion or on an application made under clause 9.2A.3, accept Products as meeting the Equipment Requirements referred to in clause 9 by:

(a) Publishing a detailed list identifying each Product;

(b) Publishing a reference to a list from a certifying body, along with any restrictions on that list;

(c) Publishing a requirement for labelling in accordance with a labelling scheme, along with any restrictions on that labelling; and/or

(d) Publishing a reference to a product register, as in force from time to time, published by a specified body, along with any restrictions on that product register - so long as the Scheme Administrator is satisfied that the requirements for listing a product on the product register are substantially the same as the relevant Equipment Requirements set out in clause 9 other than any additional Equipment Requirements published by the Scheme Administrator in accordance with clause 9.2A.1.

9.2A.3 Subject to clause 9.2A.4, any Accredited Certificate Provider (or other persons as Published by the Scheme Administrator), may apply to the Scheme Administrator to have a Product accepted as meeting the Equipment Requirements, provided that they:

(a) apply in a form and manner required by the Scheme Administrator;

(b) pay any fee required by the Scheme Administrator in respect of the investigation and determination of the application on a cost recovery basis and including an allowance for:

(i) the recovery by the Scheme Administrator of its costs in establishing, operating and maintaining the systems and databases required in connection with the assessment, acceptance and rejection of applications made under this clause 9.2A.3;

(ii) the exercise of the Scheme Administrator's powers under clauses 9.2A.2 and 9.2A.5; and

(iii) the payment and collection of fees under this clause 9.2A.3(b);

(c) identify the Product; and

(d) provide evidence that the Product meets all of the Equipment Requirements.

9.2A.4 The Scheme Administrator may limit the number of applications that may be made during a period under clause 9.2A.3, either in aggregate or by particular persons or classes of persons, by Publishing a notice that sets out that period and limit.

9.2A.5 The Scheme Administrator may, at any time, cease to accept a Product as meeting the Equipment Requirements, provided that it:

(a) notifies all Accredited Certificate Providers accredited for the relevant Recognised Energy Saving Activity of the change and the reason for the change, prior to the Product ceasing to be accepted for this purpose; and

(b) ensures that all Published lists reflect the change in a timely manner.

9.2A.5A The Scheme Administrator may accept or reject an application made under clause 9.2A.3.

9.2A.6 Without limiting clause 9.2A.5A, the Scheme Administrator may reject an application made under clause 9.2A.3 where the applicant has not provided additional information requested by the Scheme Administrator in support of that application within a timeframe Published by the Scheme Administrator.

9.3 (deleted)

9.4 **Commercial Lighting Energy Savings Formula**

Note: Discontinuation of the Commercial Lighting Energy Savings Formula sub-method

All Implementations under clause 9.4 must be complete on or before 31 March 2026 (see clause 9.4.1(j)).

All certificates arising from Implementations under clause 9.4 must also be created on or before 31 March 2026 (see clause 9.4.5).

All applications to have a Product accepted as meeting the CLESF Equipment Requirements must be made on or before 31 January 2026 (see clause 9.4.1(f))

9.4.1 The Energy Savings for an Implementation may be calculated using **Equations 6** and **9** and either **7** or **8**, provided that:

(a) the activity is a Lighting Upgrade of:

(i) Lighting for Roads and Public Spaces;

(ii) Traffic Signals; or

(iii) Building Lighting;

(b) the Lighting Upgrade meets or exceeds the relevant lighting standards for each upgrade, to the satisfaction of the Scheme Administrator;

(c) if the Lighting Upgrade is of Building Lighting, then each space, after implementation of the Lighting Upgrade must, to the satisfaction of the Scheme Administrator, achieve:

(i) the relevant requirements of AS/NZS 1680, specifically including but not limited to maintained illuminance accounting for lumen depreciation, control of glare, and uniformity of illuminance, or another benchmark approved by the Scheme Administrator where the Lighting Upgrade is outside the scope of AS/NZS1680;

(ii) the requirements of the BCA section F4.4, Safe Movement (as updated from time to time);

(iii) an IPD that equals or is less than the maximum IPD for each space, as defined in Part J6 of the BCA; and

(iv) any other minimum performance requirements as Published by the Scheme Administrator;

(d) the Lighting Upgrade is performed by a person authorised to carry out electrical wiring work under section 14 (1) of the *Home Building Act 1989*;

(e) the Purchaser has paid a Net Amount of at least $5 (excluding GST) per MWh of Electricity Savings, which must not be reimbursed, for the goods or services making up the Implementation, and which payment is evidenced to the satisfaction of the Scheme Administrator;

(f) each item of End-User Equipment used in the Lighting Upgrade is either:

(i) a Standard Equipment Class as listed in Table A9.1 of Schedule A or,

(ii) an Other Equipment Class as listed in Table A9.3 of Schedule A, provided that the item is accepted by the Scheme Administrator as meeting the Equipment Requirements specified in Table A9.4 of Schedule A, and the application to have the item accepted as meeting the Equipment Requirements was made on or before 31 January 2026.

(g) if the Lighting Upgrade is of Lighting for Roads and Public Spaces, then the Lighting Upgrade, must, to the satisfaction of the Scheme Administrator, achieve:

(i) the requirements of the AS/NZS 1158 series of standards; or

(ii) any other standard or benchmark specified by the Scheme Administrator.

(h) if the Lighting Upgrade is of Traffic Signals, then the Lighting Upgrade must, to the satisfaction of the Scheme Administrator, achieve:

(i) the relevant requirements of AS 2144:2014; or

(ii) any other standard or benchmark specified by the Scheme Administrator.

(i) Space types Un-switched Maintained Emergency Luminaire and Switched Maintained Emergency Luminaire in Table A10. 2 do not apply unless the existing lighting End-User Equipment is an Un-Switched Maintained Emergency Luminaire; and

(j) the Implementation Date is on or before 31 March 2026.

Note: Non-Cash Inducements and in-kind payments are not an acceptable form of payment for the purposes of clause 9.4.1(e). They do not contribute to the Net Amount paid. For example, the purchaser cannot provide goods and services in exchange for goods and services that make up the Implementation for the purposes of clause 9.4.1(e).

9.4.2 The Implementation Date is the date when the Lighting Upgrade was completed.

9.4.3 The Energy Saver is the Purchaser.

9.4.4 (deleted).

9.4.5 Certificates arising from Energy Savings calculated under clause 9.4 may only be created on or before 31 March 2026.

Equation 6

For each Implementation:

$$Electricity\ Savings = [Baseline\ Consumption - Upgrade\ Consumption]$$

Where:

- *Baseline Consumption*, in MWh, is calculated:
  - using **Equation 7**, if the Lighting Upgrade is part of a refurbishment that would not have been required to comply with the BCA Part J6, had the Lighting Upgrade component of the refurbishment not occurred;
  - using **Equation 7** if the Lighting Upgrade is part of a refurbishment that would have been required to comply with the BCA Part J6, had the Lighting Upgrade component of the refurbishment not occurred and where the existing lighting meets or is below the maximum IPD requirements of the BCA Part J6; or
  - using **Equation 8** if the Lighting Upgrade is part of a refurbishment that would have been required to comply with the BCA Part J6, had the Lighting Upgrade component of the refurbishment not occurred, and where the existing lighting does not meet the IPD requirements of the BCA Part J6.
- *Upgrade Consumption*, in MWh, is calculated using **Equation 9**.

Equation 7

Baseline Consumption (MWh) =

$$\sum_{Each\ Incumbent\ Lamp} (LCP \times Asset\ Lifetime \times Annual\ Operating\ Hours \times CM \times AM) \div 10^6$$

Where:

- *Each Incumbent Lamp* means each Lamp and Control Gear in the pre-existing lighting system;
- *LCP*, in Watts, is the default lamp circuit power corresponding to that type of Lamp and Control Gear for that End-User Equipment as set out in **Table A9.2** or **Table A9.4** of Schedule A, representing the power drawn by the Lamp, plus the losses of its Control Gear;

- *Asset Lifetime*, in years, is the default lifetime of the Lighting Upgrade for the relevant End-User Equipment as used in **Equation 9**;
- *Annual Operating Hours*, in hours/year, is the default number of hours per annum that the upgraded lighting system is expected to operate for the relevant building and space type as set out in **Table A10.2** of Schedule A;
- *CM* is the control multiplier. If the Lamp is connected to a Control System, the factor for the control multiplier shall be applied for the relevant End-User Equipment or activity as set out in **Table A10.4** of Schedule A to this Rule, otherwise CM = 1.0; and
- *AM* is the air-conditioning multiplier for the space as used in **Equation 9**.

Equation 8

Baseline Consumption (MWh) =

$$\sum_{Each\ Space} (IPD \times Area \times Asset\ Lifetime \times Annual\ Operating\ Hours \times AM) \div 10^6$$

Where:

- *Each Space* means each portion of space within the Site requiring a different IPD as defined in Part J6 of the BCA;
- *IPD*, in Watts/m^2, is the maximum allowable IPD for each space, as required by Table J6.2a of the BCA. For simplicity, the Scheme Administrator may take a weighted average of similar IPDs in the Commercial Lighting Energy Savings Formula.
- *Area*, in m^2, is the area of Each Space;
- *Asset Lifetime*, in years, is the default lifetime of the Lighting Upgrade for the relevant End-User Equipment as used in **Equation 9**;
- *Annual Operating Hours*, in hours/year, is the default number of hours per annum that the upgraded lighting system is expected to operate for the relevant building and space type as set out in **Table A10.2** of Schedule A; and
- *AM* is the air-conditioning multiplier for the space as used in **Equation 9**.

Equation 9

Upgrade Consumption (MWh) =

$$\sum_{Each\ Upgrade\ Lamp} (LCP \times Asset\ Lifetime \times Annual\ Operating\ Hours \times CM \times AM) \div 10^6$$

Where:

- *Each Upgrade Lamp* means each Lamp and Control Gear in the upgraded lighting system.
- *LCP*, in Watts, is the default lamp circuit power corresponding to that type of Lamp and Control Gear for that End-User Equipment as set out in **Table A9.2** or **Table A9.4** of Schedule A, representing the power drawn by the Lamp, plus the losses of its Control Gear;
- *Asset Lifetime*, in years, is the default lifetime of the Lighting Upgrade for the relevant End-User Equipment as set out in **Table A10.1** of Schedule A, or another value accepted by the Scheme Administrator;

- *Annual Operating Hours*, in hours/year, is the default number of hours per annum that the upgraded lighting system is expected to operate for the relevant building and space type as set out in **Table A10.2** of Schedule A;
- *CM* is the control multiplier. If the Lamp is connected to a Control System, the factor for the control multiplier shall be applied for the relevant End-User Equipment or activity as set out in **Table A10.4** of Schedule A, otherwise CM = 1.0; and
- *AM* is the air-conditioning multiplier for the space, after Implementation, as set out in **Table A10.5** of Schedule A.

9.4A Public Lighting Energy Savings Formula

9.4A.1 The Energy Savings for an Implementation may be calculated using **Equations 6A, 7A** and **9A**, provided that:

(a) the activity is a Lighting Upgrade of:

(i) Lighting for Roads and Public Spaces; or

(ii) Traffic Signals; and

(b) the Luminaire is an asset owned and/or maintained by a Distributor or Roads and Maritime Services; and

(c) each item of End-User Equipment used in the Lighting Upgrade is either:

(i) a Standard Equipment Class as listed in Table A9.1 of Schedule A; or

(ii) an Other Equipment Class as listed in Table A9.3 of Schedule A, provided that the item complies with any requirements relating to safety or performance Published, from time to time, by the Scheme Administrator under this clause.

9.4A.2 The Implementation Date is the date when the Lighting Upgrade was completed.

9.4A.3 The Energy Saver is:

(a) the Distributor or Roads and Maritime Services that is the owner of the Luminaire; or

(b) the Council or Roads and Maritime Services if they:

(i) are a public lighting customer, for billing, regulatory or management purposes, of the Distributor that owns the Luminaire, and

(ii) request the Lighting Upgrade from the Distributor that owns the Luminaire, in writing.

9.4A.4 If the Lighting Upgrade involves an existing or replacement Lamp or Luminaire that:

(a) 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 LCP in **Equations 7A** and **9A**; or

(b) 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 must be used as the LCP in **Equations 7A** and **9A**.

Equation 6A

For each Implementation:

$$Electricity\ Savings = [Baseline\ Consumption - Upgrade\ Consumption]$$

Where:

- *Baseline Consumption*, in MWh, is calculated using **Equation 7A**
- *Upgrade Consumption*, in MWh, is calculated using **Equation 9A**

Equation 7A

Baseline Consumption (MWh) =

$$\sum_{Each\ Incumbent\ Lamp} (LCP \times Asset\ Lifetime \times Annual\ Operating\ Hours) \div 10^6$$

Where:

- *Each Incumbent Lamp* means each Lamp and Control Gear in the pre-existing lighting system;
- *LCP*, in Watts, is the default lamp circuit power as defined in clause 9.4A.4;
- *Asset Lifetime* is 12 years;
- *Annual Operating Hours*, in hours/year, is:
  - 4,500, if the activity is a Lighting Upgrade of Lighting for Roads and Public Spaces; or
  - 8,760, if the activity is a Lighting Upgrade of Traffic Signals.

Equation 9A

Upgrade Consumption (MWh) =

$$\sum_{Each\ Upgrade\ Lamp} (LCP \times Asset\ Lifetime \times Annual\ Operating\ Hours) \div 10^6$$

Where:

- *Each Upgrade Lamp* means each Lamp and Control Gear in the upgraded lighting system;
- *LCP*, in Watts, is the default lamp circuit power as defined in clause 9.4A.4;
- *Asset Lifetime* is 12 years;
- *Annual Operating Hours*, in hours/year, is:
  - 4,500, if the activity is a Lighting Upgrade of Lighting for Roads and Public Spaces; or
  - 8,760, if the activity is a Lighting Upgrade of Traffic Signals.

9.5 High Efficiency Motor Energy Savings Formula

9.5.1 The Energy Savings may be calculated using **Equation 12**, provided that:

(a) the End-User Equipment is a new High Efficiency Motor; and

(b) the High Efficiency Motor is installed.

9.5.2 The Implementation Date is the date that the High Efficiency Motor was installed.

9.5.3 The Energy Saver is the Purchaser.

9.5.4 (deleted).

9.5.5 An Accredited Certificate Provider may only calculate Energy Savings for an Implementation using **Equation 12** if they were accredited by the Scheme Administrator to create Energy Savings Certificates using the High Efficiency Motor Energy Savings Formula on or before 15 April 2016.

Equation 12

For each Implementation:

$$Electricity\ Savings = P \times LUF \times DEI \times Asset\ Life \times 8760 \div 1000$$

Where:

- *P*, in kW, is the rated output of the High Efficiency Motor
- *LUF* is the Default Load Utilisation Factors for the relevant High Efficiency Motor as set out in **Table A12** of Schedule A, where the Business Classification and End-Use Service relevant to the Energy Savings is known, or **Table A13** of Schedule A otherwise;
- *DEI* is the default efficiency improvement (as a fraction, not as a percentage) for the relevant High Efficiency Motor as set out in **Table A11** of Schedule A; and
- *Asset Life*, in years, of the High Efficiency Motor is set out in **Table A14** of Schedule A to this Rule for the corresponding rated output of the High Efficiency Motor.

9.6 Power Factor Correction Energy Savings Formula

9.6.1 The Energy Savings may be calculated using **Equations 13** and **14**, provided that:

(a) the capacitors to provide the power factor correction services are installed at a Site where electricity is supplied from the Electricity Network at less than 50 kilovolts (kV);

(b) the capacitors improve the power factor of the Site to achieve a minimum of 0.9 lagging;

(c) the capacitors are not installed as part of a mandatory program of installation;

(d) the capacitors are installed at the main switchboard, where the Site is connected to the Electricity Network; and

(e) the capacitors are new.

9.6.2 The Implementation Date is the date on which the capacitors were installed.

9.6.3 The Energy Saver is the Purchaser.

9.6.4 (deleted)

Equation 13

For each Implementation:

$$Electricity\ Savings = (Power\ Savings) / 1000 \times (Annual\ operating\ hours) \times (Site\ Life)$$

Where:

- *Power Savings*, in kW, is the line loss power savings, less capacitor losses, during operating hours, and is calculated according to **Equation 14;**
- *Annual operating hours*, in hours/year, is the number of hours per year that the Site is operating and equals 1750; and
- *Site Life*, in years, is the expected remaining lifetime of the Site and the capacitors and equals 10.

Equation 14

$$Power\ Savings\ (kW) = Real\ Power \times 0.7 \times (DLF - 1) \times (1 - (Initial\ power\ factor)^2 / (Final\ power\ factor)^2) - 0.0039 \times (Rating\ of\ installed\ capacitors)$$

Where:

- *Real Power*, in kW, is the real power component of the average Site load during operating hours;
- *DLF* is the distribution loss factor for the Distribution District that the Site is connected to, as detailed in **Table A19** of Schedule A;
- *Initial power factor* is the power factor of the load before the capacitors are installed, or 0.9, whichever is greater;
- *Final power factor* is the power factor of the load after the capacitors have been installed, or 0.98, whichever is lesser; and
- *Rating of installed capacitors*, in kvar, is the rated reactive power of the installed capacitors.

9.7 Removal of Old Appliances

9.7.1 The Energy Savings for an Implementation may be calculated using **Equation 15**, provided that:

(a) the Site is a Residential Building or a Small Business Site;

(b) each item of End-User Equipment meets one of the Equipment Requirements in Activity Definition C1 or C2 of Schedule C;

(c) each item of End-User Equipment is removed from the Site and disposed of; and

(d) compliance with the requirements in clauses 9.7.1(a) to (c) above is evidenced by a copy of the disposal agent's refrigerant handling Licence, and/or other evidence acceptable to the Scheme Administrator.

9.7.2 The Implementation Date is the date that the End-User Equipment was removed from the Site.

9.7.3 The Energy Saver is the person who is contracted to remove the End-User Equipment.

Equation 15

For each Implementation:

$$Electricity\ Savings = \sum Deemed\ Equipment\ Electricity\ Savings$$

Where:

- the summation is over all items of End-User Equipment that have been removed as part of the Implementation; and
- *Deemed Equipment Electricity Savings*, in MWh, are calculated according to **Activity Definition C1 or C2** of Schedule C.

9.8 Home Energy Efficiency Retrofits

9.8.1 The Energy Savings for an Implementation may be calculated using **Equation 16**, provided that:

(a) the Site is a Residential Building or a Small Business Site, as evidenced to the satisfaction of the Scheme Administrator;

(b) a Site Assessment has been conducted on or before the Implementation Date;

(c) the Eligibility Requirements for the relevant Activity Definition are met immediately prior to the Implementation Date;

(d) installed End-User Equipment or Products that modify End-User Equipment meet all of the Equipment Requirements for the relevant Activity Definition;

(e) the completed Implementation satisfies all of the relevant Implementation Requirements;

(f) the Accredited Certificate Provider has evidence satisfactory to the Scheme Administrator that the Purchaser has paid for the Implementation, assessment and other associated works carried out at the Site a Net Amount (excluding GST) as set out in Table 1 below.

Table 1 — Purchaser payments for Implementations under clause 9.8.1(f)

Activity Definition	**Minimum payment unit**	**Minimum payment amount**	**Limitation**
Schedule D or Schedule E	For each Implementation	$30	Except for Activity Definitions D5, D16, D17, D18, D19, D20, D21
D5, D17, D18, D19, D20, D21	For each item of End-User Equipment installed as part of an Implementation	$200	-
D16	For each Implementation of Air Conditioners	$500	Except Multi-split systems or Ducted systems
D16	For each Multi-split or Ducted system	$1000	For systems with up to 15kW of Cooling Capacity
D16	For each Multi-split or Ducted system	$2000	For systems with more than 15kW, but less than 20kW, of Cooling Capacity

D16	For each Multi-split or Ducted system	$3000	For systems with at least 20kW of Cooling Capacity

Note: For Activity Definition D16, when calculating payments for Multi-split or Ducted systems, the cooling capacity is to be rounded down to the nearest whole kW.

9.8.1A An Accredited Certificate Provider must ensure that a payment made by a Purchaser which the Accredited Certificate Provider relies upon under clause 9.8.1(f) is not reimbursed.

9.8.1B Clause 9.8.1(f) does not apply to an Implementation delivered through a Low-income Energy Program or an Exempt Energy Program.

Note: Non-Cash Inducements and in-kind payments are not an acceptable form of payment for the purposes of clause 9.8.1(f). They do not contribute to the Net Amount paid. For example, the purchaser cannot provide goods and services in exchange for goods and services that make up the Implementation for the purposes of clause 9.8.1(f).

9.8.2 The Implementation Date is the date that the End-User Equipment is installed.

9.8.3 The Energy Saver is the Purchaser.

9.8.4 (deleted)

9.8.5 The activities that make up the Implementation must be identified, recorded and reported to the Scheme Administrator in a manner and form determined by the Scheme Administrator.

9.8.6 Activity Definitions D11, D12 and D21 expire on 30 June 2026 at the end of the day, upon which:

(a) no Implementations using those activities may be undertaken; and

(b) no certificates may be created from such an Implementation.

9.8.7 Despite any other provision of this Rule, when using Equation 1 to calculate the Number of Certificates for Energy Savings arising from an Implementation under Activity Definition D16, the maximum number of Energy Savings Certificates able to be created under a single Implementation using Multi-split systems is 90 for each Implementation in Cold Climate Zones, and 70 for each Implementation in Average or Hot Climate Zones, as listed in Table A27.

Equation 16

For each Implementation:

$$Electricity\ Savings = \sum Deemed\ Activity\ Electricity\ Savings$$

$$Gas\ Savings = \sum (Deemed\ Activity\ Gas\ Savings)$$

Where:

- the summation is over all activities at the Site in accordance with this clause 9.8; and
- *Deemed Activity Electricity Savings*, in MWh, are calculated according to the Activity Energy Savings formula set out in the relevant **Activity Definition** in Schedule D or Schedule E for each Implementation at the Site.
- *Deemed Activity Gas Savings*, in MWh, are calculated according to the Activity Energy Savings formula set out in the relevant **Activity Definition** in Schedule D or Schedule E for each Implementation at the Site.

9.9 Installation of High Efficiency Appliances for Businesses

9.9.1 The Energy Savings for an Implementation may be calculated using **Equation 17**, provided that:

(a) each item of End-User Equipment meets the Equipment Requirements in an Activity Definition listed in Schedule F;

(b) each item of End-User Equipment meets the Implementation Requirements as specified in the relevant Activity Definition in Schedule F; and

(c) each item of End-User Equipment is installed at an Address in an ESS Jurisdiction

(d) the Site is not a Residential Building unless otherwise specified in the Eligibility Requirements in an Activity Definition listed in Schedule F; and

(e) the Accredited Certificate Provider has evidence satisfactory to the Scheme Administrator that the Purchaser has paid for the Implementation, assessment and other associated works carried out at the Site, a Net Amount (excluding GST) as set out in Table 2 below.

Table 2 — Purchaser payments for Implementations under clause 9.9.1(e)

Activity Definition	Minimum payment unit	Minimum payment amount	Limitation
F1.1, F1.2, F4, F16 or F17	For each item of End-User Equipment installed as part of an Implementation	$1000	Except Installations of Multi-split or Ducted systems under Activity Definition F4 with less than 30kW of Cooling Capacity
F4	For each Multi-split or Ducted system	$3000	For systems with at least 30kW of Cooling Capacity

Note: To calculate payments for F4, the Cooling Capacity is rounded down to the nearest whole kW.

9.9.1A An Accredited Certificate Provider must ensure that a payment made by a Purchaser which the Accredited Certificate Provider relies upon under clause 9.9.1(e) is not reimbursed.

9.9.1B Clause 9.9.1(e) does not apply to an Implementation delivered through an Exempt Energy Program.

9.9.1C Where two or more heat pumps are joined by manifold to form a single system, that manifold system is deemed to be a single item of End-User Equipment for the purposes of clause 9.9.1(e) and clause 9.9.5.

Note: Non-Cash Inducements and in-kind payments are not an acceptable form of payment for the purposes of clause 9.9.1(e). They do not contribute to the Net Amount paid. For example, the purchaser cannot provide goods and services in exchange for goods and services that make up the Implementation for the purposes of clause 9.9.1(e).

9.9.2 The Implementation Date is the date that the End-User Equipment is installed.

9.9.3 The Energy Saver is the Purchaser.

9.9.4 (deleted)

9.9.5 Despite any other provision of this Rule except clause 9.9.1C, when using Equation 1 to calculate the Number of Certificates for Energy Savings arising from an Implementation under Activity Definition F16 or F17, the number of Energy Savings Certificates able to be created under a single Implementation under those Activity Definitions is limited to 5,000 for each Implementation.

9.9.6 Activity Definitions F8 and F9 expire on 30 June 2026 at the end of the day, upon which:

(a) no Implementations using those activities may be undertaken; and

(b) no certificates may be created from such an Implementation.

Equation 17

For each Implementation:

$$Electricity\ Savings = \sum Deemed\ Equipment\ Electricity\ Savings$$

$$Gas\ Savings = \sum Deemed\ Equipment\ Gas\ Savings$$

Where:

- the summation is over all items of End-User Equipment that have been installed as part of the Implementation; and
- *Deemed Equipment Electricity Savings*, in MWh, for each item of End-User Equipment are calculated according to the relevant **Activity Definition** in Schedule F.
- *Deemed Equipment Gas Savings*, in MWh, for each item of End-User Equipment are calculated according to the relevant **Activity Definition** in Schedule F.

9.10 (deleted)

10 Definitions and Interpretation

10.1 In this Rule:

"Accreditation Date" means, with respect to a Recognised Energy Saving Activity, the date on which the Scheme Administrator approves an Accredited Certificate Provider's application:

(a) for accreditation with respect to that activity; or

(b) to amend its existing accreditation to add that activity.

"Accredited Certificate Provider" has the same meaning it has in the Act.

"Accredited Statistician" means a person:

(a) accredited by the Statistical Society of Australia Inc. at the time of carrying out the verification in accordance with clause 8.9.7(e); and

(b) accepted by the Scheme Administrator for the purposes of this Rule.

"Accuracy Factor" has the meaning given to that term in clause 7A.10.

"Annual Coefficient of Performance" or **"ACOP"** has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"Act" means the *Electricity Supply Act 1995*.

"Activity Definition" means an activity as specified in a Schedule to this Rule.

"Additional Energy Savings" means, in respect of clauses 7, 7A and 8, Energy Savings for which no Energy Savings Certificates have been created, but which arise from an Implementation in relation to which Energy Savings Certificates have been created.

"Address" means a street address within an ESS Jurisdiction, in a format approved by the Scheme Administrator.

"Adjusted Coefficient of Determination" means, for the purpose of clause 7A, a statistical measure of the extent to which variations in the energy consumption are explained by an energy model that is established using Regression Analysis, adjusted to the number of Independent Variables used in the energy model.

"Annual Energy Efficiency Ratio" or **"AEER"** has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"**Air Conditioner**" has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019.*

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

"Approved Corresponding Scheme" has the same meaning as it has in clause 30(3) of Schedule 4A of the Act.

"AS" means an Australian Standard as published by SAI Global.

"AS/NZS" means an Australian/New Zealand Standard as published by SAI Global.

"AS/NZS 3823.4 Climate Zone" means the three climate zones used for air-conditioning activities, defined in AS/NZS 3823.4.1, AS/NZS 3823.4.2 and the E3 Climate Zone Mapping Report listed by postcode, as detailed in Table A27.

"AS/NZS 4234 climate zone" means the two climate zones used for heat pump water heater activities, defined in AS/NZS 4234, listed by BCA Climate Zone, as detailed in Table A26.

"Attrition" means, in relation to clause 8.9, the termination of the natural gas or electricity account in relation to a specific Site, for example, due to electricity customers switching retailers, relocating to a different Site, or disconnection from their electricity service.

"Average Insulated Storage Volume" means the total storage volume of the End-User Equipment being installed divided by the number of hot water storage tanks.

"Ballast EEI" means the ballast energy efficiency index as defined in AS/NZS 4783.2 *Performance of electrical lighting equipment - Ballasts for fluorescent lamps - Energy labelling and minimum energy performance standards requirements*.

"**Banned End-User Equipment**" means End-User Equipment which is the subject of a Banned End-User Equipment Notice.

"**Banned End-User Equipment Notice**" means a notice Published by the Scheme Administrator specifying End-User Equipment to be banned for the purposes of this Rule. Such a notice may be limited by reference to:

(a) a specified period of time;

(b) specified calculation methods or Activity Definitions; and/or

(c) other matters as the Scheme Administrator sees fit.

"Baseline Energy Model" is the model described in clause 7A.3.

"Baseline NABERS Rating" has the meaning given in Step 2 of Method 4, under clause 8.8.

"BASIX" means the NSW Building Sustainability Index established under the *Environmental Planning and Assessment Regulation 2021*.

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

"BCA Climate Zone" means a climate zone under the BCA (as in force and updated from time to time).

"Biodiesel" has the same meaning as it has in the *Biofuels Act 2007* (NSW**)**

"Biofuel" has the same meaning as it has in the *Electricity Supply (General) Regulation 2014*.

"Biofuel Savings" means the reduction of the amount or equivalent amount of Biofuel consumption for stationary energy (in MWh) arising from the Implementation as calculated by the approved calculation method in clauses 7, 7A, 8 or 9. Biofuel Savings may be negative.

"Biogas" has the same meaning as it has in the *Electricity Supply (General) Regulation 2014*.

"Biogas Savings" means the reduction of the amount or equivalent amount of Biogas consumption for stationary energy (in MWh) arising from the Implementation as calculated by the approved calculation method in clauses 7, 7A, 8 or 9. Biogas Savings may be negative.

"Biomass" has the same meaning as in the *Electricity Supply (General) Regulation 2014*.

Note: Energy Crops and the biomass-based waste fuels listed in the NSW Environment Protection Authority's *Eligible Waste Fuels Guidelines* as in force from time to time are eligible types of Biomass under this Rule.

"Biomass Savings" means the reduction of the amount or equivalent amount of Biomass consumption for stationary energy (in MWh) arising from the Implementation as calculated by the approved calculation method in clauses 7, 7A, 8 or 9. Biomass Savings may be negative.

"Building Lighting" means End-User-Equipment lighting affixed to a Commercial/Industrial premises which is classified under the BCA as Class 3, 5, 6, 7, 8, 9, 10(a) or 10(b) buildings or the Common Area of a BCA Class 2 building.

"Business Classification" is the primary classification of the business making use of the End-Use Service for which energy was saved, detailed in Table A18 of Schedule A.

"Certificate Conversion Factor" has the same meaning as it has in the Act.

"CFL" means compact fluorescent Lamp.

"CFLi" means a compact fluorescent Lamp with integrated ballast.

"CFLn" means a compact fluorescent Lamp with non-integrated ballast.

"Coefficient of Variation" means, for the purposes of clause 7A, the sample standard deviation expressed as a percentage of the sample mean.

"Coefficient of Variation of the Root Mean Squared Error" means, for the purpose of clause 7A, the standard error of an energy model that is established using Regression Analysis expressed as a percentage of the average energy consumption.

"Commercial Building Disclosure Program" is a regulatory program established under the *Building Energy Efficiency Disclosure (BEED) Act 2010.*

"Common Areas" means:

(a) for buildings owned under strata title, the common property as defined in either the *Strata Schemes (Freehold Development) Act 1973*, or *Strata Schemes (Leasehold Development) Act 1986*; or

(b) for buildings not owned under strata title (e.g. under company title), the non-residential property of BCA Class 2 buildings.

"Computer Simulation" means a method to establish an energy model that uses software to simulate energy consumption by End-User Equipment and can be tested against statistical requirements Published by the Scheme Administrator for the purposes of clause 7A of this Rule.

"Control Gear" means the lighting ballast, transformer or driver.

"Control Group" means, in relation to clause 8.9, the group of Sites selected to not be offered the Treatment.

"Control Multiplier A" is a factor from Table A10.4A of Schedule A for a control device that switches the luminaire on and off and must control a maximum of 6 luminaires (except Occupancy Sensor 1).

"Control Multiplier B" is a factor from Table A10.4A of Schedule A for a control device that reduces the luminaire's power output and must control a maximum of 6 luminaires (except Occupancy Sensor 1). The luminaire must have at least two rated LCP modes that must not be adjusted after the Implementation.

"Control System" means a system for controlling the light output of a Luminaire, including:

(a) Occupancy Sensor;

(b) Daylight-Linked Control;

(c) Programmable Dimming;

(d) Manual Dimming; or

(e) Voltage Reduction Unit.

"Cooling Capacity" has the same meaning as "Total Cooling Capacity" in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"Council" means a Council as defined by the *Local Government Act 1993* or corresponding legislation in an approved corresponding scheme jurisdiction.

"Counted Energy Savings" means the total Eligible Fuel Savings for which Energy Savings Certificates have previously been created for the Implementation. Counted Energy Savings can only be used to account for Energy Savings Certificates created for the same Implementation, not for Energy Savings Certificates created under another Recognised Energy Saving Activity.

"Data Exclusion Method" means, for the purpose of clause 7A, the Non-Routine Adjustment method described in the PIAM&V Method Application Requirements for Non-Routine Events and Adjustments that is used to adjust for a temporary Non-Routine Event that is less than or equal to 25% of the Measurement Period of choice, or to adjust for a permanent Non- Routine Events commencing within the first 25% of the Baseline Energy Model Measurement Period or within the last 25% of the Operating Energy Model Measurement Period.

"Decay Factor" is a number between 0 and 1 which quantifies the decay of the relevant Energy Savings due to equipment degradation over time, as determined in accordance with clauses 7 and 7A.

"Deemed Energy Savings Method" means the method in clause 9.

"Default Load Utilisation Factor" is a composite of a deemed load factor and a deemed utilisation factor for HEMs, as set out in Table A12 or Table A13 of Schedule A.

"Diesel Savings" means the reduction of the amount of diesel consumption for stationary energy (in MWh) arising from the Implementation as calculated by the approved calculation method in clauses 7, 7A, 8 or 9. Diesel Savings may be negative.

"Distribution District" has the same meaning as in the Act.

"Distribution Pipeline" has the same meaning as in the *Gas Supply Act 1996*.

"Distribution System" has the same meaning as in the Act.

"Distributor" has the same meaning as in the Act.

"Downward Light Output" means the luminous flux (measured in lumens) emitted in the downwards direction, equivalent to the Light Output from a Lamp or Luminaire when installed flush with a ceiling.

"Ducted" has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019.*

"Effective Range" means the range over which values of Independent Variables for which a Baseline Energy Model or Operating Energy model (as the case may be) is valid for the purposes of clause 7A of this Rule.

"Effective Range Adjustment Factor" is an adjustment factor applied to Normal Year Eligible Fuel Savings and measured Eligible Fuels Savings during time periods at the Modelling Frequency corresponding to values of the Independent Variables that are outside the Effective Range of either the Baseline Energy Model or Operating Energy Model.

"Electricity Network" means all electricity Transmission Systems and Distribution Systems located in an ESS Jurisdiction.

"Electricity Retailer" has the same meaning as "retailer" in the *National Energy Retail Law* (NSW).

"Electricity Savings" means the reduction of the amount or equivalent amount of electricity consumption (in MWh) arising from the Implementation as calculated by the approved calculation method in clauses 7, 7A, 8 or 9. Electricity Savings may be negative.

"Eligibility Requirements" means:

(a) in relation to clause 7A, the set of defined requirements that a Site must meet to be included in the Population; or

(b) in relation to the Deemed Energy Savings Method, the eligibility requirements specified in an Activity Definition in the Schedules to this Rule.

"Eligible Fuel" means the recognised forms of energy prescribed in clause 29A of the *Electricity Supply (General) Regulation 2014* and electricity.

"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 Electrical installations* (known as the Australian/New Zealand Wiring Rules).

"Energy Crops" means crops that are specifically grown for Bioenergy generation. Biomass from a plantation is not an Energy Crop unless it meets all of the conditions under Part 2, Division 2.2, clause 9(1) of the *Renewable Energy (Electricity) Regulation 2001* (Cth).

"End-Use Service" is the primary service provided by End-User Equipment, such services being as detailed in Table A17 of Schedule A.

"End-User Equipment" means Eligible Fuel consuming equipment, processes, or systems, including the equipment directly consuming one or more Eligible Fuels, and other equipment or products that cause, control or influence the consumption of one or more Eligible Fuels, and includes (in the context of clause 8.8) a NABERS Building.

"Energy Saver" means the person who has the right to create Energy Savings Certificates for particular Energy Savings arising from an Implementation of a Recognised Energy Saving Activity at a Site, as defined in the relevant calculation method of this Rule.

"Energy Savings" means the Electricity Savings, Gas Savings, Diesel Savings, Biofuel Savings, Biogas Savings, Biomass Savings, Onsite Renewables Savings or a combination or two or more of these.

"Energy Savings Certificate" has the same meaning as in the Act.

"Energy Star Rating" means an Energy Star Rating as defined in the relevant AS/NZS.

"Equipment Requirements" means the equipment requirements as specified in a Schedule in this Rule or as Published from time to time by the Scheme Administrator in accordance with clauses 7A.21A, 8.4B and 9.2A.

"ESS Jurisdiction" means the state of New South Wales, or a jurisdiction in which an Approved Corresponding Scheme is in operation in accordance with clause 30 of Schedule 4A of the Act.

"Estimate of the Mean" means, for the purposes of clause 7A, a method to establish an energy model as described in clause 7A.2 (a)(i).

"Ethanol" has the same meaning as in the *Biofuels Act 2007.*

"Exempt Energy Program" means a program approved by the Minister, and notified to the Scheme Administrator, as being exempt from specified clauses of this Rule.

"Exempt Seller" has the same meaning as in the *National Energy Retail Law* (NSW).

"Fan-Forced Roof Space Ventilators" are products capable of controlled roof cavity ventilation via a powered fan, controller and temperature humidity sensors, or both.

"Forestry and Sawmilling Residues" has the same meaning as defined in the NSW Environment Protection Authority's *Eligible Waste Fuels Guidelines* as in force from time to time.

"Gas" means natural gas or liquefied petroleum gas.

"Gas Retailer" has the same meaning as "retailer" in the *National Energy Retail Law* (NSW).

"Gas Savings" means the reduction of the amount of Gas consumption for stationary energy (in MWh) arising from the Implementation as calculated by the approved calculation method in clauses 7, 7A, 8 or 9. Gas Savings may be negative.

"GEMS Registry" has the same meaning as in the *Greenhouse and Energy Minimum Standards Act 2012* (Cth).

"GreenPower" means renewable energy purchased in accordance with the National GreenPower Accreditation Program Rules.

"GST" has the same meaning as in the *A New Tax System (Goods and Services Tax) Act 1999* (Cth).

"Guide" means a guidance document Published by the Scheme Administrator.

"Heating Capacity" has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"High Efficiency Motor" or "HEM" is an electric motor meeting the high efficiency requirements of AS/NZS 1359.5 (0.73 to <185kW).

"HP3-AU" means the climate zone used for heat pump water heater activities, defined in AS/NZS 4234, listed by BCA Climate Zone, as detailed in Table A26.

"HP5-AU" means the climate zone used for heat pump water heater activities, defined in AS/NZS 4234, listed by BCA Climate Zone, as detailed in Table A26.

"Heating Seasonal Performance Factor" or **"HSPF"** has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"Implementation" means the delivery of a Recognised Energy Saving Activity at a Site, or for the purposes of clause 8.9, the delivery of a Recognised Energy Saving Activity across a Population.

"Implementation Date" is defined in each calculation method of this Rule.

"Implementation Period" means

(a) for the purpose of clause 7A, the period extending from the end date of the Baseline Energy Model Measurement Period to the start date of the Operating Energy Model Measurement Period, and within which the Implementation Date occurs.

(b) for the purpose of clause 8, the Measurement Period for which Energy Savings Certificates may be created.

"Implementation Requirements" means the implementation requirements specified in an Activity Definition in the Schedules to this Rule.

"Incumbent Lamp" means, in relation to a Lighting Upgrade, each Lamp and Control Gear in the pre-existing lighting system.

"Independent Variable" means a parameter that varies over time, can be measured, and affects the End-User Equipment's energy consumption for the purposes of clause 7A of this Rule.

"Instrument" has the same meaning as in the *Interpretation Act 1987*.

"Integrated Luminaire" means a Luminaire that integrates Lamp and Control Gear into a single item of End-User Equipment and connects to 240V supply.

"Interactive Energy Effects$_f$" means a change in a Site's consumption of Eligible Fuel, f, outside of the Measurement Boundary, due to interactions with End-User Equipment for which energy consumption is not measured for the purposes of clause 7A.

"IPD" means the illumination power density as defined in the BCA part J6.

"IPMVP" means the International Performance Measurement and Verification Protocol, published by the Efficiency Valuation Organization.

"kV" means a kilovolt of electrical potential.

"kvar" means a kilovolt-amperes reactive of reactive power.

"kW" means a kilowatt of electrical power.

"kWh" means a kilowatt-hour of electrical energy.

"Lamp" means an artificial source of visible light.

"Lamp Life" means the expected operating lifetime of a Lamp, in hours, measured in accordance with Table A9.6 of Schedule A.

"Lamp Only" means the replacement of an existing Lamp with a Lamp that consumes less electricity, and could include the installation or replacement of a Control System.

"Large Business Site" means a Site that is entirely occupied by one business with an ABN; and where the business, as a consumer of electricity at the Site is a Large Customer.

"Large Customer" has the same meaning as in the *National Energy Retail Law* (NSW).

"LCP" means lamp circuit power, which is the power drawn by a single Lamp and its associated Control Gear. If the Control Gear supplies multiple Lamps, then the Control Gear losses are assigned pro rata to each Lamp, according to power drawn by each Lamp.

"LED" means light emitting diode.

"Licensed" means a person that holds a current licence that covers activities in the ESS Jurisdiction in which the Recognised Energy Saving Activity is implemented for the duration of the Implementation.

"Lifetime" means the time period over which Energy Savings will be delivered and for the purposes of Schedules B, C, D, E, and G are for reference only, as the relevant time period is already taken into account in the savings factors in those Schedules.

"Light Output" means the luminous flux (measured in lumens) emitted by a Lamp or Luminaire, determined in accordance with a standard accepted by the Scheme Administrator.

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

"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.

"liquefied petroleum gas" has the same meaning as it has in the *Gas and Electricity (Consumer Safety) Act 2017.*

"Low-income Energy Program" means a program approved by the Minister, and notified to the Scheme Administrator, as being exempt from specified clauses of this Rule.

"LPG" means liquefied petroleum gas.

"LUF" means load utilisation factor.

"Luminaire" means the apparatus that distributes, filters or transforms the light emitted from a light source, including Lamps, Control Gear and all components necessary for fixing and protecting the Lamps, including the troffer.

"Maximum Time Period for Forward Creation" is determined in accordance with clauses 7A.12 and 8.8.10 (a), accordingly.

"Measured Electricity Consumption": (a) for the purposes of clause 8.8 means the electricity consumption as determined in accordance with Method 4; and (b) for the purposes of clause 8.9 means the electricity consumption as determined in accordance with clause 8.9.3.

"Measured Gas Consumption": (a) for the purposes of clause 8.8 means the Gas consumption as determined in accordance with Method 4; and (b) for the purposes of clause 8.9 means the natural gas consumption as determined in accordance with clause 8.9.3A.

"Measurement and Verification Professional" is defined in clause 7A.15 of this Rule.

"Measurement Boundary" means all End-User Equipment which is modified, replaced, installed, or removed as a result of the Implementation, as well as all End-User Equipment within that boundary whose energy consumption is impacted by the Implementation.

"Measurement Frequency" is how often measurements of Eligible Fuel consumption, Independent Variables, Site Constants, or any other relevant parameter are taken.

"Measurement Period" means the duration of time over which measurement of energy consumption will be taken for the purposes of calculating the Energy Savings under clause 7, 7A or 8, and defined therein.

"Metered Baseline Method" means the method in clause 8.

"Modelling Frequency" is how often independent observations of Eligible Fuel consumption, Independent Variables, or any other relevant parameter are used in the Baseline Energy Model or Operating Energy Model. Measurement Frequency and Modelling Frequency may differ where measurements are aggregated into independent observations.

"**Multi-split system**" has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"MWh" means a megawatt-hour of energy.

"NABERS" means the National Australian Built Environment Rating System.

"NABERS Building" means a building that has been rated under NABERS.

"NABERS Rating" means a rating, expressed as a number, for a NABERS Building.

"NABERS Reverse Calculator" means the tool provided by the NABERS National Administrator.

"National Greenhouse Accounts Factors" means the factors published and updated from time to time by the Australian Government's Department of the Environment designed for use by companies and individuals to estimate greenhouse gas emissions.

"National GreenPower Accreditation Program Rules" mean the terms and conditions of participation in the National GreenPower Accreditation Program, available on the GreenPower website.

"Native Forest Bio-materials" has the same meaning as in the *Protection of the Environment Operations (General) Regulation 2009* (NSW).

"natural gas" has the same meaning as in the *National Gas (NSW) Law.*

"Natural Roof Space Ventilators" are products capable of providing roof cavity ventilation by wind or buoyancy effects and have no external power source.

"Net Amount" means the amount of money paid by a Purchaser, minus any money paid to the Purchaser and the value of any Non-Cash Inducements given to the Purchaser in connection with an Implementation.

"Network Service Provider" has the same meaning as in the *National Electricity (NSW) Law*.

"New End-User Equipment" means End-User Equipment where no End-User Equipment of the same type, function, output or service was previously in its place (but does not include additional components installed in the course of modifying existing End-User Equipment).

Note: The installation of one or more air sourced heat pump can claim Energy Savings under Activity Definitions F16 and F17 if the New End User Equipment is installed to add additional capacity at a Site. New End User Equipment can claim savings under Activity Definition F17 if the capacity of the New End User Equipment does not contribute to any of the capacity of the system being replaced.

"NLP", or Nominal Lamp Power, means the manufacturer's rated value (or tested value, as acceptable to the Scheme Administrator) for power drawn by a single Lamp.

"Non-Cash Inducement" includes a gift card, gift voucher, credit note or other like inducement, and also includes goods or services that are not reasonably necessary for or incidental to an Implementation.

Note: For example, where an Implementation consists of installing a new water heater:

- providing the water heater itself would not be a Non-Cash Inducement (because it is reasonably necessary for the Implementation), but
- providing a television would be a Non-Cash Inducement.

"Non-Habitable Building" means a building built as a BCA Class 10a or Class 10b building.

"Non-Network Option" has the same meaning as in the National Electricity Rules under the *National Electricity (NSW) Law*.

"Non-renewable Fuels" means fuels which are existing in limited quantities that cannot be replaced after they have all been used. This includes coal, oil, gas, and nuclear fuels.

"Non-Routine Adjustments" means, for the purpose of clause 7A, amendments made to energy data to account for a Non-Routine Events in accordance with clause 7A.5B1 to enable like-for-like comparison of before and after Energy Savings scenarios.

"Non-Routine Events" means, for the purposes of clause 7A, temporary or permanent events which affect energy consumption, within the Measurement Boundary and during any Measurement Period. The events are not modelled by any Independent Variables or Site Constants.

"Normal Operating Conditions" means the normal operating conditions of the End-User Equipment over one complete operating cycle, from maximum energy consumption and demand to minimum.

"Normal Year" is a typical year for the operation of the End-User Equipment at the Site after the Implementation Date for the purposes of clause 7A of this Rule.

"Number of Certificates" means the number of Energy Savings Certificates permitted to be created by an Accredited Certificate Provider for Energy Savings calculated in accordance with clause 6.5 and the methods set out in clause 7, 7A, 8 or 9.

"Number of Model Parameters" means, for the purposes of clause 7A:

(a) if the energy model is developed for a single Site, the number of Independent Variables; or

(b) if the energy model is developed for multiple Sites, the sum of the number of Independent Variables and Site Constants.

"Occupied Space Ventilators" are products capable of controlled ventilation in the occupied space of a building via a powered fan, controller and temperature or humidity sensors or both.

"Onsite Renewable Energy" has the same meaning as in the *Electricity Supply (General) Regulation 2014*.

"Onsite Renewables Savings" means the reduction of the amount of Onsite Renewable Energy consumption for stationary energy (in MWh) arising from the Implementation as calculated by the approved calculation method in clauses 7, 7A, 8 or 9. Onsite Renewables Savings may be negative.

"Operating Energy Model" is the model established in accordance with the criteria in clause 7A.2 and described in clause 7A.4.

"Organic Residues from Virgin Paper Pulp Activities" has the same meaning as defined in the NSW Environment Protection Authority's *Eligible Waste Fuels Guidelines* as in force from time to time.

"Other Implementations (OIMPs) Estimate Method" means, for the purpose of clause 7A, the Non-Routine Adjustment method described in the PIAM&V Method Application Requirements for Non-Routine Events and Adjustments that accounts for Energy Savings from Implementations other than the Implementation for which the PIAM&V energy model is being established.

"Owners Corporation" means an owners corporation constituted under section 8 of the *Strata Schemes Management Act 2015*.

"Persistence Model" means a model that is able to forecast the continuation of Energy Savings from an Implementation over its useful lifetime.

"PIAM&V Method Application Requirements for Non-Routine Events and Adjustments" means the Project Impact Assessment with Measurement and Verification Method Application

Requirements for Non-Routine Events and Adjustments and is a document Published by the NSW Government to support clause 7A.5B1 under clause 7A.5B.

"PIAM&V Method Requirement" means the Project Impact Assessment with Measurement and Verification method requirement and is a requirement Published by the Scheme Administrator under clause 7A.16.

"Population"

(a) in relation to clause 8.9, means the set of all Sites in the Control Group and Treatment Group; or

(b) in relation to Implementations under clause 7A using the Sampling Method, means the set of all Sites identified as meeting the Eligibility Requirements.

"Pre-Implementation Period" means the Measurement Period prior to the Implementation Period. If Method 5.3 is used, the Pre-Implementation Period must cover the same period of time in a previous year as the Implementation Period.

"Prescribed Transmission Services" has the same meaning as in the National Electricity Rules under the *National Electricity (NSW) Law*.

"Prior Accreditation" means an accreditation with respect to a Recognised Energy Saving Activity where the Accreditation Date is on or before 30 June 2014 and that accreditation has not been cancelled, and includes the conditions to that accreditation.

"Product" means a class of End-User Equipment identified uniquely by its manufacturer identifier and manufacturer's model identifier and, in some cases, model year or year of manufacture.

"Product Stewardship Scheme" means a recycling program such as 'Fluorocycle' or equivalent.

"Project Impact Assessment Method" means the method in clause 7.

"Project Impact Assessment with Measurement and Verification Method" means the method in clause 7A.

"Public Lighting Inventory" means the inventory required to be maintained by the Distributor, in accordance with the NSW Public Lighting Code.

"Publish" means to make publicly available in writing, for example on a website or online system maintained by the Scheme Administrator or another NSW Government agency.

"Purchaser" means, for the purposes of clause 7, 7A and 9, the person who purchases or leases the goods or services that enable the relevant Energy Savings to be made; except where

(a) the person is an Accredited Certificate Provider and is not the owner, occupier or operator of the Site; or

(b) the person purchases or leases the goods or services for the purpose of reselling the End-User Equipment, unless the resale will be an inclusion in a contract for the sale of land, or in a strata scheme, the sale of a lot.

Note: Housing developers that bulk purchase and install appliances in their residential developments are defined as the purchaser if the appliances will be sold in the contract for the sale of the home (as opposed to display appliances only). This applies to both the sale of land, and covers strata apartments, involving the sale of lots.

"PV Powered Fan-Forced Roof Space Ventilators" are fan-forced roof space ventilators where all or a portion of the fan's electricity consumption is powered by photovoltaic (PV) cells that are directly connected to the ventilator.

"Rating Period" means the continuous 12-month period covered by the data used for a NABERS Rating.

"Recognised Energy Saving Activity" has the same meaning as in the Act.

"Regional Site" means a Site that has a regional network factor more than 1 according to Table A24.

"Regression Analysis" means a method to establish an energy model that determines a mathematical function for approximating the relationship between Energy Consumption and Independent Variables and / or Site Constants for the purposes of clause 7A of this Rule, and includes, but is not limited to, linear regression, and mixed models.

"Regulations" means regulations made for the purposes of Schedule 4A of the Act.

"Representativeness Test" means, for the purposes of clause 7A, a test that can be applied to the set of Site Constants across the Sample Sites to test whether they are distributed in a way that represents the expected distribution of those Site Constants across the Population.

"Residential Building" means a building or part of a building classified as a BCA Class 1, 2 or 4 building, and may include any Non-Habitable Building on the same site.

"Sample Site" means, for the purposes of clause 7A, a Site in the Population where measurements are taken for inclusion in a multiple Site model.

"Sampling Method" means the statistical method for conducting measurements at Sample Sites in a Population to estimate the Energy Savings of the entire Population for the purposes of clause 7A of this Rule.

"Scheme Administrator" has the same meaning as in the Act.

"Short Energy Models Method" means, for the purpose of clause 7A, the Non-Routine Adjustment method described in the PIAM&V Method Application Requirements for Non-Routine Events and Adjustments that is used to adjust for a temporary Non-Routine Event that is greater than 25% of the Measurement Period of choice, or to adjust for a permanent Non-Routine Event commencing after the first 25% of the Baseline Energy Model Measurement Period and before the last 25% of the Operating Energy Model Measurement Period.

"Single-split system" has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"Site" means the location of the End-User Equipment included in a Recognised Energy Saving Activity, as defined by:

(a) an Address; or

(b) a unique identifier, as specified for the relevant Implementation that identifies the affected End-User Equipment; or

(c) a method accepted by the Scheme Administrator.

"**Site Assessment**" means identification of Energy Savings that may be generated at a Site using Equation 16 with reference to activities identified in Schedule D and Schedule E.

"Site Constant" means a parameter of a Site that does not vary over time under Normal Operating Conditions. A Site Constant affects energy consumption of End-User Equipment but is not an Independent Variable and is not used to derive a dependent variable.

"Small Business Site" means a Site:

(a) that is entirely occupied by one business with ABN recorded to meet the requirements of clause 6.8 (g); and
(b) where the business, as a consumer of electricity at the Site:
    a) is a Small Customer (and, for the avoidance of doubt, has not aggregated its load at the Site with consumption at other Sites for the purposes of being treated as a Large Customer under its electricity purchase arrangements); or
    b) is a customer of an Exempt Seller, and has an annual electricity consumption below the Upper Consumption Threshold for electricity, specified in the *National Energy Retail Law (NSW)*.

"Small Customer" has the same meaning as in the *National Energy Retail Law (NSW)*.

"Standard Control Service" has the same meaning as in the National Electricity Rules under the *National Electricity (NSW) Law*.

"Standard Luminaire" means, in relation to Table A9.4 of Schedule A, a Luminaire that is listed on a Distributor's current maintained list of standard luminaires, in accordance with the NSW Public Lighting Code.

"Sub-metering Method" means, for the purpose of clause 7A, the Non-Routine Adjustment method described in the PIAM&V Method Application Requirements for Non-Routine Events and Adjustments that is used to adjust for Non-Routine Events with existing sub-metering.

"Switched Maintained Emergency Luminaire" has the same meaning as in the AS/NZS 2293.1: *Emergency lighting and exit signs for buildings - System design, installation and operation.*

"System U-Value" is a measure of the thermal transmittance, in W/m^2K, of a window system including glass, sash and frame, as registered under WERS.

"t-statistic of Independent Variable" means, for the purpose of clause 7A, a statistical test to verify the accuracy and significance of the estimated relationship between an Independent Variable and energy consumption for an energy model that is established using Regression Analysis.

"Total Cooling Seasonal Performance Factor" or **"TCSPF"** has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"Traffic Signals" means lighting referred to in *AS 2144 Traffic signal lanterns* series of standards.

"Transmission System" has the same meaning as in the Act.

"Treatment" is the offering of goods and services (and any subsequent provision, engagement and promotion activities) to the Treatment Group to deliver Energy Savings.

"Treatment Group" means, in relation to clause 8.9, the group of Sites selected to be offered the Treatment.

"Un-Switched Maintained Emergency Luminaire" has the same meaning as it has in the AS/NZS 2293.1: *Emergency lighting and exit signs for buildings - System design, installation and operation.*

"Unbiased Selection Method" means a randomisation technique which ensures that every Site in the Population has an equal chance of being selected into the Treatment Group. This does not require Treatment Group and Control Group to be of an equal size.

"Uncontaminated Wood Waste" has the same meaning as in the NSW Environment Protection Authority's *Eligible Waste Fuels Guidelines* as in force from time to time.

"Unsolicited Doorknocking" means the visiting of a person's business premises or residential premises for the purpose of contracting for, marketing of, or promoting, an activity that would otherwise be a Recognised Energy Savings Activity if not for clause 5.4(r), without that person having provided express prior consent to being visited for those purposes.

"Uplift Energy Savings" means, in relation to clause 8.9, is the difference in energy consumption between the Control Group and Treatment Group that is estimated to have taken place due to other Recognised Energy Saving Activities or activities excluded as ineligible under clause 5.4 of this Rule.

"Upper Consumption Threshold" has the same meaning as in the *National Energy Retail Law* (NSW).

"VEU" means the Victorian Energy Upgrades program established under the *Victorian Energy Efficiency Target Act 2007* (VIC).

"Warranty against defects" has the same meaning as it has in Schedule 2 of the *Competition and Consumer Act 2010* (Cth), also known as the Australian Consumer Law.

"WERS" means the Window Energy Rating Scheme managed by the Australian Window Association.

"Working Order", when referring to an existing Lamp or Luminaire, means being capable (to the satisfaction of the Scheme Administrator) of providing continuous, fault-free illumination at a level which is at least 50% of the level provided by the equipment when new.

"Zoned Energy Rating Label" means a label that assists consumers compare the energy efficiency and energy consumption of air conditioning products covered by the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019* in different climate zones.

10.2 Simplified outlines and notes in this Rule do not form part of this Rule.

10.3 (deleted)

10.4 The terms and expressions used in this Rule have the same meaning as they have for the purposes of Schedule 4A of the Act, unless otherwise defined by this clause 10.

10.4A.1 In this Rule:

(a) subject to clauses 5.3(d) and 10.4A.2, any reference to an "AS" standard or "AS/NZS" standard is taken to be a reference to that standard as in force from time to time; and

(b) any reference to an Act or Instrument (including Australian Commonwealth and New Zealand legislation) is taken to be a reference to that Act or Instrument as in force from time to time.

10.4A.2 A reference to AS/NZS 4234 in Activity Definitions D17, D18, D19, D20, D21, F16 and F17 means either:

(a) AS/NZS 4234:2021, or as updated from time to time; or

(b) If the Scheme Administrator has Published a notice under this clause, the version or versions of AS/NZS 4234 specified in that notice.

10.5 A reference to accreditation with respect to a Recognised Energy Saving Activity means accreditation as an Accredited Certificate Provider in respect of that Recognised Energy Saving Activity.

11 Savings and Transitional Arrangements

Applications for registration of Energy Savings Certificates made between 28 April 2017 and 30 June 2017

11.1 "Previous Rule" means the Energy Savings Scheme Rule of 2009 as in force immediately prior to the commencement of the Energy Savings Scheme (Amendment No. 1) Rule 2017.

An Accredited Certificate Provider may calculate Energy Savings pursuant to the Previous Rule for the calculation of Energy Savings used to create Energy Savings Certificates for which an application for registration is made after 28 April 2017 if all of the following criteria are satisfied:

(a) the Implementation Date of the relevant Implementation is prior to 28 April 2017;

(b) no previous applications to register Energy Savings Certificates in respect of that Implementation have been made prior to 28 April 2017; and

(c) an application to register Energy Savings Certificates in respect of those Energy Savings is made on or before 30 June 2017.

Definitions of Energy Saver and Recognised Energy Saving Activity

11.2 Notwithstanding clause 5.2, an Accredited Certificate Provider may create Energy Savings Certificates in respect of the Additional Energy Savings of an Implementation for which they are the Energy Saver in accordance with their Prior Accreditation, if the initial Energy Savings Certificates for that Implementation were created on or before 30 June 2014.

(deleted)

Creation of Energy Savings Certificates

11.3 (deleted)

11.4 Clause 6.2 does not apply to Energy Savings Certificates created in respect of the Additional Energy Savings of an Implementation if the initial Energy Savings Certificates for that Implementation were created on or before 30 June 2014.

11.5 (deleted)

11.6 (deleted)

11.7 (deleted)

11.8 (deleted)

Transitional arrangements for calculation of Energy Savings under the Commercial Lighting Energy Savings Formula from 31 July 2018 until 31 October 2018

11.9 In clause 11.10:

"**2018 Energy Savings"** means Energy Savings for which the Implementation Date is on or before 31 October 2018 and for which an application to register Energy Savings Certificates in respect of those Energy Savings is made on or before 31 October 2018;

"Old Clause 9.4" means clause 9.4 and Tables A9.2, A10.1, A10.2 and A10.3 in Schedule A of the Rule as in force immediately before the commencement of Schedule 2 of the *Energy Savings Scheme (Amendment No. 1) Rule 2018*.

11.10 An Accredited Certificate Provider must calculate 2018 Energy Savings in accordance with Old Clause 9.4 for the purpose of creating Energy Savings Certificates under the Commercial Lighting Energy Savings Formula after 31 July 2018.

General transitional arrangements arising from the *Energy Savings Scheme (Amendment No. 1) Rule 2020* for calculation of Energy Savings

11.11 Subject to clauses 11.12 to 11.15, an Accredited Certificate Provider must calculate Energy Savings from an Implementation in accordance with the Rule as in force immediately before the commencement of the *Energy Savings Scheme (Amendment No. 1) Rule 2020*, where the Implementation Date determined in accordance with the *Energy Savings Scheme (Amendment No. 1) Rule 2020* of the relevant Implementation is on or before 29 March 2020.

Project Impact Assessment Measurement & Verification method: transitional arrangements arising from the *Energy Savings Scheme (Amendment No. 1) Rule 2020* for calculation of Energy Savings

11.12 Clause 7A.5A does not apply to Energy Savings Certificates of an Implementation with an Implementation Date on or before 14 August 2020.

NABERS Baseline sub-method: transitional arrangements arising from the *Energy Savings Scheme (Amendment No. 1) Rule 2020* for calculation of Energy Savings

11.13 Where the following criteria is satisfied:

(a) Calculation Method 1 of clause 8.8 of the previous versions of the Rule has been used to calculate Energy Savings for Implementation with an Implementation Date on or before 29 March 2020; and

(b) an application to register Energy Savings Certificates in respect of those Energy Savings is made on or before 30 June 2021,

an Accredited Certificate Provider may calculate Energy Savings using Calculation Method 1 set out in clause 8.8 of the Rule as in force immediately before the commencement of the *Energy Savings Scheme (Amendment No. 1) Rule 2020*. When calculating these Energy Savings, an Accredited Certificate Provider must:

(c) use Benchmark Rating Index of the relevant NABERS Rating tool and Building Category of 2020 (Table A20 of the previous Rule) for years 2020-2022, and use 0.5 star higher Index from 2023 and onwards; and

(d) only calculate Energy Savings within the period finishing seven years from the end date of the Rating Period applicable to the NABERS Rating used to create Energy Savings Certificates using Calculation Method 1 for the first time.

11.14 (deleted)

Installation of High Efficiency Appliances for Businesses sub-method: transitional arrangements arising from the *Energy Savings Scheme (Amendment No. 1) Rule 2020* for calculation of Energy Savings

11.15 An Accredited Certificate Provider may calculate Energy Savings from an Implementation in accordance with Activity Definition F1 of the Rule:

(a) as in force immediately before the commencement of the Energy Savings Scheme (Amendment No. 1) Rule 2020; or
(b) in Schedule F (as amended by the Energy Savings Scheme (Amendment No. 2) Rule 2020),

where the Implementation Date of the relevant Implementation is before the commencement date of the *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020*.

To avoid doubt, this clause 11.15 does not apply to any Implementation that has an Implementation Date on or after the commencement date of the *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020.*

General transitional arrangements arising from the *Energy Savings Scheme (Amendment No. 1) Rule 2021* for calculation of Energy Savings

11.16 Subject to clauses 11.17 to 11.18, an Accredited Certificate Provider must calculate Energy Savings from an Implementation in accordance with the Rule as in force immediately before the commencement of the *Energy Savings Scheme (Amendment No. 1) Rule 2021*, where the Implementation Date of the relevant Implementation is on or before 27 February 2022.

Home Energy Efficiency Retrofits sub-method: transitional arrangements arising from the *Energy Savings Scheme (Amendment No. 1) Rule 2021* for calculation of Energy Savings

11.17 An Accredited Certificate Provider must only calculate Energy Savings from an Implementation in accordance with Activity Definitions D17, D18, D19, D20 and D21 of Schedule D, where the Implementation Date is on and from 1 April 2022.

11.18 An Accredited Certificate Provider must only calculate Energy Savings from an Implementation in accordance with Activity Definitions F16 and F17 of Schedule F, where the Implementation Date is on and from 1 April 2022.

Saving of references to former Activity Definitions amended by the *Energy Savings Scheme (Amendment No. 1) Rule 2021*

11.19 On and from the date of commencement of the *Energy Savings Scheme (Amendment No. 1) Rule 2021*, a reference in a notice of accreditation as an Accredited Certificate Provider to both Activity Definition D3 and Activity Definition D4 under the Rule as in force immediately before the commencement of the *Energy Savings Scheme (Amendment No. 1) Rule 2021*, is taken to be a reference to Activity Definition D16.

Installation of High Efficiency Appliances for Businesses sub-method: transitional arrangement for co-payment requirement arising from the Energy Savings Scheme (Amendment No. 1) Rule 2022

11.20 Clause 9.9.1(e) does not apply to the installation of a refrigerated cabinet under Activity Definition F1.1 or F1.2 where both of the following conditions are met:

(a) the Scheme Administrator is satisfied that a contract with the Purchaser for the installation of that refrigerated cabinet was executed before 1 August 2022; and

(b) the Implementation Date is before 15 August 2022.

11.21 On and from the date of commencement of the *Energy Savings Scheme (Amendment No. 1) Rule 2022*, a reference in a notice of accreditation as an Accredited Certificate Provider to Activity Definition F1 under the Rule as in force immediately before the commencement of the *Energy Savings Scheme (Amendment No. 1) Rule 2022*, is taken to be a reference to Activity Definition F1.1 and F1.2.

General transitional arrangement arising from the Energy Savings Scheme (Amendment No. 1) Rule 2024

11.22 Where the Implementation Date of an Implementation is before 19 June 2024, an Accredited Certificate Provider must calculate Energy Savings from that Implementation in accordance with this Rule as in force immediately after the commencement of the *Energy Savings Scheme (Amendment No.1) Rule 2023*.

General transitional arrangement arising from the Energy Savings Scheme (Amendment No. 1) Rule 2025

11.23 Where the Implementation Date of an Implementation is before 12 September 2025, an Accredited Certificate Provider must calculate Energy Savings from that Implementation in accordance with this Rule as in force immediately after the commencement of the *Energy Savings Scheme (Amendment No.1) Rule 2024*.

General transitional arrangement arising from the Energy Savings Scheme (Amendment No. 1) Rule 2026

11.24 Where the Implementation Date of an Implementation is before 1 July 2026, an Accredited Certificate Provider must calculate Energy Savings from that Implementation in accordance with this Rule as in force immediately after the commencement of the *Energy Savings Scheme (Amendment No.1) Rule 2025.*

Schedule A – Default Factors and Classifications

Table A9.1: Standard Equipment Classes for Lighting Upgrades

Equipment Class	Definition
T12 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 38.1mm. These are also referred to as T38.
T8 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 25.4mm. These are also referred to as T26.
T5 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 15.9mm. These are also referred to as T16.
T5 or T8(T9) Circular fluorescent Lamp	A double-capped circular fluorescent Lamp with a typical tube diameter of 16mm or 29mm as defined by *AS/NZS 4782.1 Double-capped fluorescent lamps – Performance specifications*. These are also referred to as T9.
Compact fluorescent Lamp with non-integrated ballast (CFLn)	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.
Compact fluorescent Lamp with integrated ballast (CFLi)	A Self-ballasted compact fluorescent Lamp as defined by *AS/NZS 4847 Self-ballasted lamps for general lighting services.*
Tungsten halogen Lamp (240V)	A Tungsten halogen Lamp as defined in *AS 4934 Incandescent lamps for general lighting service*, with a rated voltage of 240V.
Tungsten halogen Lamp (ELV)	A Tungsten halogen Lamp as defined in *AS 4934 Incandescent lamps for general lighting service*, with an ELV rating, typically 12V. These Lamps run off an Extra-low voltage lighting converter (ELC) as defined in *AS 4879.1.*
Infrared coated (IRC) halogen Lamp (ELV)	An ELV Tungsten halogen Lamp as defined in *AS 4934* where the halogen globe is coated with a reflective infrared coating which improves the efficiency of the globe.
Metal halide Lamp	A discharge Lamp classified as a Metal halide Lamp as defined *by IEC 61167 Metal halide lamps – Performance specification.*
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.*
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.*
Lighting for Roads and Public Spaces or Traffic Signals (other than LED lighting)	Lighting for Roads and Public spaces as defined by *AS 1158 Lighting for roads and public spaces.*

Table A9.2: Lamp Circuit Power (LCP) values for Standard Equipment Classes

Equipment Class	Control Gear	LCP (Watts)	Notes
T8 or T12 linear fluorescent Lamp or T8(T9) or T12 circular fluorescent Lamp	Ballast EEI = A1	NLP + 2	
	Ballast EEI = A2	NLP	
	Ballast EEI = A3	NLP + 2	
	Ballast EEI = B1	NLP + 6	
	Ballast EEI = B2	NLP + 8	
	Ballast EEI = C	NLP + 10	
	Ballast EEI = D	NLP + 12	
	EEI Unknown (Electronic ballast)	NLP + 2	

Equipment Class	Control Gear	LCP (Watts)	Notes
	EEI Unknown (Magnetic ballast)	NLP + 10	
T5 linear fluorescent Lamp or T5 circular fluorescent Lamp	Ballast EEI = A1	1.13 × NLP + 2.5	
	Ballast EEI = A2	1.08 × NLP + 1.5	
	Ballast EEI = A3	1.13 × NLP + 2.5	
	EEI = Unknown (Electronic ballast)	1.13 × NLP + 2.5	
Compact fluorescent Lamp with non-integrated ballast (CFLn)	Ballast EEI = A1	NLP + 3	
	Ballast EEI = A2	NLP + 1	
	Ballast EEI = A3	NLP + 3	
	Ballast EEI = B1	NLP + 5	
	Ballast EEI = B2	NLP + 7	
	Ballast EEI = C	NLP + 9	
	Ballast EEI = D	NLP + 11	
	EEI Unknown (Electronic ballast)	NLP + 3	
	EEI Unknown (Magnetic ballast)	NLP + 9	
Compact fluorescent Lamp with integrated ballast (CFLi)	Built In	NLP	
Tungsten halogen Lamp (240V)	Built In	NLP	
Tungsten halogen Lamp (ELV) or Infrared coated (IRC) halogen Lamp (ELV)	Magnetic transformer	1.25 × NLP	If the NLP of the Incumbent Lamp exceeds 35W, the LCP is to be calculated using an NLP of 35W.
	Electronic transformer	1.08 × NLP	
Metal halide Lamp	Magnetic non-integrated ballast (reactor type)	1.05 × NLP + 14	If the Incumbent Lamp is located indoors and has an NLP exceeding 400W, the LCP is to be calculated using an NLP of 400W. If the Incumbent Lamp is located outdoors (evidenced to the satisfaction of the Scheme Administrator), the LCP is to be calculated using the NLP of the Incumbent Lamp.
	Magnetic non-integrated ballast (constant wattage type)	1.07 × NLP + 22	
	Electronic non-integrated ballast	1.10 × NLP + 0.9	
	Built In	NLP	If the Incumbent Lamp is located indoors and has an NLP exceeding 450W, the LCP is to be calculated using an NLP of 450W. If the Incumbent Lamp is located outdoors (evidenced to the satisfaction of the Scheme Administrator), the LCP is to be calculated using the NLP of the Incumbent Lamp.
Mercury vapour Lamp	Magnetic non-integrated ballast	1.03 × NLP + 11	If the Incumbent Lamp is located indoors and has an NLP exceeding 400W, the LCP is to be calculated using an NLP of 400W.

Equipment Class	Control Gear	LCP (Watts)	Notes
			If the Incumbent Lamp is located outdoors (evidenced to the satisfaction of the Scheme Administrator), the LCP is to be calculated using the NLP of the Incumbent Lamp.
	Built In	NLP	If the Incumbent Lamp is located indoors and has an NLP exceeding 450W, the LCP is to be calculated using an NLP of 450W. If the Incumbent Lamp is located outdoors (evidenced to the satisfaction of the Scheme Administrator), the LCP is to be calculated using the NLP of the Incumbent Lamp.
High pressure sodium (HPS) Lamp	Magnetic ballast	1.05 × NLP + 13	
Lighting for Roads and Public Spaces or Traffic Signals (other than LED lighting)	Built in or Independent	Lighting Load Table Published by AEMO or relevant regulator.	An entire traffic signal unit or Integrated Luminaire is used as the basis for calculation, rather than individual Lamps.

Table A9.3: Other Equipment Classes for Lighting Upgrades

Equipment Class	Definition
T5 adaptor kit	Any equipment that enables a T8 or T12 Luminaire to accommodate or provide physical support to a T5 Lamp or Luminaire.
Retrofit Luminaire - LED Linear Lamp	A T5, T8 or T12 Luminaire that has been retrofitted with an LED linear Lamp in place of the linear fluorescent Lamp. This cannot involve modification to the wiring of the Luminaire other than removal, replacement or modification of the starter.
LED Lamp Only – ELV	An LED Lamp that runs off an existing Extra-low voltage lighting converter (ELC) designed for retrofitting into an existing Luminaire or Lamp holder. These are typically used as a replacement for ELV Tungsten halogen Lamps.
LED Lamp Only – 240V Self Ballasted	A self-ballasted LED Lamp as defined by AS/NZS 62560 Self-ballasted LED lamps for general lighting services by voltage > 50 V. These Lamps are connected directly to a 240V supply.
Induction Luminaire	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.
LED Lamp and Driver	A LED-reflector Lamp and matching LED Driver intended as an alternative to a Mirrored Reflector Halogen Lamp.
Modified Luminaire –LED Linear Lamp	A T5, T8 or T12 luminaire that has been modified for use with an LED linear Lamp. This involves modifying, removing or rendering redundant any wiring or structure of the Luminaire, beyond the replacement of a starter.
LED Luminaire – fixed type	An LED Luminaire intended for use as a fixed luminaire as defined in AS/NZS 60598.2.1 Luminaires – Particular requirements – Fixed general purpose luminaires.
LED Luminaire – Linear Lamp	An LED Luminaire intended for use as an alternative to a linear fluorescent Luminaire, where the Luminaire houses a matching Linear LED tube or a linear array of integrated LEDs. Where the Luminaire uses a Linear LED tube, the Luminaire must not be compatible with a linear fluorescent Lamp.
LED Luminaire – floodlight	An LED Luminaire intended for use as a floodlight as defined in AS/NZS 60598.2.5 Luminaires – Particular requirements – Floodlights.
LED Luminaire – recessed	An LED Luminaire intended for use as a recessed luminaire as defined in AS/NZS 60598.2.2 Luminaires – Particular requirements – Recessed luminaires.
LED Luminaire – high/lowbay	An LED Luminaire intended for use as high-bay or low-bay lighting.
LED Luminaire – streetlight	An LED Luminaire intended for use as a streetlight as defined in AS/NZS 60598.2.3 Particular requirements – Luminaires for road and street lighting.

Equipment Class	Definition
LED Luminaire – emergency lighting	An LED Luminaire intended for use as an Emergency lighting luminaire as defined in AS/NZS 60598.2.22 Particular requirements – Luminaires for emergency lighting.
LED Luminaire – hospital use	An LED Luminaire intended for use in the clinical areas of a hospital or health care building as defined in AS/NZS 60958.2.25 Particular requirements – Luminaires for use in clinical areas of hospitals and health care buildings.
Other Emerging Lighting Technology	Any lighting equipment not defined above.

Table A9.4: Lamp Circuit Power (LCP) values and Equipment Requirements for other Equipment Classes for Lighting Upgrades

Equipment Class	Control Gear	LCP Value	Equipment Requirement (Equipment being installed)	Equipment Requirement (Equipment being removed)
T5 Adaptor Kit	Not Applicable (ineligible)	As Published by the Scheme Administrator	Ineligible	Must demonstrate the LCP to the satisfaction of the Scheme Administrator.
Retrofit Luminaire – LED Linear Lamp	Not Applicable(ineligible)	As Published by the Scheme Administrator	Ineligible	
LED Lamp Only – ELV	Built In + Existing Magnetic Transformer (Excluding clause 9.8)	1.25 × NLP as Published by Scheme Administrator	Must meet product requirements and minimum performance specifications for Lamp Life, electro-magnetic compatibility (where applicable), luminous efficacy, power factor and LCP as evidenced by: (a) a certification scheme accepted by the Scheme Administrator, including but not limited to a Standard Luminaire list; and (b) test reports from an accredited laboratory, in accordance with requirements Published by the Scheme Administrator; or (c) compliance with a relevant AS/NZS standard for the relevant Equipment Class recognised by the Scheme Administrator; or (d) demonstrated product acceptance under schedules of the VEU program recognised as relevant by the Scheme Administrator including compliance with any additional Equipment Requirements Published by the Scheme Administrator.	
	Built In + Existing Electronic Transformer (Excluding clause 9.8)	1.08 × NLP as Published by Scheme Administrator		
	Generic ballast (for use in Activity Definition E1 only)	1.165 x NLP as Published by Scheme Administrator		
LED Lamp Only – 240V Self Ballasted	Built In	As Published by the Scheme Administrator		
Induction Luminaire	Built In or Independent			
LED Lamp and Driver				
Modified Luminaire – LED Linear Lamp				
LED Luminaire – fixed type				
LED Luminaire – Linear Lamp				
LED Luminaire – floodlight				
LED Luminaire – recessed				
LED Luminaire – high/lowbay				
LED Luminaire – streetlight				

LED Luminaire – emergency lighting				
LED Luminaire – hospital use				
Other Emerging Lighting Technology				

Table A9.5: Control gear for Lighting Upgrades

Control Gear	Definition
Magnetic ballast	A Ferromagnetic ballast as defined in *AS/NZS 4783 Performance of electrical lighting equipment – Ballasts for fluorescent lamps*
Electronic ballast	An A.C. supplied electronic ballast as defined in *AS/NZS 4783 Performance of electrical lighting equipment – Ballasts for fluorescent lamps*
Magnetic ballast (reactor type)	An electromagnetic ballast that use 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.
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
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.*
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.*

Table A9.6: Default Lamp Life for Lighting Upgrades

Type of Lamp	Lamp Life (hours)
Standard equipment classes defined in Table A9.1	As per product labelling.
Other equipment classes defined in Table A9.3	As Published by the Scheme Administrator.

Table A10.1: Asset Lifetimes for Lighting Upgrades

Activity		Asset Lifetime (years)
Replacement of: • Luminaire, or • Control Gear (not integrated into Lamp).		Refer to Table A10.6
Replacement of: • Lamp Only.		Lamp Life ÷ Annual Operating Hours (Where Lamp Life is measured in accordance with Table A9.6 and is a maximum of 30,000 hours) Maximum Asset Lifetime: refer to Table A10.6
Installation of: • Control System as listed in Table A10.4 where the Lighting Upgrade only consists of the installation of a Control System		Maximum Asset Lifetime = 5 years

Table A10.2: Operating Hours for Lighting Upgrades by space type

Space Type	Annual Operating Hours (hours per annum)	Building/Space Group
Auditorium, church and public hall	2,000	A (Others)
Board room and conference room	3,000	B (Office)
Carpark – general (undercover) and Car Park - entry zone	7,000	C (Industrial)
Carpark – general (open air)	4,500	C (Industrial)
Common rooms, spaces, corridors in a BCA Class 2 building (including stairways and lift cars)	7,000	A (Others)

Space Type	**Annual Operating Hours (hours per annum)**	**Building/Space Group**
Control room, switch room, and the like – intermittent monitoring and constant monitoring	Value in Table A10.3 for BCA Classification of the surrounding space	See Table A10.3
Corridors	Value in Table A10.3 for BCA Classification of the surrounding space	See Table A10.3
Courtroom	2,000	A (Others)
Dormitory of a BCA Class 3 building used for sleeping only or sleeping and study	3,000	A (Others)
Entry lobby from outside the building	Value in Table A10.3 for BCA Classification of the surrounding space.	See Table A10.3
Health-care - children's ward, examination room, patient ward, all patient care areas including corridors where cyanosis lamps are used	6,000	A (Others)
Health and fitness centres and gymnasia operations, classified as Division R (9111) in the Australian and New Zealand Standard Industrial Classification **Note**: this only includes health and fitness centres and gymnasia operations that are membership-based, whose members' primary purpose is to frequent these operations	5,100	A (Others)
Kitchen and food preparation area	Value in Table A10.3 for BCA Classification surrounding space	See Table A10.3
Laboratory - artificially lit to an ambient level of 400 lx or more	3,000	A (Others)
Library - stack and shelving area, reading room and general areas	3,000	A (Others)
Lounge area for communal use in a BCA Class 3 building or BCA Class 9c aged care building	7,000	A (Others)
Un-Switched Maintained Emergency Luminaire	8,500	See Table A10.3
Switched Maintained Emergency Luminaire with a Control System listed Table A10.4 or Table A10.4A	8,500	See Table A10.3
Museum and gallery - circulation, cleaning and service lighting	2,000	A (Others)
Office	3,000	B (Office)
Plant room	Value in Table A10.3 for BCA Classification of the surrounding space	See Table A10.3
Restaurant, café, bar, hotel lounge and a space for the serving and consumption of food or drinks that fall under Division H - Accommodation and food services as defined in the Australian and New Zealand Standard Industrial Classification	5,000	D (Retail)
Restaurant, café, bar, hotel lounge and a space for the serving and consumption of food or drinks that fall under Division R – Arts and Recreation Services as defined in the Australian and New Zealand Standard Industrial Classification	2,000	D (Retail)
Retail space including a museum and gallery whose purpose is the sale of objects	5,000	D (Retail)

Space Type	Annual Operating Hours (hours per annum)	Building/Space Group
School - general purpose learning areas and tutorial rooms	3,000	A (Others)
Sole-occupancy unit of a BCA Class 3 or 9c building	3,000	A (Others)
Storage	5,000	A (Others)
Service area, cleaner's room and the like	Value in Table A10.3 for BCA Classification of the surrounding space	See Table A10.3
Toilet, locker room, staff room, rest room and the like	Value in Table A10.3 for BCA Classification of the surrounding space	See Table A10.3
Wholesale storage and display area with a vertical illuminance target of 160 lx (including distribution centres)	5,000	C (Industrial)
Stairways, including fire-isolated stairways	See Table A10.3	See Table A10.3
Lift cars	See Table A10.3	See Table A10.3
Other spaces not defined above	Value in Table A10.3 for BCA Classification of space	See Table A10.3

Table A10.3: Annual Operating Hours for Lighting Upgrades by building type

Building Classification	Annual Operating Hours (hours per annum)	Building/Space Group
BCA Class 2 buildings (Common Areas)	7,000	A (Others)
BCA Class 3 buildings (Common Areas)	7,000	A (Others)
BCA Class 3 buildings (other than Common Areas)	3,000	A (Others)
BCA Class 5 buildings	3,000	B (Office)
BCA Class 6 buildings	5,000	D (Retail)
BCA Class 7a buildings (open air car parks)	4,500	C (Industrial)
BCA Class 7a buildings (undercover car parks)	7,000	C (Industrial)
BCA Class 7b buildings	5,000	C (Industrial)
BCA Class 8 buildings (other than ANZSIC Division C, Manufacturing)	3,000	A (Others)
BCA Class 8 buildings (ANZSIC Division C, Manufacturing)	5,000	C (Industrial)
BCA Class 9a and 9c buildings	6,000	A (Others)
BCA Class 9b buildings	2,000	A (Others)
BCA Class 10a buildings	1,000	A (Others)
BCA Class 10b buildings	1,000	A (Others)
Roads and Public Spaces	4,500	E (Public)
Traffic Signals	8,760	E (Public)

Table A10.4: Control Systems and Control Multipliers for Lighting Upgrades

Control System	Definition	Control Multiplier (CM)
Occupancy Sensor	Control device that uses a motion sensor to detect the presence of people in the Space and adjusts the light output of the Luminaire. Each Occupancy Sensor must control a maximum of 6 Luminaires.	0.7
Daylight-Linked Control	Control device that uses a photoelectric cell to measure ambient daylight levels to automatically vary Luminaire light output. Each Luminaire must be located close to a significant source of daylight.	0.7

Control System	Definition	Control Multiplier (CM)
	(Not applicable to Carpark – general (open air) space type as referenced in Table A10.2 and BCA Class 7 (a) buildings (open air car parks) and Roads and Public Spaces building type as referenced in Table A10.3)	
Programmable Dimming	Luminaire light output controlled by pre-selected light levels (scenes) which are automatically selected according to time of day, photoelectric cell and/or Occupancy Sensor. Scenes must reduce lighting power.	0.85
Manual Dimming	Control device that allows a user to control Luminaire light output using a knob, slider or other manual input mechanism or by manually selecting a pre-programmed light level (scene).	0.9
Multiple Control Systems	Programmable Dimming and Manual Dimming	0.76
	Any other combination of 2 or more control systems above.	0.6
Voltage Reduction Units (VRU)	A control device that reduces the voltage applied to the Luminaire after start-up, when used with appropriate Luminaires.	As approved by Scheme Administrator
Specialised Occupancy Sensor	An Occupancy Sensor defined in Table A10.4A	CM in Table A10.4A as applicable

Table A10.4A: Occupancy Sensor Control Multipliers for Lighting Upgrades

Control System	Definition	Control Multiplier (CM) A (See Definition in 10.1)	Control Multiplier (CM) B (See Definition in 10.1)
Occupancy Sensor 1	Control device that uses a motion sensor to detect the presence of people in the Space and adjusts the light output of the Luminaire. Each Occupancy Sensor must control a maximum of 2 Luminaires.	0.55	$0.55 + 0.45 * (LCP_{low\ power}/LCP)$
Occupancy Sensor 2 in a Carpark – general (undercover) of a BCA class 2, 5 and 7a building.	Control device that uses a motion sensor to detect the presence of people in the parking area of a BCA class 2, 5 or 7a building and adjusts the light output of the Luminaire.	0.3	$0.3 + 0.7 * (LCP_{low\ power}/LCP)$
Occupancy Sensor 3 in the fire stairs of a BCA class 2, 5 and 7a building.	Control device that uses a motion sensor to detect the presence of people in the fire stairs of a BCA class 2, 5 or 7a building and adjusts the light output of the Luminaire.	0.15	$0.15 + 0.85 * (LCP_{low\ power}/LCP)$
Occupancy Sensor 4 in a corridor of a BCA class 2 building.	Control device that uses a motion sensor to detect the presence of people in the corridor area of a BCA class 2 building and adjusts the light output of the Luminaire.	0.25	$0.25 + 0.75 * (LCP_{low\ power}/LCP)$

Table A10.5: Air-conditioning Multipliers for Lighting Upgrades

Space Air-conditioning system	Air-conditioning Multiplier (AM)
Space air-conditioned during normal operating hours by a refrigerant-based air-conditioner.	1.07
Data Centre spaces air-conditioned by a refrigerant-based Air Conditioner.	1.3
Refrigerated rooms	1.3
All other spaces	1

Table A10.6: Asset Lifetime (in years) by Building/Space Group

Building/Space Group (See Table A10.2 and A10.3)	Asset Lifetime for Implementations at a Regional Site	Asset Lifetime for all other Implementations
A (Others)	10.0	7.3
B (Office)	10.0	7.4
C (Industrial)	11.7	11.7
D (Retail)	10.0	7.4
E (Public)	12.0	12.0

Table A11: Default Efficiency Improvement (DEI) for High Efficiency Motors

Rated output (kW)	DEI by number of poles			
	2 poles	4 poles	6 poles	8 poles
0.73 to < 2.6	0.033	0.030	0.039	0.047
2.6 to < 9.2	0.021	0.020	0.024	0.027
9.2 to < 41	0.014	0.014	0.016	0.017
41 to <100	0.010	0.009	0.010	0.010
100 to < 185	0.008	0.007	0.008	0.008

Table A12: Default Load Utilisation Factor for High Efficiency Motors – Where Business Classification and End-Use Service are known

Load Utilisation Factor	Refrigeration and freezing	Water/liquid pumping	Air compression	Air handling, fans, ventilation	Process Drives	Milling, mixing, grinding	Material handling/ conveying
Division A Agriculture, Forestry and Fishing	0.14	0.32	0.27	0.28	0.32	0.2	0.2
Division B Mining	0.09	0.36	0.32	0.41	0.32	0.32	0.28
Division C Manufacturing	0.28	0.32	0.27	0.32	0.27	0.24	0.28
Division D Electricity, Gas, Water and Waste Services	0.11	0.32	0.24	0.28	0.28	0.12	0.17
Division E Construction	0.09	0.24	0.15	0.15	0.17	0.14	0.2
Division F Wholesale Trade	0.2	0.14	0.07	0.13	0.13	0.03	0.11
Division G Retail Trade	0.17	0.09	0.07	0.13	0.13	0.03	0.07
Division H Accommodation and Food Services	0.24	0.11	0.04	0.14	0.13	0.09	0.11
Division I Transport, Postal and Warehousing	0.17	0.11	0.08	0.13	0.17	0.03	0.16
Division J Information Media and Telecommunications	0.11	0.09	0.04	0.1	0.11	0.03	0.03
Division K Financial and Insurance Services	0.09	0.05	0.04	0.06	0.06	0.03	0.03
Division L Rental, Hiring and Real Estate Services	0.09	0.05	0.04	0.06	0.06	0.03	0.03
Division M Professional, Scientific and Technical Services	0.17	0.07	0.05	0.08	0.08	0.04	0.03
Division N Administrative and Support Services	0.11	0.05	0.04	0.06	0.04	0.03	0.03
Division O Public Administration and Safety	0.09	0.05	0.04	0.06	0.04	0.03	0.03
Division P Education and Training	0.11	0.05	0.04	0.06	0.04	0.03	0.03
Division Q Health Care and Social Assistance	0.11	0.08	0.11	0.06	0.06	0.03	0.03
Division R Arts and Recreation Services	0.09	0.05	0.04	0.06	0.04	0.03	0.03
Division S Other Services	0.07	0.05	0.04	0.06	0.04	0.03	0.03

Table A13: Default Load Utilisation Factor for High Efficiency Motors – Where Business Classification or End-Use Service are not known

Rated output (kW)	LUF
0.73 to < 2.6	0.09
2.6 to < 9.2	0.10
9.2 to < 41	0.11
41 to < 100	0.13
100 to < 185	0.15

Table A14: Asset Life for High Efficiency Motors (t)

Rated output (kW) of High Efficiency Motor	t (Asset life (years))
0.73 to < 2.6	12
2.6 to < 9.2	15
9.2 to < 41	20
41 to < 100	22
100 to < 185	25

Table A16: Decay Factors for calculating future Energy Savings under the Project Impact Assessment Method (clause 7) or the Project Impact Assessment with Measurement and Verification Method (clause 7A)

Year	Decay Factor	
	Energy Savings Calculated using clause 7	Default Decay Factor for Energy Savings calculated using clause 7A
1	1.00	1.00
2	0.80	0.80
3	0.60	0.64
4	0.40	0.51
5	0.20	0.41
6	Not applicable	0.33
7	Not applicable	0.26
8	Not applicable	0.21
9	Not applicable	0.17
10	Not applicable	0.13

Table A17: End-Use Services

End-Use Services
Air heating and cooling
Air handling, fans, ventilation
Water heating
Water/liquid pumping
Refrigeration and freezing
Lighting
Cooking
Home entertainment
Computers, office equipment
Communications
Cleaning, washing
Process heat
Air compression
Process drives
Milling, mixing, grinding
Transport

End-Use Services
People movement, lifts, escalators
Materials handling, conveying
Other machines
Electricity supply
Unknown
Other End-Use Services as Published by the Scheme Administrator

Table A18: Business Classifications

Business Classification
A Agriculture, Forestry and Fishing
B Mining
C Manufacturing
D Electricity, Gas, Water and Waste Services
E Construction
F Wholesale Trade
G Retail Trade
H Accommodation and Food Services
I Transport, Postal and Warehousing
J Information Media and Telecommunications
K Financial and Insurance Services
L Rental, Hiring and Real Estate Services
M Professional, Scientific and Technical Services
N Administrative and Support Services
O Public Administration and Safety
P Education and Training
Q Health Care and Social Assistance
R Arts and Recreation Services
S Other Services
Residential
Unknown

Table A19: Distribution Loss Factors (DLF) for losses between the Subtransmission network and Low Voltage connection points

Distributor	Distribution District	DLF
Endeavour Energy	Endeavour Energy	1.054
Essential Energy	Essential Energy	1.074
AusGrid	AusGrid	1.043

Table A20: Benchmark NABERS Ratings Index

NABERS Rating tool	Building category	Year of NABERS Rating Period End Date					
		2015	2016	2017	2018	2019	2020 and onwards
Offices	Built prior to 1 November 2006	4.0	4.0	4.5	4.5	4.5	4.5
Offices	Built on or after 1 November 2006	5.0	5.0	5.5	5.5	5.5	5.5
Hotels	Built prior to 1 November 2006	3.0	3.5	3.5	3.5	3.5	3.5
Hotels	Built on or after 1 November 2006	4.0	4.5	4.5	4.5	4.5	4.5
Shopping Centres	Built prior to 1 November 2006	3.5	4.0	4.0	4.0	4.0	4.0
Shopping Centres	Built on or after 1 November 2006	4.5	5.0	5.0	5.0	5.0	5.0
Data Centres	Built prior to 1 November 2006	3.5	3.5	3.5	4.0	4.0	4.0
Data Centres	Built on or after 1 November 2006	4.5	4.5	4.5	5.0	5.0	5.0
Hospitals	Built prior to 1 November 2006	3.0	3.0	3.5	3.5	3.5	3.5
Hospitals	Built on or after 1 November 2006	4.0	4.0	4.5	4.5	4.5	4.5
Apartment Buildings	Built prior to 1 November 2006	3.0	3.0	3.0	3.5	3.5	3.5
Apartment Buildings	Built on or after 1 November 2006	4.0	4.0	4.0	4.5	4.5	4.5
Residential Aged Care	Built prior to 1 November 2006						3.0
Residential Aged Care	Built on or after 1 November 2006						3.5
Retirement Living	Any						3.0
Warehouses	Any						3.0
Cold Storage	Built prior to 1 November 2006						3.0
Cold Storage	Built on or after 1 November 2006						3.5
Schools	Any						3.0
Retail Stores	Any						3.0

Table A21: NABERS Annual Ratings Adjustment

NABERS Rating tool	Building category	Annual rating adjustment for Historical Baseline NABERS Rating that is 1 year old.	Annual ratings adjustment for Historical Baseline NABERS Rating that is 2 - 7 years old.
Offices	All	0	0.09
Hotels	All	0	0.04
Shopping Centres	All	0	0.13
Data Centres	All	0	0.04
Hospitals	All	0	0.04
Apartment Buildings	All	0	0
Residential Aged Care	All	0	0
Retirement Living	All	0	0
Warehouses	All	0	0
Cold Storage	All	0	0
Schools	All	0	0
Retail Stores	All	0	0

Table A22: Minimum statistical requirements that must be met when using Regression Analysis

Modelling Criteria	Minimum Requirement
t-statistic of Independent Variable	Absolute Value > 2
Adjusted Coefficient of Determination (Adjusted R^2) and Coefficient of Variation of the Root Mean Square Error (CV_{RMSE})	$CV_{RMSE} < 0.25$ for Adjusted $R^2 \geq 0.5$ $CV_{RMSE} < 0.1$ for Adjusted $R^2 < 0.5$

Table A23: Accuracy Factor according to energy model type and relative precision of Energy Savings estimate

Relative precision of Electricity Savings or Gas Savings estimate at a 90% confidence level	Accuracy Factor if an energy model developed under clause 7A.2 (a)(i) is used for the Baseline Energy Model or Operating Energy Model or both	Accuracy Factor for all other energy models
< 25%	0.9	1
25% - 50%	0.8	0.9
50% - 75%	0.7	0.8
75% - 100%	0.5	0.6
100% - 150%	0.3	0.4
150% - 200%	0.1	0.2
> 200%	0	0

Table A24: Regional Network Factors

Postcode of Site where Implementation occurred	Regional Network Factor
2311-2312	1.03
2321	1.03
2324	1.03
2329	1.03
2338-2490	1.03
2536-2537	1.03
2545-2551	1.03
2579-2594	1.03
2611	1.03
2618-2739	1.03
2787	1.03
2791-2844	1.03
2850-2880	1.03
3644	1.03
3691	1.03
3707	1.03
4375	1.03
4377	1.03
4380	1.03
4383	1.03
4385	1.03
All other postcodes	1

Table A25: Metropolitan Levy Area by postcode

Metropolitan Levy Area postcodes
2000-2011
2015-2050
2052
2060-2077
2079-2090
2092-2097
2099-2122
2125-2148
2150-2168

2170-2179
2190-2200
2203-2214
2216-2234
2250-2251
2256-2265
2267
2278
2280-2287
2289-2300
2302-2308
2314-2327
2334-2335
2500
2502
2505-2506
2508
2515-2519
2525-2530
2533-2536
2538-2541
2555-2560
2563-2567
2570
2571
2575-2579
2622
2745
2747-2750
2753-2763
2765-2770
2775

Table A26: AS/NZS 4234 Climate Zones for use with Heat pump hot water activities

Note: See Clause 10 Definition of BCA Climate Zone. "BCA Climate Zone" means a climate zone under the BCA (as in force from time to time). For information on the BCA climate zone to use for an Implementation, see ABCB Climate Map | Australian Building Codes Board (ABCB)

AS/NZS 4234 climate zone	BCA Climate Zone
HP3-AU	2, 3, 4, 5 or 6
HP5-AU	7 or 8

Table A27: AS/NZS 3823.4 Climate Zones for use with Air-conditioning activities

Postcodes	AS/NZS 3823.4 Climate Zone
1639	Average
2000	Average
2006-2011	Average
2015-2050	Average
2052	Average
2060-2077	Average

Postcodes	AS/NZS 3823.4 Climate Zone
2079-2090	Average
2092-2097	Average
2099-2123	Average
2125-2128	Average
2130-2148	Average
2150-2168	Average
2170-2179	Average
2190-2200	Average
2203-2214	Average
2216-2234	Average
2250-2251	Average
2256-2265	Average
2267	Average
2278	Average
2280-2287	Average
2289-2300	Average
2302-2309	Average
2311-2312	Average
2314-2327	Average
2328-2329	Cold
2330-2331	Average
2333	Cold
2334-2335	Average
2336-2347	Cold
2350-2361	Cold
2365	Cold
2369-2372	Cold
2379-2382	Cold
2386-2388	Average
2390	Average
2395-2396	Cold
2397-2402	Average
2403-2404	Cold
2405-2406	Average
2408-2411	Average
2415	Average
2420-2431	Average
2439-2441	Average
2443-2450	Average
2452	Average
2453	Cold
2454-2456	Average
2460	Average
2462-2466	Average
2469-2474	Average
2475-2476	Cold
2477-2479	Hot
2480	Average
2481-2490	Hot
2500	Average
2502	Average
2505-2506	Average
2508	Average
2515-2519	Average
2522	Average
2525-2526	Average
2527	Cold
2528	Average
2529	Cold
2530	Average
2533-2541	Cold

Postcodes	AS/NZS 3823.4 Climate Zone
2545-2546	Cold
2548-2551	Cold
2555-2560	Average
2563-2574	Average
2575-2588	Cold
2590	Cold
2594	Cold
2600-2607	Cold
2609	Cold
2611-2612	Cold
2614-2615	Cold
2617-2633	Cold
2640-2647	Cold
2648	Average
2649-2653	Cold
2655-2656	Cold
2658-2661	Cold
2663	Cold
2665-2666	Cold
2668	Cold
2669	Average
2671	Cold
2672	Average
2675	Average
2680-2681	Average
2700	Average
2701-2702	Cold
2703	Average
2705-2707	Average
2710-2711	Average
2712	Cold
2713-2717	Average
2720-2722	Cold
2725-2727	Cold
2729-2730	Cold
2730-2739	Average
2745	Average
2747-2750	Average
2752-2763	Average
2765-2770	Average
2773-2775	Average
2776	Cold
2777	Average
2778-2780	Cold
2782-2787	Cold
2790-2795	Cold
2797-2800	Cold
2803-2810	Cold
2820-2821	Cold
2823-2825	Cold
2827-2830	Cold
2831-2836	Average
2839-2840	Average
2842-2850	Cold
2852	Cold
2864-2871	Cold
2873-2876	Cold
2877-2880	Average
2898-2899	Average
3500	Average
3585-3586	Average

Postcodes	AS/NZS 3823.4 Climate Zone
3644	Cold
3707	Cold
All other NSW postcodes Excluding PO boxes	Average

Table A28 (deleted)

Schedule B – Activity Definitions for the Sale of New Appliances (clause 9.3)

(deleted)

Schedule C – Activity Definitions for the Removal of Old Appliances (clause 9.7)

Activity Definition C1

Name of Activity

REMOVE A SPARE REFRIGERATOR OR FREEZER

Equipment Requirements

1. The Site where the End-User Equipment is located must be a Residential Building.
2. The End-User Equipment must be a Refrigerator or Freezer (or combination) that may be classified as Group 1, 2, 3, 4, 5T, 5B, 5S, 6C, 6U or 7 according to *AS/NZS 4474.1* and *4474.2 Performance of household electrical appliances—Refrigerating appliances.*
3. The capacity of the Refrigerator or Freezer (as defined in AS/NZS 4474) must be 200 litres or more.
4. The Refrigerator or Freezer must be in working order.
5. There must be another Refrigerator or Freezer (as appropriate) at the Site that provides primary refrigeration or freezing services, located in, or closer to, the kitchen.
6. As a result of the activity there must be 1 fewer spare refrigerators and freezers at the Site.

Equipment Electricity Savings

Deemed Equipment Electricity Savings = 5.7 MWh per spare refrigerator or freezer removed

Lifetime (for information purposes only)

Lifetime = 7 years.

Activity Definition C2

Name of Activity

REMOVE A PRIMARY REFRIGERATOR OR FREEZER

Equipment Requirements

1. The Site where the End-User Equipment is located must be a Residential Building or Small Business Site.
2. The End-User Equipment must be a Refrigerator or Freezer (or combination) that may be classified as Group 1, 2, 3, 4, 5T, 5B, 5S, 6C, 6U or 7 according to *AS/NZS 4474.1* and *4474.2 Performance of household electrical appliances—Refrigerating appliances.*
3. The capacity of the Refrigerator or Freezer (as defined in AS/NZS 4474) must be 200 litres or more.
4. The Refrigerator or Freezer must be in working order.
5. The activity may be carried out in combination with the delivery of a new refrigerator or freezer.

Equipment Electricity Savings

Deemed Equipment Electricity Savings = 2.4 MWh per primary refrigerator or freezer removed

Lifetime (for information purposes only)

Lifetime = 7 years.

Schedule D – Activity Definitions for General Activities for Home Energy Efficiency Retrofits (clause 9.8)

Activity Definition D1

Name of Activity

REPLACE AN EXTERNAL SINGLE GLAZED WINDOW OR DOOR WITH A THERMALLY EFFICIENT WINDOW OR DOOR

Eligibility Requirements

1. The existing window must be single glazed.
2. The existing door must be a fully single glazed framed unit.
3. The existing window or door must be an external window or door of a Residential Building or Small Business Site.

Equipment Requirements

1. The new End-User Equipment must be a window or door product (glazing and frame) rated by WERS.
2. The new End-User Equipment can be either a single glazed or double glazed or triple glazed insulating glass unit.
3. The window or door must comply with AS 2047 and AS 1288.
4. The window or door must be rated as 6 Star by WERS in accordance with the minimum requirements for a thermally efficient window or door as detailed in Table D1.1.
5. The window or door must have a warranty of at least 5 years.

Table D1.1 – Minimum requirements for a thermally efficient window or door

Window/ door rating	Minimum WERS star rating in heating mode	Minimum WERS rating in cooling mode	Maximum System U-Value (W/m^2K)
6 Star Window or Door	6 stars	3.5 stars	3

Implementation Requirements

The window or door must be installed in compliance with of AS 2047 and AS 1288.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor × Glazing Unit Area
Deemed Activity Gas Savings = Gas Savings Factor × Glazing Unit Area

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per m^2, are the values from Tables D1.2, D1.3, D1.4 and D1.5, corresponding to the Uw value of the window or door and the Site's location.
- *Glazing Unit Area*, in m^2, is the total window or door area of the thermally efficient window or door installed.
- Implementation of the Activity allows both Electricity Savings Factors and Gas Savings Factors to be applied, regardless of fuel used for heating or cooling at the premises.
- Uw is the System U-Value of the thermally efficient window or door.

Table D1.2 –Residential Building Electricity Savings Factors for thermally efficient windows or doors (MWh per m^2 of window or door replaced)

Window/ Door rating	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
Uw ≤ 3	0.13	0.21	0.11	0.17	0.25
Uw ≤ 2	0.16	0.26	0.14	0.21	0.30
Uw ≤ 1	0.19	0.30	0.16	0.26	0.35

Table D1.3 – Residential Building Gas Savings Factors for thermally efficient windows or doors (MWh per m^2 of window or door replaced)

Window/ Door rating	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
Uw ≤ 3	0.09	0.26	0.13	0.18	0.39
Uw ≤ 2	0.11	0.30	0.14	0.20	0.46
Uw ≤ 1	0.12	0.33	0.16	0.23	0.53

Table D1.4 – Small Business Site Electricity Savings Factors for thermally efficient windows or doors (MWh per m^2 of window or door replaced)

Window/ Door rating	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
Uw ≤ 3	0.35	0.38	0.26	0.41	0.27
Uw ≤ 2	0.50	0.54	0.39	0.59	0.38
Uw ≤ 1	0.66	0.72	0.54	0.81	0.50

Table D1.5 – Small Business Site Gas Savings Factors for thermally efficient windows or doors (MWh per m^2 of window or door replaced)

Window/ Door rating	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
Uw ≤ 3	0.01	0.04	0.02	0.02	0.09
Uw ≤ 2	0.01	0.04	0.02	0.02	0.10
Uw ≤ 1	0.00	0.04	0.02	0.02	0.10

Lifetime (for information purposes only)

Lifetime = 30 years.

Activity Definition D2

Name of Activity

MODIFY AN EXTERNAL WINDOW OR GLAZED DOOR BY INSTALLING SECONDARY GLAZING

Eligibility Requirements

1. The existing window must be single glazed.
2. The existing door must be a fully single glazed framed unit.
3. The existing window or door must be an external window or door of a Residential Building or Small Business Site.

Equipment Requirements

1. The End-User Equipment must be a secondary glazing product that retrofits a second glazing sheet (e.g. glass or acrylic or polycarbonate) to an existing single glazed window or door so as to form a still air gap between the specified product and the existing glazing.
2. The secondary glazing product when retrofitted must produce a window or door that is a 6 Star Window or Door in accordance with the minimum requirements for a thermally efficient window or door as detailed in Table D2.1.
3. The secondary glazing product must have a warranty of at least 5 years.

Table D2.1 – Minimum requirements for a thermally efficient window or door fitted with secondary glazing

Window/ Door rating	Minimum WERS star rating in heating mode	Minimum WERS rating in cooling mode	Maximum System U-Value (W/m^2K)
6 Star Window or Door	6 stars	3.5 stars	3

Implementation Requirements

The secondary glazing product must be fitted in compliance with AS 2047 and AS 1288 and in accordance with the manufacturer's instructions.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor × Glazing Unit Area
Deemed Activity Gas Savings = Gas Savings Factor × Glazing Unit Area

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per m^2, are the values from Tables D2.2, D2.3, D2.4 and D.5 corresponding to the Uw value of the window or door and the Site's location.
- *Glazing Unit Area*, in m^2, is the total window or door area of the window or door modified to be thermally efficient.
- Implementation of the Activity allows both Electricity Savings Factors and Gas Savings Factors to be applied, regardless of fuel used for heating or cooling at the premises.
- Uw is the System U-Value of the thermally efficient window or door

Table D2.2 – Residential Building Electricity Savings Factors for secondary glazing products (MWh per m^2 of window or door modified)

Window/ Door rating	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
Uw ≤ 3	0.06	0.11	0.06	0.09	0.13
Uw ≤ 2	0.08	0.13	0.07	0.11	0.15
Uw ≤ 1	0.10	0.15	0.08	0.13	0.18

Table D2.3 – Residential Building Gas Savings Factors for secondary glazing products (MWh per m^2 of window or door modified)

Window/ Door rating	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
Uw ≤ 3	0.05	0.13	0.06	0.09	0.20
Uw ≤ 2	0.05	0.15	0.07	0.10	0.23
Uw ≤ 1	0.06	0.17	0.08	0.11	0.26

Table D2.4 – Small Business Site Electricity Savings Factors for secondary glazing products (MWh per m^2 of window or door modified)

Window/ Door rating	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
Uw ≤ 3	0.18	0.19	0.13	0.21	0.14
Uw ≤ 2	0.25	0.27	0.20	0.30	0.19
Uw ≤ 1	0.34	0.37	0.27	0.41	0.25

Table D2.5 – Small Business Site Gas Savings Factors for secondary glazing products (MWh per m^2 of window or door modified)

Window/ Door rating	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
Uw ≤ 3	0.00	0.02	0.01	0.01	0.05
Uw ≤ 2	0.00	0.02	0.01	0.01	0.05
Uw ≤ 1	0.00	0.02	0.01	0.01	0.05

Lifetime (for information purposes only)

Lifetime = 10 years.

Activity Definition D3

(deleted)

Activity Definition D4

(deleted)

Activity Definition D5

Name of Activity

INSTALL A NEW HIGH EFFICIENCY POOL PUMP OR REPLACE AN EXISTING POOL PUMP WITH A HIGH EFFICIENCY POOL PUMP

Eligibility Requirements

1. This activity must be an installation of a new high efficiency pool pump or a replacement of an existing pool pump (whether operational or not) with a high efficiency pool pump.

Equipment Requirements

1. The new or replacement End-User Equipment must be registered in the GEMS Registry as complying with the *Greenhouse and Energy Minimum Standards (Swimming Pool Pump-units) Determination 2021*.
2. The new or replacement End-User Equipment must have a star rating, as recorded in the GEMS Registry, equal to or greater than 4.
3. The new or replacement End-User Equipment must have a warranty of at least 3 years.

Implementation Requirements

1. If there is any existing End-User Equipment, it must be removed.
2. The new or replacement End-User Equipment must be installed.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder, where required, in compliance with the relevant standards and legislation.

Activity Energy Savings

Deemed Activity Electricity Savings = (PAEC$_{baseline}$ – PAEC) x *Lifetime* / 1000

Where:

- *PAEC$_{baseline}$*, in kWh/year, is the value of PAEC$_{baseline}$ from Table D5.1 corresponding to the pool pump's *Maximum Tested Input Power*;
- *Maximum Tested Input Power*, in W, is the new or replacement End-User equipment's Input Power as recorded in the GEMS Registry, also known as "High" in the GEMS Registry;
- *PAEC,* in kWh/year*,* is the new or replacement End-User equipment's Projected Annual Energy Consumption, as recorded in the GEMS Registry, also known as Labelled Energy Consumption; and
- *Lifetime*, in years, is specified in Table D5.2.

Table D5.1 Baseline Projected Annual Energy Consumption (kWh/year)

Maximum Tested Input Power (W)	**PAEC$_{baseline}$ (kWh/year)**
<=1000	1300
>1000 and <=1500	1500
>1500 and <=2000	1700
>2000	2000

Lifetime

Table D5.2 Lifetime (in years)

End-User Equipment type	**Lifetime (years)**
All	10

Activity Definition D6

Note: This Activity Definition commences on a date notified by the Minister in the NSW Government Gazette.

Name of Activity

INSTALL CEILING INSULATION IN AN UNINSULATED CEILING SPACE

Eligibility Requirements

1. There must be no existing roof or ceiling insulation present in the ceiling space.
2. For the purposes of this Activity, ceiling spaces with single sheet reflective foil insulation hung below the roofing material are deemed to be uninsulated ceiling spaces.

Equipment Requirements

1. The insulation product used must comply with the performance requirements of AS/NZS 4859.1, as evidenced by test reports from an accredited NATA laboratory.
2. The insulation product must achieve a minimum winter R-value, when measured in accordance with AS/NZS 4859.1, of:
    - R3.0 if the Site is in BCA Climate Zone 2 or 3;
    - R3.5 if the Site is in BCA Climate Zone 4, 5 or 6;
    - R5.0 if the Site is in BCA Climate Zone 7 or 8

   after being adjusted for perimeter insulation in accordance with AS 3999.
3. The insulation product must have a warranty of at least 25 years.
4. Foil insulation products are not eligible to be used in this activity.

Implementation Requirements

1. The insulation product used must be installed in compliance with AS 3999 and the National Construction Code BCA Section J1.
2. Installers are required to have completed training courses CPCCOHS1001A; CPCCCM2010A; CPCCOHS2001A; CPCCPB3027A; CPCCPB3014A and other training requirements as Published by the Scheme Administrator.
3. Insulation must only be installed in ceiling spaces with an exposed roof.
4. Insulation must be installed in at least 95% of the ceiling area able to have insulation installed, after being adjusted for perimeter insulation in accordance with AS 3999.
5. Cut outs around ceiling penetrations such as downlights must be kept to the minimum permitted by regulation.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor × Insulation Area
Deemed Activity Gas Savings = Gas Savings Factor × Insulation Area

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per m^2, are the values from Tables D6.1 and D6.2 corresponding to the Site's building construction and location.
- *Insulation Area*, in m^2, is the total ceiling area that has had insulation product installed.
- Implementation of the Activity allows both Electricity and Gas Savings Factors to be applied, regardless of fuel used for heating or cooling at the premises.

Table D6.1 – Electricity Savings Factors (MWh per m^2 of ceiling insulation installed)

Climate zone	**BCA Climate Zones 2 and 3 Minimum R3.0**	**BCA Climate Zone 4 Minimum R3.5**	**BCA Climate Zones 5 and 6 Minimum R3.5**	**BCA Climate Zones 7 and 8 Minimum R5.0**
MWh per m2	0.16	0.29	0.17	0.47

Table D6.2 – Gas Savings Factor (MWh per m^2 of ceiling insulation installed)

Climate zone	**BCA Climate Zones 2 and 3 Minimum R3.0**	**BCA Climate Zone 4 Minimum R3.5**	**BCA Climate Zones 5 and 6 Minimum R3.5**	**BCA Climate Zones 7 and 8 Minimum R5.0**
MWh per m^2	0.09	0.18	0.11	0.30

Lifetime (for information purposes only)

Lifetime = 25 years.

Activity Definition D7

Note: This Activity Definition commences on a date notified by the Minister in the NSW Government Gazette.

Name of Activity

INSTALL CEILING INSULATION IN AN UNDER-INSULATED CEILING SPACE

Eligibility Requirements

1. There must be existing roof or ceiling insulation present in the ceiling space.
2. For the purposes of this Activity, ceiling spaces with single sheet reflective foil insulation hung below the roofing material are deemed to be uninsulated ceiling spaces.
3. The R-value of existing roof or ceiling insulation must be below 3.0 when measured in accordance with AS/NZS 4859.1.

Equipment Requirements

1. The insulation product used must comply with the performance requirements of AS/NZS 4859.1, as evidenced by test reports from an accredited NATA laboratory.
2. The insulation product must achieve a minimum winter R-value, when measured in accordance with AS/NZS 4859.1, of:
    - R3.0 if the Site is in BCA Climate Zone 2 or 3;
    - R3.5 if the Site is in BCA Climate Zone 4, 5 or 6;
    - R5.0 if the Site is in BCA Climate Zone 7 or 8

   after being adjusted for perimeter insulation in accordance with AS 3999.
3. The insulation product must have a warranty of at least 25 years.
4. Foil insulation products are not eligible to be used in this activity.

Implementation Requirements

1. The insulation product used must be installed in compliance with AS 3999 and the National Construction Code BCA Section J1.
2. Installers are required to have completed training courses CPCCOHS1001A; CPCCCM2010A; CPCCOHS2001A; CPCCPB3027A; CPCCPB3014A and other training requirements as Published by the Scheme Administrator.
3. Insulation must only be installed in ceiling spaces with an exposed roof.
4. Insulation must be installed in at least 95% of the ceiling area able to have insulation installed, after being adjusted for perimeter insulation in accordance with AS 3999.
5. Cut outs around ceiling penetrations such as downlights must be consistent with regulation requirements.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor × Insulation Area
Deemed Activity Gas Savings = Gas Savings Factor × Insulation Area

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per m^2, are the values from Tables D7.1 and D7.2 corresponding to the Site's building construction and location.
- *Insulation Area*, in m^2, is the total ceiling area that has had insulation product installed.
- Implementation of the Activity allows both Electricity and Gas Savings Factors to be applied, regardless of fuel used for heating or cooling at the premises.

Table D7.1 – Electricity Savings Factors (MWh per m^2 of ceiling insulation installed)

Climate zone	**BCA Climate Zones 2 and 3 Minimum R3.0**	**BCA Climate Zone 4 Minimum R3.5**	**BCA Climate Zones 5 and 6 Minimum R3.5**	**BCA Climate Zones 7 and 8 Minimum R5.0**
MWh per m2	0.01	0.03	0.02	0.04

Table D7.2 – Gas Savings Factors (MWh per m^2 of ceiling insulation installed)

Climate zone	**BCA Climate Zones 2 and 3 Minimum R3.0**	**BCA Climate Zone 4 Minimum R3.5**	**BCA Climate Zones 5 and 6 Minimum R3.5**	**BCA Climate Zones 7 and 8 Minimum R5.0**
MWh per m^2	0.01	0.02	0.01	0.03

Lifetime (for information purposes only)
Lifetime = 25 years.

Activity Definition D8

Note: This Activity Definition commences on a date notified by the Minister in the NSW Government Gazette.

Name of Activity

INSTALL UNDER-FLOOR INSULATION

Eligibility Requirements

1. There must be no existing ground floor insulation present.
2. The Site must have a suspended timber floor.

Equipment Requirements

1. The insulation product used must comply with the performance requirements of AS/NZS 4859.1 and achieve a minimum winter R-value of R2.5 when measured in accordance with AS/NZS 4859.1, as evidenced by test reports from an accredited NATA laboratory.
2. The insulation product must have a warranty of at least 25 years.
3. Foil insulation products are not eligible to be used in this activity.

Implementation Requirements

1. The Activity is restricted to ground floor suspended timber floor spaces.
2. Installers are required to have completed training courses CPCCOHS1001A; CPCCCM2010A; CPCCOHS2001A; CPCCPB3014A; and other training requirements as Published by the Scheme Administrator.
3. The insulation product must be installed in accordance with AS 3999 and the National Construction Code BCA Section J1.
4. Insulation must be installed in at least 95% of the ground floor area able to have insulation installed.
5. Insulation may only be applied to areas that have not been previously insulated.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor × Insulation Area
Deemed Activity Gas Savings = Gas Savings Factor × Insulation Area

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per m^2, are the values from Tables D8.1 and D8.2 corresponding to the Site's building construction and location.
- *Insulation Area*, in m^2, is the total ground floor area that has had insulation product installed.
- Implementation of the Activity allows both Electricity and Gas Savings Factors to be applied, regardless of fuel used for heating or cooling at the premises.

Table D8.1 – Electricity Savings Factor (MWh per m^2 of under -floor insulation installed)

Climate zone	**BCA Climate Zones 2 and 3 Minimum R2.5**	**BCA Climate Zone 4 Minimum R2.5**	**BCA Climate Zones 5 and 6 Minimum R2.5**	**BCA Climate Zones 7 and 8 Minimum R2.5**
MWh per m^2	n/a	0.02	0.01	0.05

Table D8.2 – Gas Savings Factor (MWh per m^2 of under -floor insulation installed)

Climate zone	**BCA Climate Zones 2 and 3 Minimum R2.5**	**BCA Climate Zone 4 Minimum R2.5**	**BCA Climate Zones 5 and 6 Minimum R2.5**	**BCA Climate Zones 7 and 8 Minimum R2.5**
MWh per m^2	0.01	0.02	0.01	0.04

Lifetime (for information purposes only)

Lifetime = 25 years.

Activity Definition D9

Note: This Activity Definition commences on a date notified by the Minister in the NSW Government Gazette.

Name of Activity

INSTALL WALL INSULATION

Eligibility Requirements

1. There must be no existing wall insulation present.
2. For the purposes of this activity, wall cavities that contain reflective foil sarking only shall be deemed to be uninsulated spaces.

Equipment Requirements

1. The insulation product used must comply with the performance requirements of AS/NZS 4859.1 and achieve a minimum winter R-value of 2.0 when measured in accordance with AS/NZS 4859.1, as evidenced by test reports from an accredited NATA laboratory.
2. The insulation product used must have a warranty of at least 25 years.
3. Foil insulation products are not eligible to be used in this activity.

Implementation Requirements

1. The insulation product used must be installed in accordance with AS 3999 and the National Construction Code BCA Section J1.
2. Installers are required to have completed training courses CPCCOHS1001A; CPCCCM2010A; CPCCOHS2001A; CPCCPB3014A; and other training requirements as Published by the Scheme Administrator.
3. The insulation product must be installed in an external wall space (or part of an external wall space) but not in any common walls (as defined by the National Construction Code).
4. Insulation must be installed in at least 95% of the wall area able to have insulation installed.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor × Insulation Area
Deemed Activity Gas Savings = Gas Savings Factor × Insulation Area

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per m^2, are the values from Tables D9.1 and D9.2 corresponding to the Site's building construction and location.
- *Insulation Area*, in m2, is the total wall area that has had insulation product installed.
- Implementation of the Activity allows both Electricity and Gas Savings Factors to be applied, regardless of fuel used for heating or cooling at the premises.

Table D9.1 – Electricity Savings Factor (MWh per m^2 of wall insulation installed)

Climate zone	**BCA Climate Zones 2 and 3 Minimum R2.0**	**BCA Climate Zone 4 Minimum R2.0**	**BCA Climate Zones 5 and 6 Minimum R2.0**	**BCA Climate Zones 7 and 8 Minimum R2.0**
MWh per m^2	0.05	0.09	0.05	0.15

Table D9.2 – Gas Savings Factor (MWh per m^2 of wall insulation installed)

Climate zone	**BCA Climate Zones 2 and 3 Minimum R2.0**	**BCA Climate Zone 4 Minimum R2.0**	**BCA Climate Zones 5 and 6 Minimum R2.0**	**BCA Climate Zones 7 and 8 Minimum R2.0**
MWh per m^2	0.02	0.06	0.03	0.10

Lifetime (for information purposes only)

Lifetime = 25 years.

Activity Definition D10

(deleted)

Activity Definition D11

Name of Activity

REPLACE AN EXISTING GAS FIRED WATER HEATER WITH A HIGH EFFICIENCY GAS FIRED WATER HEATER

Eligibility Requirements

1. The existing Gas fired water heater is a Gas fired storage water heater.
2. The existing Gas fired water heater does not have to be in working order at time of replacement.

Equipment Requirements

1. The installed End-User Equipment must be a Gas fired water heater as defined in AS 4552 or AS/NZS 5263.1.2.
2. The installed End-User Equipment must be listed as certified in the Gas Technical Regulators Committee (GTRC) National Certification Database and be certified for the fuel to which it will be connected.
3. The capacity of the installed End-User Equipment in Table D11.1 can be either a stored volume for a Gas fired storage water heater or a heated flow rate for a Gas fired instantaneous water heater.
4. The installed End-User Equipment must be rated at an Annual Energy Consumption of ≤ 18279 MJ (equivalent to 6.25 stars) in accordance with AS 4552 or AS/NZS 5263.1.2 if it is a Gas fired instantaneous water heater.
5. The installed End-User Equipment must be rated at an Annual Energy Consumption of ≤ 20302 MJ (equal to 5.25 stars) in accordance with AS 4552 or AS/NZS 5263.1.2 if it is a Gas fired storage water heater.
6. The installed End-User Equipment must have a capacity the same or smaller than the existing End-User Equipment it replaces.
7. The installed End-User Equipment must have a warranty of at least 10 years for the cylinder or tank of a Gas fired storage water heater, or the heat exchanger of a Gas fired instantaneous water heater.

Implementation Requirements

1. The existing End-User Equipment must be disconnected and removed; these tasks must be performed or supervised by a qualified person in accordance with relevant standards and legislation.
2. The End-User Equipment must be installed.
3. The activity must be performed or supervised by a qualified person in accordance with the End-User Equipment installation instructions and in compliance with plumbing, Gas work, electrical work and permanent wiring standards; and as required by other relevant legislation, local regulations, and all local codes and regulatory authority requirements.
4. The Implementation Date must be on or before 30 June 2026.

Activity Energy Savings

Deemed Activity Gas Savings = Gas Savings Factor

Where:

- *Gas Savings Factor*, in MWh per installed End-User Equipment, is the value from Table D11.1 corresponding to the capacity and Annual Energy Consumption of the installed End-User Equipment.
- Capacity of installed End-User Equipment is available from Gas fired water heater specifications.
- Annual Energy Consumption of the installed End-User Equipment is the value listed for the equipment in the GTRC National Certification Database.

Table D11.1 – Gas Savings Factor (MWh per installed End-User Equipment)

Capacity of installed End-User Equipment	**Annual Energy Consumption (MJ)**	**Gas Savings Factor (MWh)**
Gas fired storage water heater: < 95 L Gas fired instantaneous water heater: < 18 L/min at 25ºC rise	> 19797 and ≤ 20302	4.43
	> 19291 and ≤ 19797	5.06
	> 18785 and ≤ 19291	5.69
	> 18279 and ≤ 18785	6.32
	> 17774 and ≤ 18279	6.95
	> 17268 and ≤ 17774	7.59
	> 16762 and ≤ 17268	8.22
	≤ 16762	8.85
Gas fired storage water heater: 95 to 140 L Gas fired instantaneous water heater: 18 to 22 L/min at 25ºC rise	> 19797 and ≤ 20302	7.38
	> 19291 and ≤ 19797	8.43
	> 18785 and ≤ 19291	9.48
	> 18279 and ≤ 18785	10.54
	> 17774 and ≤ 18279	11.59
	> 17268 and ≤ 17774	12.64
	> 16762 and ≤ 17268	13.70
	≤ 16762	14.75
Gas fired storage water heater: > 140 L Gas fired instantaneous water heater: > 22 L/min at 25ºC rise	> 19797 and ≤ 20302	10.33
	> 19291 and ≤ 19797	11.80
	> 18785 and ≤ 19291	13.28
	> 18279 and ≤ 18785	14.75
	> 17774 and ≤ 18279	16.23
	> 17268 and ≤ 17774	17.70
	> 16762 and ≤ 17268	19.18
	≤ 16762	20.65

Lifetime (for information purposes only)

Lifetime = 10 years.

Activity Definition D12

Name of Activity

INSTALL A HIGH EFFICIENCY GAS SPACE HEATER OR REPLACE AN EXISTING GAS SPACE HEATER WITH A HIGH EFFICIENCY GAS SPACE HEATER

Eligibility Requirements

1. This activity must be an installation of a high efficiency Gas space heater or a replacement of an existing Gas space heater with a high efficiency Gas space heater.

Equipment Requirements

1. The installed End-User Equipment must be a Gas space heating appliance as defined in AS4553 or AS/NZS 5263.1.3.
2. The installed End-User Equipment must be rated at a minimum of 5 stars in accordance with AS4553 or AS/NZS 5263.1.3, listed in the Directory of Australian Gas Association (AGA) Certified Products and be certified for the fuel to which it will be connected.
3. The installed End-User Equipment can be a Flued Radiant/Convection Heater, a Balanced Flue Convection Heater or a Wall Furnace, as listed in the Directory of AGA Certified Products.
4. The installed End-User Equipment must have a capacity the same or smaller than the existing End-User Equipment it replaces, in the case of replacement of a Gas space heater.
5. The installed End-User Equipment must have a warranty of at least 10 years for the heat exchanger.

Implementation Requirements

1. If there is any existing End-User Equipment, it must be disconnected and removed; these tasks must be performed or supervised by a qualified person in accordance with relevant standards and legislation.
2. The End-User Equipment must be installed.
3. The activity must be performed or supervised by a qualified person in accordance with the End-User Equipment installation instructions and in compliance with Gas work, electrical work and permanent wiring standards; and as required by other relevant legislation, local regulations, and all local codes and regulatory authority requirements.
4. The Implementation Date must be on or before 30 June 2026.

Activity Energy Savings

Deemed Activity Gas Savings = Gas Savings Factor

Where:

- *Gas Savings Factor*, in MWh per installed End-User Equipment, is the value from Table D12.1 corresponding to the installed End-User Equipment Annual Energy Consumption and Star Rating; as well as the BCA climate zone where the Site is situated.
- Annual Energy Consumption and Star Rating of the installed End-User Equipment are the values listed for the equipment in the most recent version of Directory of AGA Certified Products.
- In cases where the Star Rating for the installed End-User Equipment is between increments, or above 5.50, it is rounded down to the closest Star Rating.

Table D12.1 – Gas Savings Factor (MWh per installed End-User Equipment)

Annual Energy Consumption (MJ/y)	Star Rating	BCA Climate Zones 2 & 3	BCA Climate Zone 4	BCA Climate Zones 5 & 6	BCA Climate Zones 7 & 8
< 9000	5.00 Stars	0.19	0.52	0.28	0.95
	5.25 Stars	0.20	0.57	0.31	1.05
	5.50 Stars	0.21	0.63	0.33	1.16
9000 to 13000	5.00 Stars	0.39	1.45	0.68	2.83
	5.25 Stars	0.42	1.62	0.75	3.18
	5.50 Stars	0.46	1.79	0.82	3.52
> 13000	5.00 Stars	0.48	1.90	0.87	3.75
	5.25 Stars	0.53	2.13	0.97	4.22

	5.50 Stars	0.58	2.36	1.07	4.68

Lifetime (for information purposes only)

Lifetime = 10 years.

Activity Definition D13

Name of Activity

INSTALL A NATURAL ROOF SPACE VENTILATOR

Eligibility Requirements

1. The building must not have an existing ventilator installed.
2. There must be a continuous layer of roof or ceiling insulation present in the roof space.

Equipment Requirements

1. The End-User Equipment must be a single or multiple Natural Roof Space Ventilator(s).
2. The End-User Equipment Flow Coefficient (Cf) and Effective Aerodynamic Area (m^2) must be rated in accordance with AS/ NZS 4740.
3. The total Effective Aerodynamic Area of the installed End-User Equipment must not exceed $1m^2$ in a Residential Building and must not exceed $2m^2$ in a Small Business Site.
4. The End-User Equipment must have a warranty of at least 5 years.

Implementation Requirements

1. The activity must be performed by a person holding a suitable licence enabling work at the necessary height and in the roof space in compliance with the relevant installation standards and legislation as outlined by SafeWork NSW.
2. The End-User Equipment must be installed on a roof of a Residential Building or Small Business Site.

Activity Electricity Savings

$$\textit{Deemed Activity Electricity Savings} = \sum_{\textit{Each Natural Roof Space Ventilator}} (\textit{Effective Aerodynamic Area} \times \textit{Electricity Savings Factor})$$

Where:

- *Effective Aerodynamic Area*, in m^2, is the rated Effective Aerodynamic Area of the installed End-User Equipment in accordance with AS/ NZS 4740.
- *Electricity Savings Factor*, in MWh/m^2, is the lifetime Electricity Savings per m^2 of Effective Aerodynamic Area installed, as specified in Table D13.1 or D13.2 below, according to the Equipment Type, Flow Coefficient and BCA Climate Zone.

Table D13.1 – Residential Building Electricity Savings Factors (MWh per m^2 Effective Aerodynamic Area installed)

Equipment Type	Flow Coefficient, Cf (greater than or equal to)	BCA Climate Zones 2 & 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 & 8
Natural Roof Space Ventilator	0.05	0.42	0.75	0.78	0.45	-
	0.1	0.57	0.86	0.89	0.52	-
	0.15	0.49	0.99	0.94	0.60	-
	0.2	0.53	1.06	0.99	0.63	-
	0.25	0.61	1.11	1.03	0.70	-
	0.3	0.62	1.17	1.07	0.72	-

Table D13.2 – Small Business Site Electricity Savings Factors (MWh per m^2 Effective Aerodynamic Area installed)

Equipment Type	Flow Coefficient, Cf (greater than or equal to)	BCA Climate Zones 2 & 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 & 8
	0.05	2.26	1.67	1.95	1.42	0.85

Natural Roof Space Ventilator	0.1	2.60	2.01	2.26	1.58	0.89
	0.15	2.90	2.11	2.38	1.70	1.05
	0.2	3.14	2.25	2.49	1.84	1.08
	0.25	3.46	2.42	2.65	1.88	1.09
	0.3	3.64	2.66	2.72	1.96	1.13

Lifetime (for information purposes only)

Lifetime = 10 years.

Activity Definition D14

Name of Activity

INSTALL A FAN-FORCED ROOF SPACE VENTILATOR, PV POWERED FAN-FORCED ROOF SPACE VENTILATOR OR AN OCCUPIED SPACE VENTILATOR

Eligibility Requirements

1. The building must not have an existing ventilator installed.
2. There must be continuous roof or ceiling insulation present in the roof space.

Equipment Requirements

1. The End-User Equipment must be a Fan-Forced Roof Space Ventilator, PV Powered Fan-Forced Roof Space Ventilator or an Occupied Space Ventilator.
2. The End-User Equipment flowrate (m3/hr) and electrical power consumption (W), must be rated in accordance with AS ISO 5801.
3. The total Flow Rate of the installed End-User Equipment must not exceed 5000m^3/h in a Residential Building and must not exceed 10000m^3/h in a Small Business Site.
4. There must be a temperature sensor installed in the roof cavity with a controller to control air flow when installing a Fan-Forced Roof Space Ventilator or a PV Powered Fan-Forced Roof Space Ventilator.
5. There must be a temperature and humidity sensor installed in the roof cavity and the occupied space with a controller to control air flow when installing an Occupied Space Ventilator.
6. The End-User Equipment must have a warranty of at least 5 years.

Implementation Requirements

1. Any persons entering the roof space must hold a suitable licence enabling work at the necessary height and in the roof space in compliance with the relevant installation standards and legislation as outlined by SafeWork NSW.
2. All electrical work must be performed or supervised by a Licensed electrician.
3. The End-User Equipment must be installed on a roof of a Residential Building or Small Business Site.

Activity Electricity Savings

$$\textit{Deemed Activity Electricity Savings} = \sum_{\textit{Each ventilator}} (\textit{Flow Rate} \times \textit{Electricity Savings Factor})$$

Where:

- *Flow Rate*, in 1000m^3/h, is the rated Flow Rate of the installed End-User Equipment in accordance with AS ISO 5801.
- *Electricity Savings Factor*, in MWh/(1000m^3/h), is the lifetime Electricity Savings per 1000m^3/h of Flow Rate installed, as specified in table D14.1 or D14.2 below, according to the Equipment Type, Ratio of Flow Rate per Power, and BCA Climate Zone.
- Ratio of Flow Rate per Power (m^3/Wh) is the Flow Rate, in 1000m^3/h divided by electrical power consumption (W). If multiple speeds are available, use the Ratio of Flow Rate per Power of the manufacturer's recommended speed or, if there is no speed recommended by the manufacturer, the speed with lowest Ratio of Flow Rate per Power.

Table D14.1 Residential Building Electricity Savings Factors (MWh per 1000m^3/h Flow Rate installed)

Equipment Type	Ratio of Flow Rate per Power (m^3/Wh)	BCA Climate Zones 2 & 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 & 8
Fan-forced Roof Space Ventilators	10	-	-	-	-	-
	20	-	-	-	-	-
	30	-	-	-	-	-
	40	-	-	0.01	0.03	-
	50	-	0.02	0.04	0.07	0.01
	75	-	0.08	0.09	0.12	0.04
	100	0.03	0.12	0.12	0.14	0.06

PV Powered Fan-Forced Roof Space Ventilators	10	-	-	-	-	-
-	20	-	-	0.01	0.03	-
	30	-	0.05	0.07	0.09	0.03
	40	0.01	0.09	0.10	0.12	0.05
	50	0.03	0.12	0.12	0.14	0.06
	75	0.05	0.15	0.14	0.17	0.07
	100	0.06	0.17	0.16	0.18	0.08
Occupied Space Ventilator	10	-	-	-	-	-
	20	0.24	0.10	0.14	0.26	-
	30	0.32	0.22	0.25	0.37	-
	40	0.36	0.28	0.31	0.42	-
	50	0.38	0.32	0.34	0.46	-
	75	0.41	0.36	0.38	0.50	-
	100	0.43	0.39	0.41	0.52	-

Table D14.2 Small Business Site Electricity Savings Factors (MWh per 1000m3/h Flow Rate installed)

Equipment Type	**Ratio of Flow Rate per Power (m^3/Wh)**	**BCA Climate Zones 2 & 3**	**BCA Climate Zone 4**	**BCA Climate Zone 5**	**BCA Climate Zone 6**	**BCA Climate Zones 7 & 8**
Fan-forced Roof Space Ventilators	10	-	-	-	-	-
	20	-	-	-	-	-
	30	-	-	-	-	-
	40	-	-	-	-	-
	50	-	-	0.03	-	-
	75	0.00	0.03	0.07	0.00	-
	100	0.01	0.06	0.09	0.03	0.00
PV Powered Fan-Forced Roof Space Ventilators	10	-	-	-	-	-
	20	-	-	-	-	-
	30	-	0.00	0.05	-	-
	40	0.01	0.04	0.07	0.01	-
	50	0.02	0.06	0.09	0.03	0.00
	75	0.04	0.09	0.11	0.05	0.02
	100	0.04	0.11	0.12	0.06	0.02
Occupied Space Ventilator	10	3.51	2.03	3.04	2.36	1.84
	20	4.49	3.16	4.12	3.34	2.58
	30	4.82	3.53	4.48	3.66	2.82
	40	4.98	3.72	4.66	3.83	2.95
	50	5.08	3.83	4.77	3.92	3.02
	75	5.21	3.98	4.91	4.05	3.12
	100	5.27	4.06	4.98	4.12	3.17

Lifetime (for information purposes only)

Lifetime = 10 years.

Activity Definition D15

Name of Activity

REPLACE AN EXHAUST FAN WITH A SELF SEALING EXHAUST FAN

Eligibility Requirements

1. The Site must be a Residential Building.
2. An existing exhaust fan unit must be present at the Site.
3. Only exhaust fans that exhaust air directly to the outside of the building can be replaced.

Equipment Requirements

1. The exhaust fan must be fitted with a self-closing damper, flap, filter (for instance, of a type commonly fitted to a kitchen range hood) or other sealing product that can be closed to seal the exhaust of a fan.
2. The End-User Equipment must have a warranty of at least 2 years.

Implementation Requirements

1. The existing exhaust fan unit must be removed from the Site and decommissioned.
2. The End-User Equipment must be installed in strict accordance with the manufacturer's instructions.
3. All electrical work must be performed or supervised by a Licensed electrician.
4. The exhaust fan unit must comply with any relevant AS/NZS as required by the Scheme Administrator.

Activity Energy Savings

Deemed Activity Electricity Savings = 0.91 MWh (per exhaust fan)

Lifetime (for information purposes only)

Lifetime = 5 years

Activity Definition D16

Name of Activity

INSTALL A NEW HIGH EFFICIENCY AIR CONDITIONER OR REPLACE AN EXISTING AIR CONDITIONER WITH A HIGH EFFICIENCY AIR CONDITIONER

Eligibility Requirements

1. This activity must be an installation of a new high efficiency Air Conditioner or a replacement of an existing Air Conditioner (whether operational or not) with a high efficiency Air Conditioner.
2. Only Product Classes listed in Table D16.2 are eligible for this activity.

Equipment Requirements

1. The New End-User Equipment or replacement End-User Equipment must be registered as an air-to-air Air Conditioner in the GEMS Registry as complying with the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019* under Product Classes 5-12 or 18-21 as listed in the GEMS Registry.
2. If the New End-User Equipment or replacement End-User Equipment has a Cooling Capacity recorded in the GEMS Registry:
    a. It must have a Residential TCSPF_mixed value, as recorded in the GEMS Registry, equal to or greater than the Minimum Residential TCSPF_mixed value for the same Product Class in Table D16.4; or
    b. If it does not have a Residential TCSPF_mixed value recorded in the GEMS Registry, then it must have a Rated AEER in the GEMS Registry equal to or greater than the Minimum Rated AEER for the same Product Class in Table D16.4.
3. If the New End-User Equipment or replacement End-User Equipment has a Heating Capacity recorded in the GEMS Registry, and is installed in the hot or average zone as defined in Table A27:
    a. It must have a Residential HSPF_mixed value, as recorded in the GEMS Registry, equal to or greater than the Minimum Residential HSPF_mixed value for the same Product Class in Table D16.4; or
    b. If it does not have a Residential HSPF_mixed value recorded in the GEMS Registry, then it must have a Rated ACOP in the GEMS Registry equal to or greater than the Minimum Rated ACOP for the same Product Class in Table D16.4.
4. If the New End-User Equipment or replacement End-User Equipment has a Heating Capacity recorded in the GEMS Registry, and is installed in the cold zone as defined in Table A27:
    a. It must have a Residential HSPF_cold value, as recorded in the GEMS Registry, equal to or greater than the Minimum Residential HSPF_cold value for the same Product Class in Table D16.4; or
    b. If it does not have a Residential HSPF_cold value recorded in the GEMS Registry, then it must have a Rated ACOP in the GEMS Registry equal to or greater than the Minimum Rated ACOP for the same Product Class in Table D16.4.
5. If the New End-User Equipment or replacement End-User Equipment is an eligible system for Product Classes 5-12, the model number(s) must match the model number(s) recorded in the GEMS registry.
6. If the New End-User Equipment or replacement End-User Equipment is an eligible outdoor Multi-split system Product Type under the GEMS Registry for Product Classes 18-21:
    a. the outdoor unit part of the GEMS registered model number must match the model number of the outdoor unit being installed,
    b. the manufacturer brand must be the same for all indoor and outdoor End-User Equipment, and
    c. the unit(s) must be an approved combination by the manufacturer.

Implementation Requirements

1. The existing End-User Equipment must be removed.
2. The New End-User Equipment or replacement End-User Equipment must be designed and installed in accordance with AS/NZS 5141: 2018.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.

Activity Energy Savings

Equation D16.1

Deemed Activity Electricity Savings = [(Reference Cooling Annual Energy Use - Cooling Annual Energy Use) + (Reference Heating Annual Energy Use - Heating Annual Energy Use)] × Lifetime / 1000

Where:

- *Reference Cooling Annual Energy Use* and *Reference Heating Annual Energy Use*, in kWh/y, are calculated using Equation D16.2 and D16.3 respectively;

- *Cooling Annual Energy Use* and *Heating Annual Energy Use*, in kWh/y, are the values of energy use on the Zoned Energy Rating Label of the New End User Equipment or replacement End-User Equipment for the zone in which the product is installed, as defined in Table A27
    - If the New End User Equipment or replacement End-User Equipment does not have a Zoned Energy Rating Label, *Cooling Annual Energy Use* and *Heating Annual Energy Use* are equal to the values of Residential tcec and Residential thec as recorded in the GEMS Registry, for the zone in which the product is installed, as defined in Table A27; or
    - If the New or replacement End-User Equipment does not have a Zoned Energy Rating Label and does not have Residential tcec and Residential thec values as recorded in the GEMS Registry, the *Cooling Annual Energy Use* and *Heating Annual Energy Use* are determined using Equations D16.4 and D16.5 respectively; and
- *Lifetime*, in years, is specified in Table D16.6.

Equation D16.2

Reference Cooling Annual Energy Use = Cooling Capacity × Equivalent Cooling Hours / Baseline Cooling AEER

Equation D16.3

Reference Heating Annual Energy Use = Heating Capacity × Equivalent Heating Hours / Baseline Heating ACOP

Where:

- *Cooling Capacity* and *Heating Capacity*, in kW, for Product Classes 5-12, are the values of Cooling Capacity at 35°C and Heating Capacity at 7°C of the New End User Equipment or replacement End-User Equipment as recorded in the GEMS Registry;
- *Cooling Capacity* and *Heating Capacity*, in kW, for Product Classes 18-21 (Multi-split systems) are either:
    - the sum of the indoor units' Cooling Capacities at 35°C or Heating Capacities at 7°C as provided in manufacturer documentation; or
    - the outdoor unit's Cooling Capacity at 35°C or Heating Capacity at 7°C of the New End-User Equipment or replacement End-User Equipment as recorded in the GEMS Registry;

  whichever is lower.
- *Equivalent Cooling Hours* and *Equivalent Heating Hours*, in h/y, are specified in Table D16.1, according to the climate zone in which the product is installed, as defined in Table A27; and
- *Baseline Cooling AEER* and *Baseline Heating ACOP* are specified in Table D16.2 according to the Product Class and application type (new or replacement).

Equation D16.4

Cooling Annual Energy Use = Cooling Capacity × Equivalent Cooling Hours / Rated AEER

Equation D16.5

Heating Annual Energy Use = Heating Capacity × Equivalent Heating Hours / Rated ACOP

Where:

- *Cooling Capacity* and *Heating Capacity*, in kW for Product Classes 5-12, are the values of Cooling Capacity at 35°C and Heating Capacity at 7°C of the New End User Equipment or replacement End-User Equipment as recorded in the GEMS Registry;
- *Cooling Capacity* and *Heating Capacity*, in kW, for Product Classes 18-21 (Multi-split systems) are either:
    - the sum of the indoor units' Cooling Capacities at 35°C or Heating Capacities at 7°C as provided in manufacturer documentation; or
    - the outdoor unit's Cooling Capacity at 35°C or Heating Capacity at 7°C of the New End-User Equipment or replacement End-User Equipment as recorded in the GEMS Registry;

  whichever is lower.
- *Equivalent Cooling Hours* and *Equivalent Heating Hours*, in h/y, are specified in Table D16.1, according to the climate zone in which the product is installed, as defined in Table A27; and
- *Rated AEER* and *Rated ACOP* are the New End User Equipment or replacement End-User Equipment's Rated AEER and Rated ACOP as recorded in the GEMS Registry.

Table D16.1 – Equivalent Cooling and Heating Hours (h/y) as derived from AS/NZS 3823.4

	Equivalent Cooling Hours (h/y)	**Equivalent Heating Hours (h/y)**
Hot Zone	1274	109

Average Zone	429	648
Cold Zone	285	1534

Table D16.2 – Baseline AEER and Baseline ACOP for a new or replacement Air Conditioner

Product Type	**Product Class**	**New Install**		**Replacement**	
		Baseline Cooling AEER	**Baseline Heating ACOP**	**Baseline Cooling AEER**	**Baseline Heating ACOP**
Air-to-air: Single-split, Non-ducted and Multi-split	Class 8, 18	3.66	2.33	3.33	2.17
Air-to-air: Single-split, Non-ducted and Multi-split	Class 9, 19	3.22	2.11	2.93	1.97
Air-to-air: Single-split, Multi-split, Unitary, and Ducted or Non-ducted	Class 5, 6, 10, 11, 20	3.1	2.05	2.8	1.90
Air-to-air: Multi-split, Unitary, and Ducted or Non-Ducted	Class 7, 12, 21	2.9	1.95	2.75	1.88

Table D16.3 – (deleted)

Table D16.4 – Minimum TCSPF/HSPF or Rated AEER/ACOP* Requirements

Product Type	**Product Class**	**Minimum Residential TCSPF_mixed**	**Minimum Residential HSPF_mixed**	**Minimum Residential HSPF_cold**	**Minimum Rated AEER***	**Minimum Rated ACOP***
Air-to-air: Single-split, Non-ducted and Multi-split	Class 8, 18	5.5	4.5	4.0	4.3	4.4
Air-to-air: Single-split, Non-ducted and Multi-split	Class 9, 19	4.5	4.0	3.5	3.6	3.8
Air-to-air: Single-split Ducted and Non-ducted and Multi-split	Class 10, 11, 20	4.0	3.5	3.0	3.5	3.8
Air-to-air: Single-split, Multi-split, Unitary, and Ducted or Non-ducted	Class 5, 6, 7, 12, 21	3.0	2.5	2.0	3.3	3.5

*Only to be used if there is no Residential TCSPF/HSPF data recorded in the GEMS Registry.

Table D16.5 – (deleted)

Lifetime (for information purposes only)

Table D16.6

End-User Equipment type	Years
All	12

Activity Definition D17

Name of Activity

REPLACE AN EXISTING ELECTRIC WATER HEATER WITH AN (AIR SOURCE) HEAT PUMP WATER HEATER

Eligibility Requirements

1. The existing electric water heater must be an electric resistance storage or instantaneous water heater.
2. The existing electric water heater does not have to be in working order at the time of replacement.

Equipment Requirements

1. The installed End-User Equipment must be an air source heat pump water heater as defined in AS/NZS 4234.
2. The installed End-User Equipment must be certified to AS/NZS 2712.
3. The installed End-User Equipment must achieve minimum annual energy savings, when determined as an air sourced heat pump using a small or medium thermal peak load System Size in accordance with AS/NZS 4234 of:
    - 60% when modelled in AS/NZS 4234 climate zone HP3-AU.
    - 60% when modelled in AS/NZS 4234 climate zone HP5-AU.

Implementation Requirements

1. The existing End-User Equipment must be removed.
2. The replacement End-User Equipment must be installed at a Site in accordance with the Equipment Requirements
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.
4. Where the replacement End-User Equipment is a split system with refrigerant flows between the evaporator and tank, the location requirements of AS/NZS 5149.3:2016 and manufacturer installation recommendations must be followed.
5. Where the Implementation Date is on or after 1 December 2025, and the replacement End-User Equipment has an insulated storage volume of 700 litres or less:
    a. the End-User Equipment provided by the manufacturer(s) of the heat pump unit and tank must have a warranty against defects covering a period of at least five years from the date of installation, purchase or supply as applicable; and
    b. if the person giving the warranty against defects is not in Australia, the warranty must also include the name and contact details of who to contact in Australia in the event of a product failure.

Equipment Energy savings

Deemed Activity Electricity Savings = Baseline A - a × (Bs + Be)

Where corresponding to the System Size and AS/NZS 4234 climate zone, defined in Table A26, of the installed End-User Equipment in Table D17.1:

- *Baseline A* is the baseline energy consumption of the End-User Equipment in MWh.
- *Bs* is the annual supplementary energy, in GJ, used by the installed End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *Be* is the annual electrical energy used by the auxiliary equipment, in GJ, of the End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *a* = is the adjustment coefficient for hot water load and the installed End-User Equipment type.
- *System Size* is the small or medium thermal peak load size of the system determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.

Table D17.1 – Baseline energy consumption by system size

System Size	AS/NZS 4234 climate zone HP3-AU		AS/NZS 4234 climate zone HP5-AU	
	Baseline A (MWh)	adjustment coefficient (a)	Baseline A (MWh)	adjustment coefficient (a)
Small	23.18	2.291	25.43	2.310
Medium	35.14	2.291	38.49	2.310

Lifetime

Lifetime = 12 years

Activity Definition D18

Name of Activity

REPLACE AN EXISTING ELECTRIC WATER HEATER WITH A SOLAR (ELECTRIC BOOSTED) WATER HEATER

Eligibility Requirements

1. The existing electric water heater must be an electric resistance storage or instantaneous water heater.
2. The existing electric water heater does not have to be in working order at time of replacement.

Equipment Requirements

1. The installed End-User Equipment must be a solar water heater with a collector as defined in AS/NZS 4234.
2. The installed End-User Equipment must be certified to AS/NZS 2712.
3. The installed End-User Equipment must achieve minimum annual energy savings of 60% when determined as a solar thermal collector system with supplementary electric resistive heating in AS/NZS 4234 solar water heater climate zone 3 using a small or medium thermal peak load in accordance with AS/NZS 4234, for all Sites in an ESS Jurisdiction.

Implementation Requirements

1. The existing End-User Equipment must be removed.
2. The replacement End-User Equipment must be installed at a Site in accordance with the Equipment Requirements.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.

Equipment Energy savings

Deemed Activity Electricity Savings = Baseline A - a × (Bs + Be)

Where:

- *Baseline A* is the baseline energy consumption of the End-User Equipment in MWh, corresponding to the System Size of the installed End-User Equipment in Table D18.1.
- *Bs* is the Annual supplementary energy, in GJ, used by the End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *Be* is the annual an electricity consumption by the auxiliary equipment, in GJ, of the End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *a =2.310* is the adjustment coefficient for hot water load and the installed End-User Equipment type.
- *System Size* is the small or medium thermal peak load size of the system determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.

Table D18.1 – Baseline energy consumption by system size

System Size	Baseline A (MWh)
Small	28.98
Medium	43.93

Lifetime

Lifetime = 15 years

Activity Definition D19

Name of Activity

REPLACE AN EXISTING GAS WATER HEATER WITH AN AIR SOURCE HEAT PUMP WATER HEATER

Eligibility Requirements

1. The existing gas water heater must be a gas storage or instantaneous water heater.
2. The existing gas water heater does not have to be in working order at time of replacement.

Equipment Requirements

1. The installed End-User Equipment must be an air source heat pump water heater as defined in AS/NZS 4234.
2. The installed End-User equipment must be certified to AS/NZS 2712.
3. The installed End-User equipment must achieve minimum annual energy savings, when determined as an air sourced heat pump using a small or medium thermal peak load System Size in accordance with AS/NZS 4234, of:
    - 60% when modelled in climate zone HP3-AU.
    - 60% when modelled in climate zone HP5-AU.

Implementation Requirements

1. The existing End-User Equipment must be removed.
2. The replacement End-User Equipment must be installed at a Site in accordance with the Equipment Requirements.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.
4. Where the replacement End-User Equipment is a split system with refrigerant flows between the evaporator and tank, the location requirements of AS/NZS 5149.3:2016 and manufacturer installation recommendations must be followed.
5. Where the Implementation Date is on or after 1 December 2025, and the replacement End-User Equipment has an insulated storage volume of 700 litres or less:
    a. the End-User Equipment provided by the manufacturer(s) of the heat pump and tank must have a warranty against defects covering a period of at least five years from the date of installation, purchase or supply as applicable; and
    b. if the person giving the warranty against defects is not in Australia, the warranty must also include the name and contact details of who to contact in Australia in the event of a product failure.

Equipment Energy savings

Deemed Activity Electricity Savings = Baseline A - a × (Bs + Be)

Deemed Activity Gas Savings = Baseline B

Where corresponding to the System Size and AS/NZS 4234 climate zone, defined in Table A26, of the installed End-User Equipment in Table D19.1:

- *Baseline A* is the baseline electrical energy consumption of the End-User Equipment in MWh.
- *Baseline B* is the baseline gas energy consumption of the End-User Equipment in MWh, corresponding to the system size of the installed End-User Equipment in Table D19.1.
- *Bs* is the Annual supplementary energy, in GJ, used by the installed End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *Be* is the annual electrical energy used by the auxiliary equipment, in GJ, of the installed End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *a* = is the adjustment coefficient for hot water load and the installed End-User Equipment type.
- *System Size* is the small or medium thermal peak load size of the system determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.

Table D19.1 – Baseline energy consumption by system size

System Size	AS/NZS 4234 climate zone HP3-AU			AS/NZS 4234 climate zone HP5-AU		
	Baseline A (MWh)	Baseline B (MWh)	adjustment coefficient (a)	Baseline A (MWh)	Baseline B (MWh)	adjustment coefficient (a)
Small	0.58	28.029	2.291	0.58	31.650	2.310
Medium	0.58	47.337	2.291	0.58	52.750	2.310

Lifetime

Lifetime = 12 years

Activity Definition D20

Name of Activity

REPLACE AN EXISTING GAS WATER HEATER WITH A SOLAR (ELECTRIC BOOSTED) WATER HEATER

Eligibility Requirements

1. The existing gas water heater must be a gas storage or instantaneous water heater.
2. The existing gas water heater does not have to be in working order at time of replacement.

Equipment Requirements

1. The installed End-User Equipment must be a solar water heater with a collector as defined in AS/NZS 4234.
2. The installed End-User Equipment must be certified to AS/NZS 2712.
3. The installed End-User Equipment must achieve minimum annual energy savings of 60% when determined as a solar thermal collector system with supplementary electric resistive heating in AS/NZS 4234 solar water heater climate zone 3 using a small or medium thermal peak load in accordance with AS/NZS 4234, for all Sites in an ESS Jurisdiction.

Implementation Requirements

1. The existing End-User Equipment must be removed.
2. The replacement End-User Equipment must be installed at a Site in accordance with the Equipment Requirements.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.

Equipment Energy savings

Deemed Activity Electricity Savings = Baseline A - a × (Bs + Be)

Deemed Activity Gas Savings = Baseline B

Where:

- *Baseline A* is the baseline energy consumption of the End-User Equipment in MWh, corresponding to the System Size of the installed End-User Equipment in Table D20.1.
- *Baseline B* is the baseline gas energy consumption of the End-User Equipment in MWh, corresponding to the system size of the installed End-User Equipment in Table D20.1.
- *Bs* is the Annual supplementary energy, in GJ, used by the installed End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *Be* is the annual electrical energy used by the auxiliary equipment, in GJ, of the installed End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *a = 2.310*is the adjustment coefficient for hot water load and the installed End-User Equipment type.
- *System Size* is the small or medium thermal peak load size of the system determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.

Table D20.1 – Baseline energy consumption by system size

System Size	Baseline A (MWh)	Baseline B (MWh)
Small	0.73	35.036
Medium	0.73	59.171

Lifetime

Lifetime = 15 years

Activity Definition D21

Name of Activity

REPLACE AN EXISTING GAS WATER HEATER WITH A SOLAR (GAS BOOSTED) WATER HEATER

Eligibility Requirements

1. The existing gas water heater must be a gas storage or instantaneous water heater.
2. The existing gas water heater does not have to be in working order at time of replacement.

Equipment Requirements

1. The installed End-User Equipment must be a solar water heater with a collector as defined in AS/NZS 4234.
2. The installed End-User Equipment must be certified to AS/NZS 2712.
3. The installed End-User Equipment must achieve minimum annual energy savings of 60% when determined as a solar thermal collector system with supplementary gas combustion heating through heat exchangers in AS/NZS 4234 solar water heater climate zone 3 using a small or medium peak thermal load in accordance with AS/NZS 4234, for all Sites in an ESS Jurisdiction.

Implementation Requirements

1. The existing End-User Equipment must be disconnected and removed.
2. The replacement End-User Equipment must be installed at a Site in accordance with the Equipment Requirements.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.
4. The Implementation Date must be on or before 30 June 2026.

Equipment Energy savings

Deemed Activity Electricity Savings = Baseline A - b × Be

Deemed Activity Gas Savings = Baseline B - a × Bs

Where:

- *Baseline A* is the baseline energy consumption of the End-User Equipment in MWh, corresponding to the System Size of the installed End-User Equipment in Table D21.1.
- *Baseline B* is the baseline energy consumption of the End-User Equipment in MWh, corresponding to the System Size of the installed End-User Equipment in Table D21.1.
- *Bs* is the Annual supplementary energy, in GJ, used by the installed End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *Be* is the annual electrical energy used by the auxiliary equipment, in GJ, of the installed End-User Equipment determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.
- *a = 2.322* is the adjustment coefficient for hot water load and the installed End-User Equipment type.
- *b = 4.167* is the adjustment coefficient for the installed End-User Equipment type.
- *System Size* is the small or medium thermal peak load size of the system determined in accordance with AS/NZS 4234 and accepted in a manner determined by the Scheme Administrator.

Table D21.1 – Baseline energy consumption by system size

System Size	Baseline A (MWh)	Baseline B (MWh)
Small	0.73	35.036
Medium	0.73	59.171

Lifetime

Lifetime = 15 years

Schedule E – Activity Definitions for Low-Cost Activities for Home Energy Efficiency Retrofits (clause 9.8)

Activity Definition E1

Name of Activity

REPLACE HALOGEN DOWNLIGHT WITH AN LED LUMINAIRE AND/OR LAMP

Eligibility Requirements

1. The existing Lamp must be a Tungsten halogen Lamp (240V), Tungsten halogen Lamp (ELV), or Infrared coated (IRC) halogen Lamp (ELV) as defined in Table A9.1 of Schedule A.
2. The existing Lamp must be a multifaceted reflector Lamp.
3. The existing Lamp must be rated at either 35W or 50W.
4. The existing Lamp and Luminaire must be in working order.

Equipment Requirements

1. The new End-User Equipment must be a LED Lamp only – ELV, LED Lamp and Driver, LED Luminaire-recessed, or an LED Lamp Only – 240V Self Ballasted, as defined in Table A9.1 or Table A9.3 of Schedule A.
2. Any End-User Equipment classified under Table A9.3 must be accepted by the Scheme Administrator as meeting the requirements of Table A9.4 of Schedule A.
3. The new End-User Equipment must have an initial Downward Light Output of ≥462 lumens.
4. The new End-User Equipment must have a beam angle consistent with the original Lamp being replaced.
5. The new End-User Equipment must be compatible with any dimmer installed on the same circuit as the new End-User Equipment.

Implementation Requirements

1. The activity must be performed by a person authorised to carry out electrical wiring work under section 14 (1) of the *Home Building Act 1989*.
2. When installing a LED Lamp only – 240V Self Ballasted Lamp the existing ELV halogen Control Gear must be removed and not used as part of the Lighting Upgrade.
3. When installing a LED Lamp only – ELV the new End-User Equipment must be compatible with the existing transformer.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor

Where:

- *Electricity Savings Factor,* in MWh, is the value from Table E1.1 or Table E1.2, corresponding to the existing Lamp or Luminaire where the Lamp Circuit Power of the replacement Lamp being installed (in Watts); and
- Lamp Circuit Power is the Lamp Circuit Power of the replacement Lamp being installed (in Watts) and is measured in accordance with Table A9.4 of Schedule A.

Table E1.1 Residential Building Electricity Savings Factor (MWh per Lamp replaced)

Existing Lamp and/or Luminaire	**New Lamp and/or Luminaire**	**New Lamp Circuit Power (Watts)**		
		≤5 W	≤10 W	≤15 W
Tungsten halogen Lamp (ELV) with Electronic Transformer or Magnetic Transformer or Infrared coated (IRC) halogen Lamp (ELV) with Electronic Transformer or Magnetic transformer, with or without Luminaire.	LED Lamp only	0.52	0.44	0.35
	LED Lamp and Driver or LED Luminaire - recessed	0.54	0.46	0.39
	LED Lamp only – 240V Self Ballasted			
Tungsten halogen Lamp (240V), with or without Luminaire.	LED Lamp only – 240V Self Ballasted or LED Lamp and Driver or LED recessed	0.68	0.60	0.53

Table E1.2 Small Business Site Electricity Savings Factor (MWh per Lamp replaced)

Existing Lamp and/or Luminaire	**New Lamp and/or Luminaire**	**New Lamp Circuit Power (Watts)**		
		≤5 W	≤10 W	≤15 W
Tungsten halogen Lamp (ELV) with Electronic Transformer or Magnetic Transformer or Infrared coated (IRC) halogen Lamp (ELV) with Electronic Transformer or Magnetic transformer, with or without Luminaire.	LED Lamp only	1.05	0.87	0.70
	LED Lamp and Driver or LED Luminaire - recessed	1.50	1.29	1.08
	LED Lamp only – 240V Self Ballasted			
Tungsten halogen Lamp (240V), with or without Luminaire.	LED Lamp only – 240V Self Ballasted	1.35	1.20	1.05
	LED Lamp and Driver or LED Luminaire – recessed	1.89	1.68	1.47

Lifetime (for information purposes only)

Residential Building Lifetime = 15 years.
Small Business Site Lifetime = 10 years.

Activity Definition E2

Name of Activity

REPLACE A LINEAR HALOGEN FLOODLIGHT WITH A HIGH EFFICIENCY LAMP

Eligibility Requirements

1. The existing Lamp must be a linear halogen floodlight.
2. The existing Lamp must be rated at more than 100W.
3. Existing equipment must be in working order at time of replacement.

Equipment Requirements

1. The new End-User Equipment must be a CFLi or an LED Luminaire – Floodlight, as defined in Table A9.1 or Table A9.3 of Schedule A.
2. Any End-User Equipment classified under Table A9.3 must be accepted by the Scheme Administrator as meeting the requirements of Table A9.4 of Schedule A.
3. CFLs must have a Lamp Life of at least 10,000 hours when measured in accordance with Table A9.6 of Schedule A.
4. The new End-User Equipment must have a beam angle consistent with that of the original Lamp being replaced.

Implementation Requirements

1. The activity must be performed by a person authorised to carry out electrical wiring work under section 14 (1) of the *Home Building Act 1989*.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor

Where:

- *Electricity Savings Factor*, in MWh, is the value from Table E2.1 or Table E2.2 corresponding to the Lamp Circuit Power of the existing Lamp and the replacement Lamp being installed (in Watts); and
- *Lamp Circuit Power* is measured in Accordance with Table A9.4 of Schedule A.

Table E2.1 – Residential Building Electricity Savings Factor (MWh per linear halogen floodlight replaced)

Lamp Circuit Power of existing Lamp	New End-User Equipment	Light Output of new End-User Equipment (lm)	Lamp Circuit Power of replacement Lamp (W)				
			≤30W	≤45W	≤60W	≤90W	≤150W
100W ≤ LCP < 150W	LED Luminaire – Floodlight or CFLi	≥1,500	0.27				
150W ≤ LCP < 200W	LED Luminaire – Floodlight or CFLi	≥2,500	0.46	0.38			
200W ≤ LCP < 300W	LED Luminaire – Floodlight or CFLi	≥3,500		0.57	0.51		
300W ≤ LCP < 500W	LED Luminaire – Floodlight or CFLi	≥5,700			0.88	0.73	
500W ≤ LCP	LED Luminaire – Floodlight or CFLi	≥10,000				1.46	1.17

Table E2.2 – Small Business Site Electricity Savings Factor (MWh per linear halogen floodlight replaced)

Lamp Circuit Power of existing Lamp	New End-User Equipment	Light Output of new End-User Equipment (lm)	Lamp Circuit Power of replacement Lamp (W)				
			≤30W	≤45W	≤60W	≤90W	≤150W
100W ≤ LCP < 150W	LED Luminaire – Floodlight or CFLi	≥1,500	0.75				
150W ≤ LCP < 200W	LED Luminaire – Floodlight or CFLi	≥2,500	1.25	1.05			
200W ≤ LCP < 300W	LED Luminaire – Floodlight or CFLi	≥3,500		1.55	1.40		

300W ≤ LCP < 500W	LED Luminaire – Floodlight or CFLi	≥5,700			2.40	2.00	
500W ≤ LCP	LED Luminaire – Floodlight or CFLi	≥10,000				4.00	3.20

Lifetime (for information purposes only)

Residential Building Lifetime = 10 years.
Small Business Site Lifetime = 10 years.

Activity Definition E3

Name of Activity

REPLACE PARABOLIC ALUMINISED REFLECTOR (PAR) LAMP WITH EFFICIENT LUMINAIRE AND/OR LAMP

Eligibility Requirements

1. The existing Lamp must be a 240V parabolic aluminised reflector (PAR) Lamp.
2. The existing Lamp must be rated at between 80W and 160W.
3. Existing lighting equipment must be in working order at time of replacement.

Equipment Requirements

1. The new End-User Equipment must be a LED Lamp Only – 240V Self Ballasted, CFLi or LED Luminaire – Floodlight as defined in Table A.9.1 or Table A9.3 of Schedule A.
2. Any End-User Equipment classified under Table A9.3 must be accepted by the Scheme Administrator as meeting the requirements of Table A9.4 of Schedule A.
3. CFL Lamps must have a Lamp Life of at least 10,000 hours when measured in accordance with Table A9.6 of Schedule A.
4. The new End-User Equipment must have a beam angle consistent with that of the original Lamp being replaced.

Implementation Requirements

1. The activity must be performed by a person authorised to carry out electrical wiring work under section 14 (1) of the *Home Building Act 1989*.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor

Where:

- *Electricity Savings Factor*, in MWh, is the value from Table E3.1 or Table E3.2 corresponding to the lighting retrofit activity and the Lamp Circuit Power of the replacement lamp being installed (in Watts); and
- Lamp Circuit Power is measured in accordance with Table A9.4 of Schedule A.

Table E3.1 Residential Building Electricity Savings Factor (MWh per PAR lamp replaced)

LCP of Existing Lamp	Light output of new End-User Equipment	Lamp Circuit Power of the replacement lamp (Watts)			
		≤15 W	≤25 W	≤30 W	≤40 W
80W ≤ LCP < 100W	≥ 1200 lm	0.60	-	-	-
100W ≤ LCP < 120W	≥ 1500 lm	0.80	0.75	-	-
120W ≤ LCP < 140W	≥ 1900 lm	1.00	0.95	0.90	-
140W ≤ LCP < 160W	≥ 2300 lm	1.20	1.15	1.10	1.00

Table E3.2 Small Business Site Electricity Savings Factor (MWh per PAR lamp replaced)

LCP of Existing Lamp	Light output of new End-User Equipment	Lamp Circuit Power of the replacement lamp (Watts)			
		≤15 W	≤25 W	≤30 W	≤40 W
80W ≤ LCP < 100W	≥ 1200 lm	1.80	-	-	-
100W ≤ LCP < 120W	≥ 1500 lm	2.40	2.25	-	-
120W ≤ LCP < 140W	≥ 1900 lm	3.00	2.85	2.70	-
140W ≤ LCP < 160W	≥ 2300 lm	3.60	3.45	3.30	3.00

Lifetime (for information purposes only)
Residential Building Lifetime = 10 years. Small Business Site Lifetime = 10 years.

Activity Definition E4

Name of Activity

REPLACE A T8 OR T12 LUMINAIRE WITH A T5 LUMINAIRE

Eligibility Requirements

1. Must be an existing 2 foot, 3 foot, 4 foot, or 5 foot T8 or T12 Fluorescent Luminaire.
2. Existing lighting equipment must be in working order at time of replacement.
3. Existing lighting equipment must not be a luminaire modified with T5 adaptor kit.

Equipment Requirements

1. The new End-User equipment must be a T5 linear fluorescent Luminaire.
2. The new End-User Equipment must not be a T5 Adaptor kit.
3. The new Luminaire must have a length consistent with the existing Luminaire.
4. Lamp Life must be at least 20,000 hours when measured in accordance with Table A9.6 of Schedule A.

Implementation Requirements

1. The activity must be performed by a person authorised to carry out electrical wiring work under section 14 (1) of the *Home Building Act 1989*.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor

Where:

- *Electricity Savings Factor*, in MWh, is the value from Table E4.1 or Table E4.2 corresponding to the Lamp size.

Table E4.1 – Residential Building Electricity Savings Factor (MWh per T8 or T12 Luminaire replaced)

Luminaire and Lamp size	Electricity Savings Factor (MWh)
2 foot (600mm)	0.10
3 foot (900mm)	0.12
4 foot (1200mm)	0.14
5 foot (1500mm)	0.16

Table E4.2 – Small Business Site Electricity Savings Factor (MWh per T8 or T12 Luminaire replaced)

Luminaire and Lamp size	Electricity Savings Factor (MWh)
2 foot (600mm)	0.42
3 foot (900mm)	0.50
4 foot (1200mm)	0.59
5 foot (1500mm)	0.67

Lifetime **(for information purposes only)**

Residential Building Lifetime = 10 years.
Small Business Site Lifetime = 10 years.

Activity Definition E5

Name of Activity

REPLACE A T8 OR T12 LUMINAIRE WITH A LED LUMINAIRE

Eligibility Requirements

1. Must be an existing 2 foot, 3 foot, 4 foot or 5 foot T8 or T12 Fluorescent Luminaire.
2. Existing lighting equipment must be in working order at time of replacement.
3. Existing lighting equipment must not be a luminaire modified with T5 adaptor kit.

Equipment Requirements

1. The new End-User Equipment must be a LED Luminaire – Linear Lamp as defined in Table A9.3 of Schedule A.
2. The new End-User Equipment must not be a Retrofit Luminaire – LED Linear Lamp or Modified Luminaire – LED Linear Lamp as defined in Table A9.3 of Schedule A.
3. Any End-User Equipment classified under Table A9.3 must be accepted by the Scheme Administrator as meeting the requirements of Table A9.4 of Schedule A.
4. Lamp Life must be at least 20,000 hours when measured in accordance with Table A9.6.
5. The new End-User Equipment must be compatible with any dimmer installed on the same circuit as the new End-User Equipment.

Implementation Requirements

1. The activity must be performed by a person authorised to carry out electrical wiring work under section 14 (1) of the *Home Building Act 1989*.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor

Where:

- *Electricity Savings Factor*, in MWh, is the value from Table E5.1 or Table E5.2 corresponding to the Lamp Circuit Power (LCP) specified in Table A9.4 of Schedule A.

Table E5.1 – Residential Building Electricity Savings Factor (MWh per T8 or T12 Luminaire replaced)

Existing Luminaire	Light Output of new End-User Equipment (lm)	Lamp Circuit Power of the replacement luminaire (Watts)												
		≤10 W	≤15 W	≤20 W	≤25 W	≤30 W	≤35 W	≤40 W	≤45 W	≤50 W	≤60 W	≤70 W	≤80 W	≤90 W
550 ≤ 700 mm (1 lamp)	≥ 600	0.24	-	-	-	-	-	-	-	-	-	-	-	-
700 ≤ 1150 mm (1 lamp)	≥ 1100	0.42	0.35	-	-	-	-	-	-	-	-	-	-	-
1150 ≤ 1350 mm (1 lamp)	≥ 1500	-	0.44	0.36	0.29	-	-	-	-	-	-	-	-	-
1350 ≤ 1500 (1 lamp)	≥ 2400	-	-	0.69	0.62	0.54	0.47	0.39				-	-	-
550 ≤ 700 mm (2 lamps)	≥ 1200	0.63	0.56	0.48	-	-	-	-	-	-	-	-	-	-
700 ≤ 1150 mm (2 lamps)	≥ 2200	-	0.92	0.84	0.77	0.69	0.62	-	-	-	-	-	-	-
1150 ≤ 1350 mm (2 lamps)	≥ 3000	-	-	-	0.95	0.87	0.80	0.72	0.65	0.57	-	-	-	-
1350 ≤ 1500 (2 lamps)	≥ 4900	-	-	-	-	-	1.46	1.38	1.31	1.23	1.08	0.93	0.78	
550 ≤ 700 mm (3 or more lamps)	≥ 1900	-	0.95	0.87	0.80	0.72	-	-	-	-	-	-	-	-

700 ≤ 1150 mm (3 or more lamps)	≥ 3300	-	-		1.34	1.26	1.19	1.11	1.04	0.96	-	-	-	-
1150 ≤ 1350 mm (3 or more lamps)	≥ 4500	-	-	-	-	-	1.46	1.38	1.31	1.23	1.08	0.93	-	-
1350 ≤ 1500 (3 or more lamps)	≥ 7300	-	-	-	-	-	-	-	-	2.22	2.07	1.92	1.77	1.62

Table E5.2 – Small Business Site Electricity Savings Factor (MWh per T8 or T12 Luminaire replaced)

Existing Luminaire	**Light Output of new End-User Equipment (lm)**	**Lamp Circuit Power of the replacement luminaire (Watts)**												
		≤10 W	**≤15 W**	**≤20 W**	**≤25 W**	**≤30 W**	**≤35 W**	**≤40 W**	**≤45 W**	**≤50 W**	**≤60 W**	**≤70 W**	**≤80 W**	**≤90 W**
550 ≤ 700 mm (1 lamp)	≥ 600	0.67	-	-	-	-	-	-	-	-				
700 ≤ 1150 mm (1 lamp)	≥ 1100	1.18	0.97	-	-	-	-	-	-	-	-	-	-	-
1150 ≤ 1350 mm (1 lamp)	≥ 1500	-	1.22	1.01	0.80	-	-	-	-	-	-	-	-	-
1350 ≤ 1500 (1 lamp)	≥ 2400	-	-	1.93	1.72	1.51	1.30	1.09	-	-	-	-	-	-
550 ≤ 700 mm (2 lamps)	≥ 1200	1.76	1.55	1.34	-	-	-	-	-	-	-	-	-	-
700 ≤ 1150 mm (2 lamps)	≥ 2200	-	2.56	2.35	2.14	1.93	1.72	-	-	-	-	-	-	-
1150 ≤ 1350 mm (2 lamps)	≥ 3000	-	-	-	2.65	2.44	2.23	2.02	1.81	1.60	-	-	-	-
1350 ≤ 1500 (2 lamps)	≥ 4900	-	-	-	-	-	4.07	3.86	3.65	3.44	3.02	2.60	2.18	-
550 ≤ 700 mm (3 or more lamps)	≥ 1900	-	2.65	2.44	2.23	2.02	-	-	-	-	-	-	-	-
700 ≤ 1150 mm (3 or more lamps)	≥ 3300	-	-	-	3.74	3.53	3.32	3.11	2.90	2.69	-	-	-	-
1150 ≤ 1350 mm (3 or more lamps)	≥ 4500	-	-	-	-	-	4.07	3.86	3.65	3.44	3.02	2.60	-	-
1350 ≤ 1500 (3 or more lamps)	≥ 7300	-	-	-	-	-	-	-	-	6.22	5.80	5.38	4.96	4.54

Lifetime (for information purposes only)

Residential Building Lifetime = 15 years.
Small Business Site Lifetime = 10 years.

Activity Definition E6

Name of Activity

REPLACE AN EXISTING SHOWERHEAD WITH AN ULTRA LOW FLOW SHOWERHEAD

Eligibility Requirements

a. The hot water service supplying the shower must be provided by an electric resistance water heater, an electrically boosted solar water heater or an electric heat pump water heater (for electricity savings); or by a Gas fired storage water heater, Gas fired instantaneous water heater or a Gas boosted solar water heater (for Gas savings).
b. There must be an existing showerhead on each shower.

Equipment Requirements

1. The End-User Equipment must be a showerhead as defined in *AS/NZS 3662– Performance of showers for bathing*.
2. The showerhead must be assigned a minimum 3 Star WELS Rating with a nominal flow rate of ≤ 6 litres/minute when tested according to *AS/NZS 6400 – Water efficient products*.
3. The showerhead must have a warranty of at least 2 years.

Implementation Requirements

1. The replacement of the showerhead must be performed or supervised by a Licensed plumber in accordance with the Plumbing Code of Australia.
2. A maximum of one showerhead per shower can be replaced.
3. The showerhead must be compatible with the installed water heating system**.**

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor
Deemed Activity Gas Savings = Gas Savings Factor

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per showerhead, are the values from Tables E6.1 and E6.2 corresponding to the type of water heating system servicing the shower.
- The Electricity Savings Factor and Gas Savings Factor that are applied must match the type of water heating system.
- In the case where showerhead replacement occurs in conjunction with a water heating system replacement, the Electricity Savings Factor and Gas Savings Factor that are applied must match the new installed water heating system.

Table E6.1 – Electricity Savings Factor (MWh per showerhead replaced)

Electric water heating system	**Electricity Savings Factor (MWh)**
Electric resistance water heater	1.9
Electrically boosted solar water heater	1.1
Electric heat pump water heater	1.1

Table E6.2 – Gas Savings Factor (MWh per showerhead replaced)

Gas fired water heating system	**Gas Savings Factor (MWh)**
Gas fired storage water heater	3.4
Gas fired instantaneous water heater	3.1
Gas boosted solar water heater	1.2

Lifetime (for information purposes only)

Lifetime = 7 years.

Activity Definition E7

Name of Activity

MODIFY AN EXTERNAL DOOR WITH DRAUGHT-PROOFING

Eligibility Requirements

1. Doors to be draught-proofed must have gaps between the door and frame and/or threshold that permit the infiltration of air into or out of the Site.
2. Only external doors may be draught-proofed.

Equipment Requirements

1. The equipment to be applied must be a retail door bottom sealing product or door perimeter weather-stripping product or a combination of the two.
2. The product must be fit for purpose.
3. The product's sealing surface must be made of a durable compressible material such as foam, polypropylene pile, flexible plastic, rubber compressible strip, fibrous seal or similar.
4. The product must not impair the proper operation of the door.
5. The product must have a warranty of at least 2 years.

Implementation Requirements

1. The product must be applied to a door bottom seal or a set of door jamb and head seals or a combination of both.
2. The product, once applied, must effectively restrict the airflow into or out of the Site around the perimeter of the door.
3. The product must be installed in strict accordance with the manufacturer's instructions.
4. All external doors (excluding sliding doors) at the Site that meet the Eligibility Requirements must be draught-proofed.
5. The product must be installed in accordance with the National Construction Code BCA Section J3 and any relevant AS/NZS as required by the Scheme Administrator.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor
Deemed Activity Gas Savings = Gas Savings Factor

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per door, are the values from Tables E7.1, E7.2, E7.3 and E7.4 corresponding to the type of building construction, warranty period and the BCA Climate Zone of the Site.
- Implementation of the Activity allows both Electricity and Gas Savings Factors to be applied, regardless of fuel used for heating or cooling at the premises.

Table E7.1 – Residential Building Electricity Savings Factor (MWh per door modified)

Warranty period	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
2 - 5-year warranty	0.06	0.08	0.05	0.06	0.10
> 5-year warranty	0.13	0.16	0.10	0.12	0.21

Table E7.2 – Residential Building Gas Savings Factor (MWh per door modified)

Warranty Period	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
2 - 5-year warranty	0.05	0.12	0.06	0.08	0.17
> 5-year warranty	0.10	0.25	0.13	0.17	0.35

Table E7.3 – Small Business Site Electricity Savings Factor (MWh per door modified)

Warranty Period	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
2 - 5-year warranty	0.04	-0.02	-	-0.01	-0.02
> 5-year warranty	0.07	-0.05	-	-0.03	-0.05

Table E7.4 – Small Business Site Gas Savings Factor (MWh per door modified)

Warranty Period	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
2 - 5-year warranty	0.01	0.05	-	0.02	0.08
> 5-year warranty	0.02	0.09	-	0.05	0.15

Lifetime (for information purposes only)

Lifetime for 2 – 5-year warranty products = 5 years.
Lifetime for > 5-year warranty products = 10 years.

Activity Definition E8

Name of Activity

MODIFY AN EXTERNAL WINDOW WITH DRAUGHT-PROOFING

Eligibility Requirements

1. Windows to be draught-proofed must present with gaps between the sash and frame that permit the infiltration of air into or out of the Site.
2. Only external windows may be draught-proofed.

Equipment Requirements

1. The equipment to be applied must be a retail window sealing or weather stripping product or a combination of the two.
2. The product must be fit for purpose.
3. The product's sealing surface must be made of a durable compressible material such as foam, polypropylene pile, flexible plastic, rubber compressible strip, fibrous seal or similar.
4. The product must not impair the proper operation of the window.
5. The product must have a warranty of at least 2 years.

Implementation Requirements

1. The product must be applied to the perimeter of the window sash.
2. The product, once applied, must effectively restrict the airflow into or out of the Site around the perimeter of the window.
3. The product must be installed in strict accordance with the manufacturer's instructions.
4. All external windows at the Site that meet the Eligibility Requirements must be draught-proofed.
5. The draught-proofing product (or products) must be installed in accordance with the National Construction Code BCA Section J3 and any relevant AS/NZS as required by the Scheme Administrator.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor × Length
Deemed Activity Gas Savings = Gas Savings Factor × Length

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per metre, are the values from Tables E8.1 and E8.2 corresponding to the type of building construction, warranty period and the BCA Climate Zone of the Site.
- *Length*, in metres, is the length of window perimeter to which the product has been applied.
- Implementation of the Activity allows both Electricity and Gas Savings Factors to be applied, regardless of fuel used for heating or cooling at the premises.

Table E8.1 –Residential Building Electricity Savings Factor (MWh per metre of window perimeter modified)

Warranty Period	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
2 - 5-year warranty	0.01	0.01	0.01	0.01	0.01
> 5-year warranty	0.01	0.02	0.01	0.01	0.02

Table E8.2 – Residential Building Gas Savings Factor (MWh per metre of window perimeter modified)

Warranty Period	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
2 - 5-year warranty	0.01	0.01	0.01	0.01	0.02
> 5-year warranty	0.01	0.03	0.01	0.02	0.04

Lifetime (for information purposes only)

Lifetime for 2 – 5-year warranty products = 5 years.
Lifetime for > 5-year warranty products = 10 years.

Activity Definition E9

Name of Activity

MODIFY A FIREPLACE CHIMNEY BY SEALING WITH A DAMPER

Eligibility Requirements

1. The fireplace that the damper is to be installed in must be within a Residential Building.
2. The fireplace must be an open fireplace; and not have an existing damper.

Equipment Requirements

1. The damper must be fit for purpose and capable of effectively sealing the flue or chimney of an open fireplace.
2. If the damper is designed to be used in an operable fireplace then it must be of a durable construction such that its operation is not adversely affected by the heat of a fire and when open it must not adversely affect the operation of the fireplace, in particular the chimney/flue's capacity to "draw" smoke out of the firebox.
3. The chimney damper must, to the satisfaction of the Scheme Administrator, be a durable product that will deliver long-lasting energy savings.
4. The damper installed must have a warranty of at least 3 years
5. The damper must not be a chimney balloon.

Implementation Requirements

1. The damper must be installed in accordance with the manufacturer's instructions.
2. If the damper is not designed to be used in an operable fireplace (i.e. permanent sealing) the fireplace must be sealed such that access to the combustion chamber is also permanently sealed or if the firebox is not to be sealed then the fuel burning device must be clearly tagged as having been sealed.
3. If the damper is designed to be used in an operable fireplace it must be installed in a manner that ensures that the safe operation of the fireplace is not compromised.
4. Works must be carried out in accordance with the National Construction Code BCA Section J3 and any relevant AS/NZS as required by the Scheme Administrator.
5. All fireplaces at the Site that meet the Eligibility Requirements must be sealed.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor
Deemed Activity Gas Savings = Gas Savings Factor

Where:

- *Electricity Savings Factor* and *Gas Savings Factor*, in MWh per fireplace, are the values from Tables E9.1 and E9.2 corresponding to the type of building construction and the BCA Climate Zone of the Site.
- Implementation of the Activity allows both Electricity and Gas Savings Factors to be applied, regardless of fuel used for heating or cooling at the premises.

Table E9.1 – Residential Building Electricity Savings Factor (MWh per fireplace modified)

Unit	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
MWh per fireplace	1.21	2.58	1.20	1.17	2.15

Table E9.2 – Residential Building Gas Savings Factor (MWh per fireplace modified)

Unit	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
MWh per fireplace	1.52	4.02	1.73	1.55	3.55

Lifetime (for information purposes only)

Lifetime = 10 years.

Activity Definition E10

Name of Activity

INSTALL AN EXTERNAL BLIND TO A WINDOW OR DOOR

Eligibility Requirements

1. The Site must be a Residential Building or Small Business Site.
2. The window or door must be a fully glazed external window or door.
3. The window or door must not face south (between 135º and 225 º of true north).

Equipment Requirements

1. The End-User Equipment must be an external shading device, such as a shutter, blind, vertical or horizontal building screen with blades, battens or slats.
2. The End-User Equipment must comply with AS/NZS 60335.2.97 if automated.
3. The End-User Equipment must have a warranty of at least 5 years.

Implementation Requirements

1. The product must be applied externally to the outside of the window or door.
2. The person performing the activity must comply with the relevant installation standards and legislation as outlined by SafeWork NSW.
3. The product must be installed in accordance with the manufacturer's instructions.

Activity Energy Savings

Deemed Activity Electricity Savings = Savings Factor × Area

Where:

- *Savings Factor*, in MWh per m^2, is the value from Table E10.1 corresponding to the relevant Sector and BCA Climate Zone of the Site; and
- *Area*, in m^2, is the area of window or door glazing which external blinds cover.

Table E10.1 – Savings Factor (MWh per m^2 of external blind applied)

Sector	BCA Climate Zones 2 and 3	BCA Climate Zone 4	BCA Climate Zone 5	BCA Climate Zone 6	BCA Climate Zones 7 and 8
Residential Building	0.05	0.05	0.03	0.04	0.02
Small Business Site	0.18	0.32	0.18	0.25	0.15

Lifetime (for information purposes only)

Lifetime = 10 years.

Activity Definition E11

Name of Activity

REPLACE AN EDISON SCREW OR BAYONET LAMP WITH AN LED LAMP FOR GENERAL LIGHTING PURPOSES

Eligibility Requirements

1. The existing Lamp must be a 240V fixed ceiling or wall mounted luminaire fixture.
2. The existing Lamp must be an Edison screw or Bayonet Lamp.
3. The existing Lamp must be an Incandescent, halogen or CFL Lamp.
4. The existing Lamp and Luminaire must be in working order.
5. Must be a Lamp only replacement.

Equipment Requirements

1. The new End-User Equipment must be a 240V Edison screw or Bayonet self-ballasted LED Lamp.
2. Any End-User Equipment classified under Table A9.3 of Schedule A must be accepted by the Scheme Administrator as meeting the requirements of Table A9.4 of Schedule A.
3. The new End-User Equipment must be compatible with any dimmer installed on the same circuit as the new End-User Equipment.
4. The new End-User Equipment must have a Light Output the same or higher than the replaced Lamp.

Implementation Requirements

1. The activity must be performed by a person authorised to carry out electrical wiring work under section 14 (1) of the *Home Building Act 1989*.

Residential Building Activity Energy Savings

Deemed Activity Electricity Savings = LCP of new Lamp × (luminous efficacy of new Lamp / 33.9 – 1) × 840 × 10 / 10^6

Where:

- *Lamp Circuit Power*, is the wattage of the replacement Lamp being installed and is measured in accordance with Table A9.4 of Schedule A.
- *Luminous efficacy of the new Lamp,* is the Light Output divided by the Lamp Circuit Power of the new Lamp being installed.

Small Business Site Activity Energy Savings

Deemed Activity Electricity Savings = LCP of new Lamp × (luminous efficacy of new Lamp / 33.9 – 1) × 3000 × 10 / 10^6

Where:

- *Lamp Circuit Power*, is the wattage of the replacement Lamp being installed and is measured in accordance with Table A9.4 of Schedule A.
- *Luminous efficacy of the new Lamp,* is the Light Output divided by the Lamp Circuit Power of the new Lamp being installed.

Lifetime (for information purposes only)

Residential Building Lifetime = 10 years.
Small Business Site Lifetime = 10 years.

Activity Definition E12

Name of Activity

MODIFY AN EXHAUST FAN WITH A SEALING PRODUCT

Eligibility Requirements

1. The Site must be a Residential Building.
2. An existing exhaust fan unit must be present at the Site.
3. Only exhaust fans that exhaust air directly to the outside of the building can be sealed.

Equipment Requirements

1. The product must be a self-closing damper, flap, filter (for instance, of a type commonly fitted to a kitchen range hood) or other sealing product that can be closed to seal the exhaust of a fan.
2. The installed End-User Equipment must allow the egress of air when the exhaust fan is in operation.
3. The End-User Equipment must have a warranty of at least 2 years.

Implementation Requirements

1. The End-User Equipment must be applied to the existing exhaust fan.
2. The End-User Equipment, once applied, must effectively restrict the airflow into or out of the Site.
3. The End-User Equipment must be installed in strict accordance with the manufacturer's instructions.
4. All electrical work must be performed or supervised by a Licensed electrician.
5. All exhaust fans at the Site that meet the Eligibility Requirements must be sealed.
6. The End-User Equipment must comply with any relevant AS/NZS as required by the Scheme Administrator.

Activity Energy Savings

Deemed Activity Electricity Savings = 0.91 MWh (per exhaust fan)

Lifetime (for information purposes only)

Lifetime = 5 years.

Activity Definition E13

Name of Activity

REPLACE A T5 LUMINAIRE WITH A LED LUMINAIRE

Eligibility Requirements

1. Must be an existing 2 foot, 3 foot, 4 foot or 5 foot T5 Luminaire or a luminaire modified with T5 adaptor kit which contains a T5 linear fluorescent Lamp (as defined in Tables A9.1 and A9.3).
2. Existing lighting equipment must be in working order at time of replacement.

Equipment Requirements

1. The new End-User Equipment must be a LED Luminaire – Linear Lamp as defined in Table A9.3 of Schedule A.
2. The new End-User Equipment must not be a Retrofit Luminaire – LED Linear Lamp or Modified Luminaire – LED Linear Lamp as defined in Table A9.3 of Schedule A.
3. Any End-User Equipment classified under Table A9.3 must be accepted by the Scheme Administrator as meeting the requirements of Table A9.4 of Schedule A.
4. Lamp Life must be at least 20,000 hours when measured in accordance with Table A9.6.
5. The new End-User Equipment must be compatible with any dimmer installed on the same circuit as the new End-User Equipment.

Implementation Requirements

1. The activity must be performed by a person authorised to carry out electrical wiring work under section 14 (1) of the *Home Building Act 1989*.

Activity Energy Savings

Deemed Activity Electricity Savings = Electricity Savings Factor

Where:

- *Electricity Savings Factor*, in MWh, is the value from Table E13.1 or E13.2 corresponding to the Lamp Circuit Power (LCP) specified in Table A9.4 of Schedule A.

Table E13.1 – Residential Building Electricity Savings Factor (MWh per T5 Luminaire replaced)

Existing Luminaire	**Light Output of new End-User Equipment (lm)**	**Lamp Circuit Power of the replacement luminaire (Watts)**												
		≤10 W	**≤15 W**	**≤20 W**	**≤25 W**	**≤30 W**	**≤35 W**	**≤40 W**	**≤45 W**	**≤50 W**	**≤60 W**	**≤70 W**	**≤80 W**	**≤90 W**
550 ≤ 700 mm (1 lamp)	≥ 600	0.09	-	-	-	-	-	-	-	-	-	-	-	-
700 ≤ 1150 mm (1 lamp)	≥ 1100	0.20	0.12	0.05	-	-	-	-	-	-	-	-	-	-
1150 ≤ 1350 mm (1 lamp)	≥ 1500	-	0.23	0.15	0.08	-	-	-	-	-	-	-	-	-
1350 ≤ 1500 (1 lamp)	≥ 2400	-	-	0.26	0.18	0.11	0.03	-	-	-	-	-	-	-
550 ≤ 700 mm (2 lamps)	≥ 1200	-	0.26	0.18	0.11	-	-	-	-	-	-	-	-	-
700 ≤ 1150 mm (2 lamps)	≥ 2200	-	-	0.39	0.32	0.24	0.17	0.09	-	-	-	-	-	-
1150 ≤ 1350 mm (2 lamps)	≥ 3000	-	-	-	-	0.45	0.38	0.30	0.23	0.15	-	-	-	-
1350 ≤ 1500 (2 lamps)	≥ 4900	-	-	-	-	-	0.59	0.51	0.44	0.36	0.21	0.06	-	-

550 ≤ 700 mm (3 or more lamps)	≥ 1900	-	-	0.42	0.35	0.27	0.20	0.12	0.05	-	-	-	-	-
700 ≤ 1150 mm (3 or more lamps)	≥ 3300	-	-	-	-	0.59	0.51	0.44	0.36	0.29	0.14	-	-	-
1150 ≤ 1350 mm (3 or more lamps)	≥ 4500	-	-	-	-	-	-	-	0.68	0.60	0.45	0.30	0.15	-
1350 ≤ 1500 (3 or more lamps)	≥ 7300	-	-	-	-	-	-	-	-	-	0.77	0.62	0.47	0.32

Table E13.2 – Small Business Site Electricity Savings Factor (MWh per T5 Luminaire replaced)

Existing Luminaire	**Light Output of new End-User Equipment (lm)**	**Lamp Circuit Power of the replacement luminaire (Watts)**												
		≤10 W	**≤15 W**	**≤20 W**	**≤25 W**	**≤30 W**	**≤35 W**	**≤40 W**	**≤45 W**	**≤50 W**	**≤60 W**	**≤70 W**	**≤80 W**	**≤90 W**
550 ≤ 700 mm (1 lamp)	≥ 600	0.25	-	-	-	-	-	-	-	-	-	-	-	-
700 ≤ 1150 mm (1 lamp)	≥ 1100	0.55	0.34	0.13	-	-	-	-	-	-	-	-	-	-
1150 ≤ 1350 mm (1 lamp)	≥ 1500	-	0.63	0.42	0.21	-	-	-	-	-	-	-	-	-
1350 ≤ 1500 (1 lamp)	≥ 2400	-	-	0.71	0.50	0.29	0.08	-	-	-	-	-	-	-
550 ≤ 700 mm (2 lamps)	≥ 1200	-	0.71	0.50	0.29	-	-	-	-	-	-	-	-	-
700 ≤ 1150 mm (2 lamps)	≥ 2200	-	-	1.09	0.88	0.67	0.46	0.25	-	-	-	-	-	-
1150 ≤ 1350 mm (2 lamps)	≥ 3000	-	-	-	-	1.26	1.05	0.84	0.63	0.42	-	-	-	-
1350 ≤ 1500 (2 lamps)	≥ 4900	-	-	-	-	-	1.64	1.43	1.22	1.01	0.59	0.17	-	-
550 ≤ 700 mm (3 or more lamps)	≥ 1900	-	-	1.18	0.97	0.76	0.55	0.34	-	-	-	-	-	-
700 ≤ 1150 mm (3 or more lamps)	≥ 3300	-	-	-	-	1.64	1.43	1.22	1.01	0.80	0.38	-	-	-
1150 ≤ 1350 mm (3 or more lamps)	≥ 4500	-	-	-	-	-	-	-	1.89	1.68	1.26	0.84	0.42	-
1350 ≤ 1500 (3 or more lamps)	≥ 7300	-	-	-	-	-	-	-	-	-	2.14	1.72	1.30	0.88

Lifetime (for information purposes only)

Residential Building Lifetime = 15 years.
Small Business Site Lifetime = 10 years.

Schedule F – Activity Definitions for Installation of High Efficiency Appliances for Businesses (clause 9.9)

Activity Definition F1.1

Note: certain product types have been suspended under this Activity Definition under clause 6.11.

Name of Activity
INSTALL A NEW HIGH EFFICIENCY REFRIGERATED CABINET

Equipment Requirements

1. The New End-User Equipment End-User Equipment must be a Refrigerated Cabinet as defined within the terms of the *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2024*.
2. The Refrigerated Cabinet must have an Energy Efficiency Index (EEI) below 77, as recorded in the GEMS Registry, with the exception of Integral Ice Cream Freezer Cabinets (Product Class 5 in Table F1.1.1) which must have an EEI below 51, as recorded in the GEMS Registry.
3. The Refrigerated Cabinet must be a registered product based on *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2024* or the *New Zealand Energy Efficiency (Energy Using Products) Amendment Regulations 2025*.
4. The new End-User Equipment must not have 2 or more display sides.

Implementation Requirements

1. The New End-User Equipment must be installed and must not replace an existing refrigerated cabinet.
2. The New End-User Equipment must be used as the Refrigerated Cabinet Product Class, as set out in the second column of Table F1.1.1, within which it is registered in *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020*.
3. The activity must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.

Equipment Energy Savings

Equation F1.1.1
Deemed Equipment Electricity Savings = TEC × (Baseline EEI / Product EEI – 1) × af × 365× Lifetime/1000

Where:

- *Total Energy Consumption* (TEC), in kWh/day, is the daily TEC of the new Refrigerated Cabinet model as recorded in the GEMS Registry
- *Baseline Energy Efficiency Index* is the Baseline EEI as defined in Table F1.1.1
- *Product EEI* is the EEI of the new Refrigerated Cabinet model as recorded in the GEMS Registry
- *af* is the adjustment factor as defined in Table F1.1.1
- *Lifetime*, in years, is specified in Table F1.1.2

Table F1.1.1 Baseline EEI and Adjustment Factor by Product Class for New End-User Equipment

Product Type	Refrigerated Cabinet Product Class (Product Characteristics Code)	AS 1731.14 Product Types	af	Baseline EEI	
				Heavy Duty (HD)	*Normal Duty (ND) and Light Duty (LD)*
1. Integral Refrigerated Display Cabinet	Class 1 (IRH)	HC1, HC2, HC3, HC4, HC5, HC6	1.0	-	77
	Class 2 (IFH)	IHF1, IHF3, IHF4, IHF5, IHF6 (>500l)	1.0	-	60
	Class 7 (IRV)	IVC1, IVC2, IVC3, IVC4 Glass door (M1)	1.0	-	45
	Class 8 (IFV)	IVF1, IVF2, IVF4 Glass door	1.0	-	77
	Class 11 (IRV-4)	IVC4 Glass door (M2)	1.0	-	77

2. Integral Ice Cream Freezer Cabinet	Class 5 (IFH-5)	IHF5, IHF6 (<500 litres)	1.0	-	77
3. Remote Refrigerated Display Cabinet	Class 12 (RRH)	RS6, RS7, RS8, RS9	1.0	-	77
	Class 13 (RFH)	RS13, RS14,	1.0	-	60
	Class 14 (RRV or RRV-2)	RS1, RS2, RS3, RS4, RS5, RS10	1.0	-	60
	Class 15 (RFV)	RS11, RS12, RS15, RS16, RS17, RS18, RS19, RS20	1.0	-	77
4. Gelato or Ice Cream Scooping Cabinet	Class 6 (GSC or ISC)		1.0	-	45
5. Refrigerated Storage Cabinet	Class 3 (SRH)		LD: 1.2 ND or HD: 1.0	60	60
	Class 4 (SFH)		LD: 1.1 ND or HD: 1.0	60	60
	Class 9 (SRV)		LD: 1.2 ND or HD: 1.0	77	77
	Class 10 (SFV)		LD: 1.1 ND or HD: 1.0	77	77

Lifetime

Table F1.1.2

Refrigerated Cabinet Class	Temperature class	Lifetime (years)
Classes 1 - 6, 9, 10	All	8
Classes 7, 8 and 11	All	8
Classes 12 - 15	All	12

Activity Definition F1.2

Note: certain product types have been suspended under this Activity Definition under clause 6.11.

Name of Activity
REPLACE AN EXISTING REFRIGERATED DISPLAY CABINET

Equipment Requirements

1. The End-User Equipment must be a Refrigerated Cabinet (RC) as defined within the terms of the *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2024*.
2. The refrigerated cabinet must have an Energy Efficiency Index (EEI) below 81, as recorded in the GEMS Registry, with the exception of Integral Ice Cream Freezer Cabinets (Product Class 5 in Table F1.2.1) which must have an EEI below 51, as recorded in the GEMS Registry.
3. The End-User Equipment must be a registered product based on *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2024* or the *New Zealand Energy Efficiency (Energy Using Products) Amendment Regulations 2025*.
4. The replacement End-User Equipment must not have 2 or more display sides.
5. The existing End-User Equipment (that is, the End-User Equipment that is replaced as part of the Implementation) must meet at least one of (a), (b) and (c) below.
   a. The existing End-User Equipment is recorded in the GEMS Registry as being the same Refrigerated Cabinet Product Class as the replacement End-User Equipment, as set out in the second column of Table F1.2.1.
   b. The existing End-User Equipment is recorded in the GEMS Registry as being of an AS 1731.14 Product Type, as set out in the third column of Table F1.2.1, that is in the same row of Table F1.2.1 as the Refrigerated Cabinet Product Class of the replacement End-User-Equipment, as set out in the second column of Table F1.2.1.
   c. The ACP provides evidence satisfactory to the Scheme Administrator that the existing End-User Equipment is of an AS 1731.14 Product Type, as set out in the third column of Table F1.2.1, that is in the same row of Table F1.2.1 as the Refrigerated Cabinet Product Class of the replacement End-User-Equipment, as set out in the second column of Table F1.2.1.

Implementation Requirements

1. The existing End-User Equipment must be removed and disposed of in accordance with legislation.
2. The replacement End-User Equipment must be installed.
3. The activity, including the removal of the existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.

Equipment Energy Savings

Equation F1.2.1
Deemed Equipment Electricity Savings = TEC × (Baseline EEI / Product EEI – 1) × af × 365× Lifetime/1000

Where:

- *Total Energy Consumption* (TEC), in kWh/day, is the daily TEC of the replacement Refrigerated Cabinet model as recorded in the GEMS Registry
- *Baseline Energy Efficiency Index* is the Baseline EEI of the product being replaced as defined in Table F1.2.1
- *Product EEI* is the EEI of the replacement Refrigerated Cabinet model as recorded in the GEMS Registry
- *af* is the adjustment factor as defined in Table F1.2.1
- *Lifetime*, in years, is specified in Table F1.2.2.

Table F1.2.1 Baseline EEI and Adjustment Factor by Product Class for replacement and existing End-User Equipment

Product Type	Refrigerated Cabinet Product Class (Product Characteristics Code)	AS 1731.14 Product Types	af	Baseline EEI	
				Heavy Duty (HD)	*Normal Duty (ND) and Light Duty (LD)*
1. Integral Refrigerated Display Cabinet	Class 1 (IRH)	HC1, HC2, HC3, HC4, HC5, HC6	1.0	-	100
	Class 2 (IFH)	IHF1, IHF3, IHF4, IHF5, IHF6 (>500l)	1.0	-	77

	Class 7 (IRV)	IVC1, IVC2, IVC3, IVC4 Glass door (M1)	1.0	-	60
	Class 8 (IFV)	IVF1, IVF2, IVF4 Glass door	1.0	-	100
	Class 11 (IRV-4)	IVC4 Glass door (M2)	1.0	-	100
2. Integral Ice Cream Freezer Cabinet	Class 5 (IFH-5)	IHF5, IHF6 (<500 litres)	1.0	-	100
3. Remote Refrigerated Display Cabinet	Class 12 (RRH)	RS6, RS7, RS8, RS9	1.0	-	100
	Class 13 (RFH)	RS13, RS14,	1.0	-	77
	Class 14 (RRV or RRV-2)	RS1, RS2, RS3, RS4, RS5, RS10	1.0	-	77
	Class 15 (RFV)	RS11, RS12, RS15, RS16, RS17, RS18, RS19, RS20	1.0	-	100
4. Gelato or Ice Cream Scooping Cabinet	Class 6 (GSC or ISC)		1.0	-	60
5. Refrigerated Storage Cabinet	Class 3 (SRH)		LD: 1.2 ND or HD: 1.0	77	77
	Class 4 (SFH)		LD: 1.1 ND or HD: 1.0	77	77
	Class 9 (SRV)		LD: 1.2 ND or HD: 1.0	100	100
	Class 10 (SFV)		LD: 1.1 ND or HD: 1.0	100	100

Lifetime

Table F1.2.2

Refrigerated Cabinet Class	Temperature class	Lifetime (years)
Classes 1 - 6, 9, 10	All	8
Classes 7, 8 and 11	All	8
Classes 12 - 15	All	12

Activity Definition F2

Name of Activity

INSTALL A NEW HIGH EFFICIENCY LIQUID CHILLING PACKAGE

Equipment Requirements

1. The End User Equipment must be a Liquid Chilling Package (LCP) registered in the GEMS Registry as complying with the *Greenhouse and Energy Minimum Standards (Liquid-chilling Packages Using the Vapour Compression Cycle) Determination 2012*.
2. The LCP must have an IPLV at least 10% greater than the *Baseline* for the corresponding figure for the type and cooling capacity in Table F2.1.

Implementation Requirements

1. The LCP must be installed.

Equipment Energy savings

Deemed Equipment Electricity Savings = (Capacity ÷ Baseline – Capacity ÷ IPLV) × EFLH × Lifetime / 1000

Where:

- *Capacity*, in kWR, is the total rated cooling capacity of the new Liquid Chilling Package as recorded in the GEMS Registry.
- *Baseline* is the corresponding figure for the cooling capacity class and type of the new Liquid Chilling Package as recorded in the GEMS registry, or if there is no value recorded, use Table F2.1.
- IPLV is the Integrated Part Load Value of the new Liquid Chilling Package as recorded in the GEMS Registry.
- *EFLH* is the Equivalent Full Load Hours and is the corresponding figure for the cooling capacity class and type of the new Liquid Chilling Package in Table F2.1.
- *Lifetime*, in years, is the corresponding figure for the cooling capacity class and type of the new Liquid Chilling Package in Table F2.2.

Table F2.1

LCP type	Cooling capacity	Baseline (IPLV)*	EFLH (hours)
Air cooled	350 to 499 kWR	4.6	2323
Air cooled	500 to 699 kWR	4.7	2323
Air cooled	700 to 999 kWR	4.7	2323
Air cooled	1000 to 1499 kWR	4.5	2323
Air cooled	Greater than 1500 kWR	4.1	2323
Water cooled	350 to 499 kWR	9.0	2323
Water cooled	500 to 699 kWR	8.6	2323
Water cooled	700 to 999 kWR	9.7	2323
Water cooled	1000 to 1499 kWR	9.0	2323
Water cooled	Greater than 1500 kWR	9.9	2323

*IPLV values only to be used if there is no data recorded in the GEMS Registry.

Lifetime

The Energy Savings from the installation of a new Liquid Chilling Package are assumed to persist at a constant level for the expected lifetime of the LCP. The Lifetime, in years, is the figure corresponding to the type and capacity class in Table F2.2.

Table F2.2

LCP Type	Capacity class	Lifetime (years)
All	All	12

Activity Definition F3

Name of Activity

INSTALL A NEW HIGH EFFICIENCY CLOSE CONTROL AIR CONDITIONER

Equipment Requirements

1. The End User Equipment must be a Close Control Air Conditioner (CCAC) registered in the GEMS Registry as complying with the *Greenhouse and Energy Minimum Standards (Close Control Air Conditioner) Determination 2012*.
2. The CCAC must have an EER at least 20% greater than the *Baseline* for the corresponding figure for the type and cooling capacity in Table F3.1.

Implementation Requirements

1. The CCAC must be installed.

Equipment Energy savings

Deemed Equipment Electricity Savings = (Capacity ÷ Baseline – Capacity ÷ EER) × Hours × Lifetime / 1000

Where:

- *Capacity*, in kW, is the total cooling capacity of the new CCAC as determined using AS/NZS 4965.1 and recorded in the GEMS Registry.
- *Baseline* is the corresponding figure for the cooling capacity class of the new CCAC as determined by AS/NZS 4965.1 in Table F3.1.
- *EER* is the Energy Efficiency Ratio as determined using AS/NZS 4965.1 and recorded in the GEMS Registry.
- *Hours* is the annual operating hours and is the corresponding figure for the cooling capacity class of the new CCAC.
- *Lifetime*, in years, is the corresponding figure for the cooling capacity class of the new CCAC as determined by AS/NZS 4965.1 in Table F3.2.

Table F3.1

CCAC cooling capacity class	Baseline (EER)	Hours (hours p.a.)
Less than 19.05 kW	3.21	5694
19.05 to less than 39.5 kW	3.18	5694
39.5 to less than 70.0 kW	3.20	5694
Greater than or equal to 70.0 kW	3.18	5694

Lifetime

The Energy Savings from the installation of a new CCAC are assumed to persist at a constant level for the expected lifetime of the CCAC. The Lifetime, in years, is the figure corresponding to the type and capacity class in Table F3.2.

Table F3.2

CCAC capacity class	Capacity class	Lifetime (years)
All	All	10

Activity Definition F4

Name of Activity

INSTALL A NEW HIGH EFFICIENCY AIR CONDITIONER OR REPLACE AN EXISTING AIR CONDITIONER WITH A HIGH EFFICIENCY AIR CONDITIONER

Eligibility Requirements

1. This activity must be an installation of a new high efficiency Air Conditioner or a replacement of an existing Air Conditioner (whether operational or not) with a high efficiency Air Conditioner that is greater than or equal to 30 kW Cooling Capacity.
2. For the purposes of clause 9.9.1(d), the New or replacement End-User Equipment must be installed in a Large Business Site and cannot be installed in a Residential Building or Small Business Site, unless the activity is the replacement of an existing Air Conditioner in a centralised system or in the common areas of a BCA Class 2 building.

Equipment Requirements

1. The New End-User Equipment or replacement End-User Equipment must be registered in the GEMS Registry as complying with the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019* for systems under 65 kW, or *Greenhouse and Energy Minimum Standards (Air Conditioners above 65kW) Determination) 2022* for systems above 65 kW, under Product Classes 5-12, 18-21, 24-25 or 27 as listed in the GEMS Registry.
2. If the New End-User Equipment or replacement End-User Equipment has a Cooling Capacity recorded in the GEMS Registry:
    a. It must have a Commercial TCSPF_mixed value, as recorded in the GEMS Registry, equal to or greater than the Minimum Commercial TCSPF_mixed value for the same Product Class in Table F4.4; or
    b. If it does not have a Commercial TCSPF_mixed value recorded in the GEMS Registry, then it must have a Rated AEER in the GEMS Registry equal to or greater than the Minimum Rated AEER for the same Product Class in Table F4.4.
3. If the New End-User Equipment or replacement End-User Equipment has a Heating Capacity recorded in the GEMS Registry, and is installed in the hot or average zone as defined in Table A27:
    a. It must have a Commercial HSPF_mixed value, as recorded in the GEMS Registry, equal to or greater than the Minimum Commercial HSPF_mixed value for the same Product Class in Table F4.4; or
    b. If it does not have a Commercial HSPF_mixed value recorded in the GEMS Registry, then it must have a Rated ACOP in the GEMS Registry equal to or greater than the Minimum Rated ACOP for the same Product Class in Table F4.4.
4. If the New End-User Equipment or replacement End-User Equipment has a Heating Capacity recorded in the GEMS Registry and is installed in the cold zone as defined in Table A27:
    a. It must have a Commercial HSPF_cold value, as recorded in the GEMS Registry, equal to or greater than the Minimum Commercial HSPF_cold value for the same Product Class in Table F4.4; or
    b. If it does not have a Commercial HSPF_cold value recorded in the GEMS Registry, then it must have a Rated ACOP in the GEMS Registry equal to or greater than the Minimum Rated ACOP for the same Product Class in Table F4.4.
5. If the New End-User Equipment or replacement End-User Equipment is an eligible system for Product Classes 5-12 and 24-25, the model number(s) must match the model number(s) recorded in the GEMS registry.
6. If the New End-User Equipment or replacement End-User Equipment is an eligible outdoor Multi-split system under the GEMS Registry for Product Classes 18-21 and 27:
    a. the outdoor unit part of the GEMS registered model number must match the model number of the outdoor unit being installed,
    b. the manufacturer brand must be the same for all indoor and outdoor End-User Equipment, and
    c. the unit(s) must be an approved combination by the manufacturer.

Implementation Requirements

1. The existing End-User Equipment must be removed.
2. The New End-User Equipment or replacement End-User Equipment must be installed.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.

Equipment Energy savings

Equation F4.1

$$\textit{Deemed Activity Electricity Savings} = [(\textit{Reference Cooling Annual Energy Use} - \textit{Cooling Annual Energy Use}) + (\textit{Reference Heating Annual Energy Use} - \textit{Heating Annual Energy Use})] \times \textit{Lifetime} / 1000$$

Where:

- *Reference Cooling Annual Energy Use* and *Reference Heating Annual Energy Use*, in kWh/y, are calculated using Equation F4.2 and F4.3 respectively;
- *Cooling Annual Energy Use and Heating Annual Energy Use,* in kWh/y, are the values of Commercial tcec and Commercial thec of the New End User Equipment or replacement End-User Equipment as recorded in the GEMS Registry, for the zone in which the product is installed, as defined in Table A27;
- If the New End User Equipment or replacement End-User Equipment does not have Commercial tcec and Commercial thec values as recorded in the GEMS Registry, the Cooling Annual Energy Use and Heating Annual Energy Use are determined using Equations F4.4 and F4.5 respectively; and
- *Lifetime*, in years, is as specified in Table F4.6.

Equation F4.2

Reference Cooling Annual Energy Use = Cooling Capacity × Equivalent Cooling Hours / Baseline Cooling AEER

Equation F4.3

Reference Heating Annual Energy Use = Heating Capacity × Equivalent Heating Hours / Baseline Heating ACOP

Where:

- For Product Classes 5-12 and 24-25, *Cooling Capacity* and *Heating Capacity*, in kW, are the values of Cooling Capacity at 35°C and Heating Capacity at 7°C of the New End User Equipment or replacement End-User Equipment as recorded in the GEMS Registry;
- For Product Classes 18-21 and 27, Cooling Capacity and Heating Capacity, in kW, are either
  - the sum of the indoor unit's Cooling Capacities at 35°C or Heating Capacities at 7°C as provided in the manufacturer documentation; or
  - the outdoor unit's Cooling Capacity at 35°C or Heating Capacity at 7°C of the New End User Equipment or replacement End-User Equipment as recorded in the GEMS Registry; whichever is lower;
- *Equivalent Cooling Hours* and *Equivalent Heating Hours*, in h/y, are specified in Table F4.1, according to the climate zone in which the product is installed, as defined in Table A27; and
- *Baseline Cooling AEER* and *Baseline Heating ACOP* are specified in Table F4.2, according to the Product Class and application type (new or replacement).

Equation F4.4

Cooling Annual Energy Use = Cooling Capacity × Equivalent Cooling Hours / Rated AEER

Equation F4.5

Heating Annual Energy Use = Heating Capacity × Equivalent Heating Hours / Rated ACOP

Where:

- *Cooling Capacity* and *Heating Capacity*, in kW, are the values of Cooling Capacity at 35°C and Heating Capacity at 7°C of the New End User Equipment or replacement End-User Equipment as recorded in the GEMS Registry;
- *Equivalent Cooling Hours* and *Equivalent Heating Hours*, in h/y, are specified in Table F4.1, according to the climate zone in which the product is installed, as defined in Table A27; and
- *Rated AEER* and *Rated ACOP* are the New End User Equipment or replacement End-User Equipment's Rated AEER and Rated ACOP as recorded in the GEMS Registry.

Table F4.1 - Commercial Equivalent Cooling and Heating Hours (h/y) derived from AS/NZS 3823.4

	Equivalent Cooling Hours (h/y)	**Equivalent Heating Hours (h/y)**
Hot Zone	1754	71
Average Zone	801	303
Cold Zone	530	530

Table F4.2 – Baseline AEER and Baseline ACOP for a new or replacement Air Conditioner

Product Type	**Product Class**	**New Install**	**Replacement**

		Baseline Cooling AEER	Baseline Heating ACOP	Baseline Cooling AEER	Baseline Heating ACOP
Air-to-air: Single-split, Non-ducted and Multi-split	8 and 18	3.66	2.33	3.33	2.17
Air-to-air: Single-split, Non-ducted and Multi-split	9 and 19	3.22	2.11	2.93	1.97
Air-to-air: Single-split, Multi-split, Unitary, and Ducted or Non-ducted	5, 6, 10, 11 and 20	3.1	2.05	2.8	1.90
Air-to-air: Multi-split, Unitary, and Ducted or Non-Ducted	7, 12, 21, 24, 25 and 27	2.9	1.95	2.75	1.88

Table F4.3 (deleted)

Table F4.4 – Commercial Minimum TCSPF/HSPF Requirement or Rated AEER/ACOP Requirement*

Product Type	Product Class	Minimum Commercial TCSPF_mixed	Minimum Commercial HSPF_mixed	Minimum Commercial HSPF_cold	Minimum Rated AEER	Minimum Rated ACOP
Air-to-air: Single-split, Non-ducted and Multi-split	8 and 18	7.0	4.5	4.0	4.3	4.4
Air-to-air: Single-split, Non-ducted and Multi-split	9 and 19	5.5	4.0	3.5	3.6	3.8
Air-to-air: Single-split, Multi-split, and Ducted or Non-ducted	10, 11 and 20	5.0	3.5	3.5	3.5	3.8
Air-to-air: Single-split, Multi-split, Unitary, and Ducted or Non-Ducted	5, 6, 7, 12, 21, 24, 25 and 27	3.5	3.0	2.5	3.3	3.5

*Only to be used if there is no Commercial TCSPF/HSPF data recorded in the GEMS Registry.

Table F4.5 (deleted)

Lifetime

Table F4.6

Product Class	Lifetime (years)
All	12

Activity Definition F5

Name of Activity

INSTALL AN ELECTRONICALLY COMMUTATED MOTOR TO POWER A FAN IN AN INSTALLED REFRIGERATED CABINET, FREEZER OR COOL ROOM

Equipment Requirements

1. The End-User Equipment must be an electronically commutated (brushless DC) motor.
2. The nominal input power (W) of the End-User Equipment as declared by the manufacturer must be less than or equal to 500 W at full capacity with the impeller fitted.
3. The output power (W) or airflow volume (m^3/hour) of the End-User Equipment as declared by the manufacturer must be equal to or greater than the existing refrigeration fan it replaces.
4. The End-User Equipment must meet any other requirements specified by the Scheme Administrator, including the suitability of the impeller for the motor.

Implementation Requirements

1. The End-User Equipment must be installed into a refrigerated cabinet or reach in freezer as defined by the *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2024*, or a cool room evaporator unit that is in use (i.e. not a new refrigeration system).
2. The End-User Equipment must replace an equivalent shaded pole motor or a permanent split capacitor motor as identified by the manufacturer of the End-User Equipment.
3. The installation must be according to manufacturer guidelines and any requirements specified by the Scheme Administrator.

Equipment Energy savings

Deemed Equipment Electricity Savings = (Input Power × (a – Average Power) + b) × (1 + (1 ÷ COP)) × Hours × Lifetime / 10^6

Where:

- *Input Power*, in Watts, is the nominal input power of the new End User-Equipment at full throttle with the impeller fitted.
- *a* is the regression coefficient and *b* is the error in Regression Analysis between the nominal input power of a sample of fans powered by an electronically commutated motor and fans powered by a shaded pole motor or a permanent split capacitor motor and are the corresponding figures for the End-User Equipment nominal power consumption in Table F5.1.
- *Average Power* is the average input power of the new End-User Equipment over a year compared to its nominal input power and is the corresponding figure the End-User Equipment's control system in Table F5.2.
- *COP* is the co-efficient of performance of the refrigeration system and is the corresponding figure for the refrigeration system in Table F5.3.
- *Hours* is the number of hours the fan is active per year and is the corresponding figure for the refrigeration system in Table F5.3.
- *Lifetime,* in years*,* is the useful life of the End-User Equipment and is the corresponding figure for the refrigeration system in Table F5.4.

Table F5.1

End-User Equipment nominal input power	***a***	***b***
Less than or equal to 34 W	1.7692	19.385
Greater than 34W and less than or equal to 500 W	1.2698	6.453

Table F5.2

Control system	***Average Power***
No control system in place	1
Temperature or pressure dependent speed control	0.8
Timer speed control (with low speed setting at least 8 hours per day)	0.8

Table F5.3

Refrigerator system type	***COP***	***Hours***
Refrigerated cabinet	2.8	8000
Reach in freezer	1.8	8000
Cool room	2.6	8000

Lifetime

The energy savings from the new End User Equipment are assumed to persist at a constant level for the expected lifetime of the equipment. The Lifetime, in years, is the corresponding figure for the refrigerator system type in Table F5.4.

Table F5.4

Refrigerator type	Years
Refrigerated cabinet	4
Reach in freezer	4
Cool room	7

Activity Definition F6

Name of Activity

INSTALL AN ELECTRONICALLY COMMUTATED MOTOR TO POWER A VENTILATION FAN

Equipment Requirements

1. The End-User Equipment must be an electronically commutated (brushless DC) motor.
2. The nominal input power (W) of the End-User Equipment as declared by the manufacturer must be less than or equal to 500 W at full capacity with the impeller fitted.
3. The output power (W) or airflow volume (m^3/hour) of the End-User Equipment as declared by the manufacturer must be equal to or greater than the existing ventilation fan it replaces.
4. The End-User Equipment must meet any other requirements specified by the Scheme Administrator, including the suitability of the impeller for the motor.

Implementation Requirements

1. The End-User Equipment must be part of a ducted fan or partition fan in an air-handling system, as defined in ISO 13349:2010.
2. The End-User Equipment must replace an equivalent shaded pole motor or a permanent split capacitor motor as identified by the manufacturer of the End-User Equipment.
3. The installation must be according to manufacturer guidelines and any requirements specified by the Scheme Administrator.

Equipment Energy savings

Deemed Equipment Electricity Savings = (Input Power × (a – Average Power) + b) × Hours × Lifetime / 10^6

Where:

- *Input Power*, in Watts, is the nominal input power of the new End User-Equipment at full throttle with the impeller fitted.
- *a* is the regression coefficient and *b* is the error in regression analysis between the nominal input power of a sample of fans powered by an electronically commutated motor and fans powered by a shaded pole motor or a permanent split capacitor motor and are the corresponding figures for the End-User Equipment nominal power consumption in Table F6.1.
- *Average Power* is the average input power of the new End-User Equipment over a year compared to its nominal input power and is the corresponding figure the End-User Equipment's control system in Table F6.2.
- *Hours* is the number of hours the fan is active per year and is the corresponding figure in Table F6.3 for the BCA building classification and Business Classification of the entity utilising the End-Use Service.
- *Lifetime,* in years*,* is the useful life of the End-User Equipment and is the corresponding figure for the ventilation system in Table F6.4.

Table F6.1

End-User Equipment nominal input power	***a***	***b***
Less than or equal to 34 W	1.7692	19.385
Greater than 34W and less than or equal to 500 W	1.2698	6.453

Table F6.2

Control system	***Average Power***
No control system in place	1
Temperature or pressure dependent speed control	0.8
Timer speed control (with low speed setting at least 8 hours per day)	0.8

Table F6.3

Building classification	**Business Classification**	**Annual operating hours**
BCA Class 2 (multi-unit dwellings)	Services provided by the body corporate or building owner	6300
BCA Class 3 (hotels)	All	6300
BCA Class 5 (offices)	All	2800
BCA Class 6 (shops or shopping centres)	All	4000
BCA Class 6 (restaurants or cafes)	All	5200

BCA Class 7a (car parks)	All	6900
BCA Class 7b (warehouses)	ANZSIC Division A (Agriculture, Forestry and Fishing)	8760
BCA Class 7b (warehouses)	Other than ANZSIC Division A	5100
BCA Class 8 (factories)	ANZSIC Division A (Agriculture, Forestry and Fishing)	5100
BCA Class 8 (factories)	ANZSIC Division C (Manufacturing)	5100
BCA Class 8 (factories)	Other than ANZSIC Division A or ANZSIC Division C	2800
BCA Class 9a (clinics)	All	2800
BCA Class 9a (hospitals)	All	8760
BCA Class 9b (theatres)	All	5200
BCA Class 9b (schools)	All	2000
BCA Class 9c (aged care)	All	6300

Lifetime

The energy savings from the new End User Equipment are assumed to persist at a constant level for the expected lifetime of the equipment. The Lifetime, in years, is the corresponding figure for the fan type in Table F6.4.

Table F6.4

Fan type	**Years**
Ducted fan	7
Partition fan	7

Activity Definition F7

Name of Activity

INSTALL A NEW HIGH EFFICIENCY MOTOR OR REPLACE AN EXISTING MOTOR WITH A HIGH EFFICIENCY MOTOR

Equipment Requirements

1. The End-User Equipment must be a 3 phase electric motor rated 'high efficiency' within the meaning of Part 5 of the *Greenhouse and Energy Minimum Standards (Three Phase Cage Induction Motors) Determination 2019* when tested in accordance with subclause 6.1.3 of IEC60034-2-1.
2. The electric motor must be a registered product under GEMS and comply with the *Greenhouse and Energy Minimum Standards (Three Phase Cage Induction Motors) Determination 2019*.

Implementation Requirements

1. The electric motor must be installed.
2. The electric motor must have a rated output from 0.73kW to <185kW.

Equipment Energy Savings

Deemed Equipment Electricity Savings = (((P ÷ (Baseline Efficiency ÷ 100)) – (P ÷ (New Efficiency ÷ 100))) × LUF x Asset Life × 8760 ÷ 1000

Where:

- *P* is the rated output of the new electric motor as recorded in the GEMS Registry.
- *Baseline Efficiency*, in %, is:
  - the Full Load Efficiency of the existing motor as determined using IEC60034-2-1 and recorded in the GEMS Registry; or
  - the corresponding value for the number of poles and rated output of the new electric motor from Table F7.3, if the existing motor is not listed in the GEMS Registry or if the new electric motor is New End User Equipment. For intermediate values of rated output, the efficiency shall be determined by linear interpolation
- *New Efficiency*, in %, is the Full Load Efficiency of the new electric motor as determined using IEC60034-2-1 and recorded in the GEMS Registry.
- *LUF* is the Default Load Utilisation Factors for the relevant High Efficiency Motor as set out in Table F7.1 (where the Business Classification and End-Use Service relevant to the Energy Savings are known), or otherwise Table F7.2
- *Asset Life*, in years, of the High Efficiency Motor is set out in Table F7.4 for the corresponding rated output of the High Efficiency Motor.

Table F7.1 Default Load Utilisation Factor for High Efficiency Motors – Where Business Classification and End-Use Service are known

Load Utilisation Factor	Refrigeration and freezing	Water/liquid pumping	Air compression	Air handling, fans, ventilation	Process Drives	Milling, mixing, grinding	Material handling/ conveying
Division A Agriculture, Forestry and Fishing	0.14	0.32	0.27	0.28	0.32	0.2	0.2
Division B Mining	0.09	0.36	0.32	0.41	0.32	0.32	0.28
Division C Manufacturing	0.28	0.32	0.27	0.32	0.27	0.24	0.28
Division D Electricity, Gas, Water and Waste Services	0.11	0.32	0.24	0.28	0.28	0.12	0.17
Division E Construction	0.09	0.24	0.15	0.15	0.17	0.14	0.2
Division F Wholesale Trade	0.2	0.14	0.07	0.13	0.13	0.03	0.11
Division G Retail Trade	0.17	0.09	0.07	0.13	0.13	0.03	0.07
Division H Accommodation and Food Services	0.24	0.11	0.04	0.14	0.13	0.09	0.11
Division I Transport, Postal and Warehousing	0.17	0.11	0.08	0.13	0.17	0.03	0.16
Division J Information Media and Telecommunications	0.11	0.09	0.04	0.1	0.11	0.03	0.03
Division K Financial and Insurance Services	0.09	0.05	0.04	0.06	0.06	0.03	0.03
Division L Rental, Hiring and Real Estate Services	0.09	0.05	0.04	0.06	0.06	0.03	0.03
Division M Professional, Scientific and Technical Services	0.17	0.07	0.05	0.08	0.08	0.04	0.03
Division N Administrative and Support Services	0.11	0.05	0.04	0.06	0.04	0.03	0.03
Division O Public Administration and Safety	0.09	0.05	0.04	0.06	0.04	0.03	0.03
Division P Education and Training	0.11	0.05	0.04	0.06	0.04	0.03	0.03

Load Utilisation Factor	Refrigeration and freezing	Water/liquid pumping	Air compression	Air handling, fans, ventilation	Process Drives	Milling, mixing, grinding	Material handling/ conveying
Division Q Health Care and Social Assistance	0.11	0.08	0.11	0.06	0.06	0.03	0.03
Division R Arts and Recreation Services	0.09	0.05	0.04	0.06	0.04	0.03	0.03
Division S Other Services	0.07	0.05	0.04	0.06	0.04	0.03	0.03

Table F7.2 Default Load Utilisation Factor for High Efficiency Motors – Where Business Classification or End-Use Service are not known

Rated output (kW)	LUF
0.73 to < 2.6	0.09
2.6 to < 9.2	0.10
9.2 to < 41	0.11
41 to < 100	0.13
100 to < 185	0.15

Table F7.3

Rated Output (kW)	Baseline efficiency (%)				Baseline efficiency (%) (60hz)			
	2 poles	4 poles	6 poles	8 poles	2 poles	4 poles	6 poles	8 poles
0.73	77.4	79.6	75.9	66.2	75.5	78.0	73.0	66.0
0.75	77.4	79.6	75.9	66.2	75.5	78.0	73.0	66.0
1.1	79.6	81.4	78.1	70.8	82.5	84.0	85.5	75.5
1.5	81.3	82.8	79.8	74.1	84.0	84.0	86.5	82.5
2.2	83.2	84.3	81.8	77.6	85.5	87.5	87.5	84.0
3	84.6	85.5	83.3	80.0	87.5	87.5	87.5	85.5
4	85.8	86.6	84.6	81.9	87.5	87.5	87.5	85.5
5.5	87.0	87.7	86.0	83.8	88.5	89.5	89.5	85.5
7.5	88.1	88.7	87.2	85.3	89.5	89.5	89.5	88.5
11	89.4	89.8	88.7	86.9	90.2	91.0	90.2	88.5
15	90.3	90.6	89.7	88.0	90.2	91.0	90.2	89.5
18.5	90.9	91.2	90.4	88.6	91.0	92.4	91.7	89.5
22	91.3	91.6	90.9	89.1	91.0	92.4	91.7	89.5
30	92.0	92.3	91.7	89.8	91.7	93.0	93.0	91.0
37	92.5	92.7	92.2	90.3	92.4	93.0	93.0	91.7
45	92.9	93.1	92.7	90.7	93.0	93.6	93.6	91.7
55	93.2	93.5	93.1	91.0	93.0	94.1	93.6	93.0
75	93.8	94.0	93.7	91.6	93.6	94.5	94.1	93.0
90	94.1	94.2	94.0	91.9	94.5	94.5	94.1	93.6
110	94.3	94.5	94.3	92.3	94.5	95.0	95.0	93.6
132	94.6	94.7	94.6	92.6	95.0	95.0	95.0	93.6
160	94.8	94.9	94.8	93.0	95.0	95.0	95.0	93.6
>160 < 185	95.0	95.1	94.9	93.3	95.4	95.0	95.0	93.6

Table F7.4 Asset Life for High Efficiency Motors (t)

Rated output (kW) of High Efficiency Motor	t (Asset life (years))
0.73 to < 2.6	12
2.6 to < 9.2	15
9.2 to < 41	20
41 to < 100	22
100 to < 185	25

Activity Definition F8

Name of Activity

REPLACE EXISTING GAS FIRED STEAM BOILER WITH A NEW HIGH EFFICIENCY GAS FIRED STEAM BOILER

Eligibility Requirements

1. The existing End-User Equipment must be a single, or multiple, Gas fired steam boiler(s) as defined in AS 3814.
2. The existing End-User Equipment is installed at a Site classified under the BCA as one or more of the following: Class 2, 3, 5, 6, 7, 8, 9 and 10 buildings.
3. The existing End-User Equipment must be:
    a. more than 10 years old; and
    b. be in working order at the time of replacement.

Equipment Requirements

1. The replacement End-User Equipment must be a new single, or multiple, Gas fired steam boiler(s) as defined in AS 3814.
2. The replacement End-User Equipment must have a nameplate capacity of 200 kW or higher.
3. Replacement End-User Equipment with a nameplate capacity of 1000 kW or above must have a linkageless (two service/stepper motors) burner with a turn-down ratio of at least 4:1.
4. Replacement End-User Equipment with a nameplate capacity of 2000 kW or above must include an oxygen trim system and have a linkageless (two service/stepper motors) burner with a turn-down ratio of at least 4:1.
5. The replacement End-User Equipment must have a fuel-to-fluid efficiency of at least 80% when at high fire conditions.
6. The replacement End-User Equipment must meet any relevant standards and legislation.

Implementation Requirements

1. The existing End-User Equipment must be disconnected and removed; these tasks must be performed or supervised by a qualified person in accordance with relevant standards and legislation.
2. The installation must be in accordance with manufacturer guidelines, relevant standards and legislation and any requirements specified by the Scheme Administrator.
3. The Implementation Date must be on or before 30 June 2026.

Activity Energy Savings

For each Implementation:

$$Deemed\ Equipment\ Gas\ Savings = P \times DEI \times LUF \times Lifetime \times 8760 \div 1000$$

Where:

- *P,* in kW, is the lower of the nameplate capacity of the replacement or existing End-User Equipment.
- *DEI* is the Default Efficiency Improvement (as a fraction, not as a percentage) for replacing existing End-User Equipment with replacement End-User Equipment as specified in Table F8.1.
- *LUF* is the assigned Load Utilisation Factor for all Gas fired steam boilers as specified in Table F8.2.
- *Lifetime* is the number of years that savings will be deemed as specified in Table F8.3.

Table F8.1 Default Efficiency Improvement (DEI) for replacing existing End-User Equipment

Existing End-User Equipment installation year	**DEI for replacing existing End-User Equipment**	
	Steam boiler with a burner that is >10 years old	**Steam boiler with burner replaced ≤ 10 years ago**
Pre 1990	0.064	0.053
1990 and after	0.059	0.048

Table F8.2 Load Utilisation Factor (LUF) for Gas fired steam boilers

Business classification	**LUF**
All	0.206

Lifetime

Table F8.3 End-User Equipment Lifetime

End-User Equipment type	**Years**
All	10

Activity Definition F9

Name of Activity

REPLACE EXISTING GAS FIRED HOT WATER BOILER OR GAS FIRED WATER HEATER WITH A NEW HIGH EFFICIENCY GAS FIRED HOT WATER BOILER OR A NEW GAS FIRED WATER HEATER

Eligibility Requirements

1. The existing End-User Equipment must be a single, or multiple, Gas fired hot water boiler(s), or Gas fired water heater(s) as defined in AS 3814.
2. The existing End-User Equipment is installed at a Site classified under the BCA as one or more of the following: Class 2, 3, 5, 6, 7, 8, 9 and 10 buildings.
3. The existing End-User Equipment must be:
    a. more than 10 years old; and
    b. be in working order at the time of replacement.

Equipment Requirements

1. The replacement End-User Equipment must be a new single, or multiple, Gas fired hot water boiler(s), or Gas fired water heater(s) as defined in AS 3814.
2. The replacement End-User Equipment must not be a Gas fired storage water heater or a Gas fired instantaneous water heater as defined in AS 4552 or AS/NZS 5263.1.2.
3. The replacement End-User Equipment must have a nameplate capacity of 200 kW or higher.
4. Replacement End-User Equipment with a nameplate capacity of 1000 kW or above must have a linkageless (two service/stepper motors) burner with a turn-down ratio of at least 4:1.
5. Replacement End-User Equipment with a nameplate capacity of 2000 kW or above must include an oxygen trim system and have a linkageless (two service/stepper motors) burner with a turn-down ratio of at least 4:1.
6. The replacement End-User Equipment must have a fuel-to-fluid efficiency of at least 85% at a return water temperature of 60°C when at high fire conditions.
7. The replacement End-User Equipment must meet any relevant standards and legislation.

Implementation Requirements

1. The existing End-User Equipment must be disconnected and removed; these tasks must be performed or supervised by a qualified person in accordance with relevant standards and legislation.
2. The installation must be in accordance with manufacturer guidelines, relevant standards and legislation and any requirements specified by the Scheme Administrator.
3. The Implementation Date must be on or before 30 June 2026.

Activity Energy Savings

For each Implementation:

$$Deemed\ Equipment\ Gas\ Savings = P \times DEI \times LUF \times Lifetime \times 8760 \div 1000$$

Where:

- *P,* in kW, is the lower of the nameplate capacity of the replacement or existing End-User Equipment.
- *DEI* is the Default Efficiency Improvement (as a fraction, not as a percentage) for replacing existing End-User Equipment with replacement End-User Equipment as specified in Table F9.1.
- *LUF* is the assigned Load Utilisation Factor for all Gas fired hot water boilers or water heaters as specified in Table F9.2.
- *Lifetime* is the number of years that savings will be deemed as specified in Table F9.3.

Table F9.1 Default Efficiency Improvement (DEI) for replacing existing End-User Equipment

Existing End-User Equipment installation year	**DEI for replacing existing End-User Equipment**	
	Hot water boiler or water heater with a burner that is >10 years old	**Hot water boiler or water heater with burner replaced ≤ 10 years ago**
Pre 1990	0.059	0.048
1990 and after	0.053	0.042

Table F9.2 Load Utilisation Factor (LUF) for Gas fired hot water boilers and water heaters

Business classification	LUF
All	0.206

Lifetime

Table F9.3 End-User Equipment Lifetime

End-User Equipment type	Years
All	10

Activity Definition F10

Name of Activity

INSTALL AN OXYGEN TRIM SYSTEM ON A GAS FIRED STEAM BOILER, HOT WATER BOILER OR WATER HEATER

Eligibility Requirements

1. The End-User Equipment must be installed on a Gas fired steam boiler, hot water boiler, or water heater as defined in AS 3814.
2. The Gas fired steam boiler, hot water boiler, or water heater on which the End-User Equipment is installed must be located at a Site classified under the BCA as one or more of the following: Class 2, 3, 5, 6, 7, 8, 9 and 10 buildings.
3. The End-User Equipment cannot replace existing End-User Equipment regardless of its condition.
4. The Gas fired steam boiler, hot water boiler, or water heater on which the End-User Equipment is installed must have an existing digital burner control system capable of receiving a signal from a flue gas sensor for oxygen trim purposes, or have one installed at the time of commissioning of the End-User Equipment.

Equipment Requirements

1. The End-User Equipment must be an oxygen trim system including a flue gas sensor connected to a control panel, capable of sending a signal to a control damper on the burner air supply or variable speed drive on the fan motor.

Implementation Requirements

1. The installation must be in accordance with manufacturer guidelines, relevant standards and legislation and any requirements specified by the Scheme Administrator.

Activity Energy Savings

For each Implementation:

$$Deemed\ Equipment\ Gas\ Savings = P \times DEI \times LUF \times Lifetime \times 8760 \div 1000$$

Where:

- *P,* in kW, is the current nameplate capacity of the Gas fired steam boiler, hot water boiler, or water heater on which the End-User Equipment is installed. The nameplate capacity that can be used is capped at 3000kW. An Installation on a larger Gas fired steam boiler, hot water boiler, or water heater must use this capped figure.
- *DEI* is the Default Efficiency Improvement (as a fraction, not as a percentage) for installing the End-User Equipment as specified in Table F10.1.
- *LUF* is the assigned Load Utilisation Factor for all Gas fired steam boilers, hot water boilers, or water heaters as specified in Table F10.2.
- *Lifetime,* is the number of years that savings will be deemed as specified in Table F10.3.

Table F10.1 – Default Efficiency Improvement (DEI) for installing End-User Equipment

Activity	DEI
Install End-User Equipment on a steam boiler	0.018
Install End-User Equipment on a hot water boiler or water heater	0.015

Table F10.2 Load Utilisation Factor (LUF) for Gas fired steam boilers, hot water boilers, and water heaters

Business classification	LUF
All	0.206

Lifetime

Table F10.3 End-User Equipment Lifetime

End-User Equipment type	Years
All	10

Activity Definition F11

Name of Activity

REPLACE BURNER ON A GAS FIRED STEAM BOILER, HOT WATER BOILER, OR WATER HEATER

Eligibility Requirements

1. The existing End-User Equipment must be a Gas fired burner as defined in AS 3814.
2. The existing End-User Equipment must be installed on a Gas fired steam boiler, hot water boiler, or water heater as defined in AS 3814.
3. The Gas fired steam boiler, hot water boiler, or water heater on which the End-User Equipment is installed must be located at a Site classified under the BCA as one or more of the following: Class 2, 3, 5, 6, 7, 8, 9 and 10 buildings.
4. The existing End-User Equipment must be:
    a. in working order at the time of replacement;
    b. more than 10 years old; and
    c. have an air/fuel ratio that is controlled via a mechanical linkage.

Equipment Requirements

1. The replacement End-User Equipment must be a Gas fired burner as defined in AS 3814.
2. Replacement End-User Equipment that has a nameplate capacity of 1000 kW or more must:
    a. be of the linkageless (two service/stepper motors) type;
    b. have a turn-down ratio of at least 4:1; and
    c. be capable of receiving a signal from a flue gas sensor for oxygen trim purposes.

Implementation Requirements

1. Existing End-User Equipment that is replaced must be disconnected and removed; these tasks must be performed or supervised by a qualified person in accordance with relevant standards and legislation.
2. The installation must be in accordance with manufacturer guidelines, relevant standards and legislation and any requirements specified by the Scheme Administrator.

Activity Energy Savings

For each Implementation:

$$Deemed\ Equipment\ Gas\ Savings = P \times DEI \times LUF \times Lifetime \times 8760 \div 1000$$

Where:

- *P,* in kW, is the current nameplate capacity of the Gas fired steam boiler, hot water boiler, or water heater on which the End-User Equipment is installed. The nameplate capacity that can be used is capped at 3000kW. Installation on a larger Gas fired steam boiler, hot water boiler, or water heater must use this capped figure.
- *DEI* is the Default Efficiency Improvement (as a fraction, not as a percentage) for replacing the End-User Equipment as specified in Table F11.1.
- *LUF* is the assigned Load Utilisation Factor for all Gas fired steam boilers, hot water boilers, or water heaters as specified in Table F11.2.
- *Lifetime,* is the number of years that savings will be deemed as specified in Table F11.3.

Table F11.1 – Default Efficiency Improvement (DEI) for replacing End-User Equipment

Activity	DEI
Replace End-User Equipment	0.027

Table F11.2 Load Utilisation Factor (LUF) for Gas fired steam boilers, hot water boilers, and water heaters

Business classification	LUF
All	0.206

Lifetime

Table F11.3 End-User Equipment Lifetime

End-User Equipment type	Years
All	10

Activity Definition F12

Name of Activity

INSTALL AN ECONOMISER ON A GAS FIRED STEAM BOILER, HOT WATER BOILER, OR WATER HEATER

Eligibility Requirements

1. The End-User Equipment must be installed on a Gas fired steam boiler, hot water boiler, or water heater as defined in AS 3814.
2. The Gas fired steam boiler, hot water boiler, or water heater on which the End-User Equipment is installed must be located at a Site classified under the BCA as one or more of the following: Class 2, 3, 5, 6, 7, 8, 9 and 10 buildings.
3. The End-User Equipment cannot replace existing End-User Equipment regardless of its condition.
4. The End-User Equipment cannot be installed on a condensing Gas fired steam boiler, hot water boiler or water heater.
5. In cases where the End-User Equipment will be pre-heating a stream other than feedwater, a heat rejection stream must be available to run through the End-User Equipment at least 80% of the operating time of the Gas fired steam boiler, hot water boiler, or water heater.

Equipment Requirements

1. The End-User Equipment must be a heat exchanger that uses the products of combustion from a Gas fired steam boiler, hot water boiler, or water heater, to heat a fluid stream such as boiler feedwater.
2. The End-User Equipment must be of the condensing kind if it is installed on a Gas fired hot water boiler or water heater. The Gas fired hot water boiler or water heater stack must be constructed of stainless steel.
3. The End-User Equipment can be of the condensing or non-condensing kind if it is installed on a Gas fired steam boiler. The steam boiler stack can be constructed of carbon steel only if the End-User Equipment is of the non-condensing kind and the exhaust temperature can be maintained above dewpoint at all points in the stack.
4. The End-User Equipment must be fitted with a control system with minimum flow rates such that manual intervention is not required for operation, unless the End-User Equipment is specifically designed to run dry.

Implementation Requirements

1. At the time of commissioning, the exhaust temperature exiting the End-User Equipment whilst at high firing must be below 180°C for steam boilers, or below 100°C for condensing steam boilers, hot water boilers and water heaters.
2. The installation must be in accordance with manufacturer guidelines, relevant standards and legislation and any requirements specified by the Scheme Administrator.

Activity Energy Savings

For each Implementation:

$$Deemed\ Equipment\ Gas\ Savings = P \times DEI \times LUF \times Lifetime \times 8760 \div 1000$$

Where:

- *P* is the current nameplate capacity of the Gas fired steam boiler, hot water boiler, or water heater on which the End-User Equipment is installed, in kW.
- *DEI* is the Default Efficiency Improvement (as a fraction, not as a percentage) for installing the End-User Equipment as specified in Table F12.1.
- *LUF* is the assigned Load Utilisation Factor for all Gas fired steam boilers, hot water boilers, or water heaters as specified in Table F12.2.
- *Lifetime* is the number of years that savings will be deemed as specified in Table F12.3.

Table F12.1 – Default Efficiency Improvement (DEI) for installing End-User Equipment

Activity	**DEI**
Install End-User Equipment on a steam boiler	0.041
Install End-User Equipment on a hot water boiler or water heater	0.030

Table F12.2 Load Utilisation Factor (LUF) for Gas fired steam boilers, hot water boilers, and water heaters

Business classification	**LUF**
All	0.206

Lifetime

Table F12.3 End-User Equipment Lifetime

End-User Equipment type	**Years**
All	10

Activity Definition F13

Name of Activity

INSTALL A SENSOR BASED BLOWDOWN CONTROL ON A GAS FIRED STEAM BOILER

Eligibility Requirements

1. The End-User Equipment must be installed on a Gas fired steam boiler as defined in AS 3814.
2. The Gas fired steam boiler on which the End-User Equipment is installed must be located at a Site classified under the BCA as one or more of the following: Class 2, 3, 5, 6, 7, 8, 9 and 10 buildings.
3. The End-User Equipment cannot replace existing End-User Equipment regardless of its condition.

Equipment Requirements

1. The End-User Equipment must be a sensor based blowdown control, capable of automatically blowing down based on a sensor reading of the concentration of total dissolved solids (TDS) in the steam boiler.

Implementation Requirements

1. The installation must be in accordance with manufacturer guidelines, relevant standards and legislation and any requirements specified by the Scheme Administrator.

Activity Energy Savings

For each Implementation:

$$Deemed\ Equipment\ Gas\ Savings = P \times DEI \times LUF \times Lifetime \times 8760 \div 1000$$

Where:

- *P* is the current nameplate capacity of the Gas fired steam boiler on which the End-User Equipment is installed, in kW.
- *DEI* is the Default Efficiency Improvement (as a fraction, not as a percentage) for installing the End-User Equipment as specified in Table F13.1. Use your average operating pressure as defined in AS 3814, or the next lowest pressure in this table. If your average operating pressure is less than 8 bar, use 8 bar.
- *LUF* is the assigned Load Utilisation Factor for all Gas fired steam boilers as specified in Table F13.2.
- *Lifetime* is the number of years that savings will be deemed as specified in Table F13.3.

Table F13.1 – Default Efficiency Improvement (DEI) for installing End-User Equipment

Activity type	**Steam boiler operating pressure (bar)**			
	8	**10**	**12**	**15**
Installation of a sensor based blowdown control	0.0032	0.0034	0.0036	0.0038

Table F13.2 Load Utilisation Factor (LUF) for Gas fired steam boilers

Business classification	**LUF**
All	0.206

Lifetime

Table F13.3 End-User Equipment Lifetime

End-User Equipment type	**Years**
All	10

Activity Definition F14

Name of Activity

INSTALL A BLOWDOWN FLASH STEAM HEAT RECOVERY SYSTEM ON GAS FIRED STEAM BOILER

Eligibility Requirements

1. The End-User Equipment must be installed on a single, or multiple, Gas fired steam boiler(s) as defined in AS 3814.
2. The Gas fired steam boiler on which the End-User Equipment is installed must be located at a Site classified under the BCA as one or more of the following: Class 2, 3, 5, 6, 7, 8, 9 and 10 buildings.
3. The Gas fired steam boiler on which the End-User Equipment is installed must have an existing sensor based blowdown control, or have a sensor based blowdown control installed at the time of commissioning of the End-User Equipment.
4. The End-User Equipment cannot replace existing End-User Equipment regardless of its condition.

Equipment Requirements

1. The End-User Equipment must be a blowdown flash steam heat recovery system that injects flash steam from boiler blowdown into the boiler feed water tank via a sub-surface sparge line.

Implementation Requirements

1. The installation must be in accordance with manufacturer guidelines, relevant standards and legislation and any requirements specified by the Scheme Administrator.

Activity Energy Savings

For each Implementation:

$$Deemed\ Equipment\ Gas\ Savings = P \times DEI \times LUF \times Lifetime \times 8760 \div 1000$$

Where:

- *P* is the current nameplate capacity of the Gas fired steam boiler on which the End-User Equipment is installed, in kW. For End-User Equipment that recovers flash steam from blowdown from multiple steam boilers, the combined nameplate capacity of the steam boilers can be used.
- *DEI* is the Default Efficiency Improvement (as a fraction, not as a percentage) for installing the End-User Equipment as specified in Table F14.1. Use your average operating pressure as defined in AS 3814, or the next lowest pressure in this table. If your average operating pressure is less than 8 bar, use 8 bar.
- *LUF* is the assigned Load Utilisation Factor for all Gas fired steam boilers as specified in Table F14.2.
- *Lifetime* is the number of years that savings will be deemed as specified in Table F14.3.

Table F14.1 – Default Efficiency Improvement (DEI) for installing End-User Equipment

Activity type	**Steam boiler average operating pressure (bar)**			
	8	**10**	**12**	**15**
Installation of a blowdown flash steam heat recovery system	0.0052	0.0059	0.0065	0.0072

Table F14.2 Load Utilisation Factor (LUF) for Gas fired steam boilers

Business classification	**LUF**
All	0.206

Lifetime

Table F14.3 End-User Equipment Lifetime

End-User Equipment type	Years
All	10

Activity Definition F15

Name of Activity

INSTALL A RESIDUAL BLOWDOWN HEAT EXCHANGER ON GAS FIRED STEAM BOILER

Eligibility Requirements

1. The End-User Equipment must be installed on single, or multiple, Gas fired steam boiler(s) as defined in AS 3814.
2. The Gas fired steam boiler on which the End-User Equipment is installed must be located at a Site classified under the BCA as one or more of the following: Class 2, 3, 5, 6, 7, 8, 9 and 10 buildings.
3. The Gas fired steam boiler on which the End-User Equipment is installed must have an existing sensor based blowdown control, or have a sensor based blowdown control installed at the time of commissioning of the End-User Equipment.
4. The End-User Equipment cannot replace existing End-User Equipment regardless of its condition.
5. A fluid stream below 40°C, such as boiler makeup water, must be available at all times to transfer heat from the boiler blowdown.

Equipment Requirements

1. The End-User Equipment must be a residual blowdown heat exchanger; such that it transfers heat from the steam boiler's blowdown fluid to a fluid stream with a temperature not exceeding 40°C, such as steam boiler makeup water.

Implementation Requirements

1. The installation must be in accordance with manufacturer guidelines, relevant standards and legislation and any requirements specified by the Scheme Administrator.

Activity Energy Savings

For each Implementation:

$$Deemed\ Equipment\ Gas\ Savings = P \times DEI \times LUF \times Lifetime \times 8760 \div 1000$$

Where:

- *P* is the current nameplate capacity of the Gas fired steam boiler on which the End-User Equipment is installed, in kW. For End-User Equipment that recovers heat from blowdown from multiple steam boilers, the combined nameplate capacity of the steam boilers can be used.
- *DEI* is the Default Efficiency Improvement (as a fraction, not as a percentage) for installing the End-User Equipment as specified in Table F15.1. Use your average operating pressure as defined in AS 3814, or the next lowest pressure in this table. If your average operating pressure is less than 8 bar, use 8 bar.
- *LUF* is the assigned Load Utilisation Factor for all Gas fired steam boilers as specified in Table F15.2.
- *Lifetime* is the number of years that savings will be deemed as specified in Table F15.3.

Table F15.1 – Default Efficiency Improvement (DEI) for installing End-User Equipment

Activity type	**Steam boiler operating pressure (bar)**			
	8	**10**	**12**	**15**
Installation of a residual blowdown heat exchanger	0.0038	0.0037	0.0036	0.0035

Table F15.2 Load Utilisation Factor (LUF) for Gas fired steam boilers

Business classification	**LUF**
All	0.206

Lifetime

Table F15.3 End-User Equipment Lifetime

End-User Equipment type	Years
All	10

Activity Definition F16

Name of Activity

REPLACE ONE OR MORE EXISTING HOT WATER BOILERS OR WATER HEATERS WITH ONE OR MORE AIR SOURCE HEAT PUMP WATER HEATER SYSTEMS

Eligibility Requirements

1. The existing End-User Equipment must be gas or electric resistance hot water boiler(s) or water heater(s).
2. The existing gas or electric resistance hot water boiler(s) or water heater(s) does not have to be in working order at the time of replacement.
3. The existing End-User Equipment must be a gas hot water boiler(s) or gas water heater(s) if the new End-User Equipment is a gas boosted air sourced heat pump
4. The End-User Equipment must not be installed in a BCA Class 1 or 4 building.

Equipment Requirements

1. The installed End-User Equipment must be an air source heat pump water heater as defined by AS/NZS 4234.
2. The installed End-User Equipment must achieve minimum annual energy savings, when determined as an air sourced heat pump in accordance with the modelling procedure Published by the Scheme Administrator, of:
    - 60% when modelled in AS/NZS 4234 climate zone HP3-AU.
    - 60% when modelled in AS/NZS 4234 climate zone HP5-AU.
3. The installed End-User Equipment must be certified to comply with AS/NZS 2712 if it has a storage volume less than or equal to 700L.

Implementation Requirements

1. The existing End-User Equipment must be removed.
2. The replacement End-User Equipment must be installed at a Site in accordance with the Equipment Requirements.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.
4. Where the replacement End-User Equipment is a split system with refrigerant flows between the evaporator and tank, the location requirements of AS/NZS 5149.3:2016 and manufacturer installation recommendations must be followed.
5. Where the Implementation Date is on or after 1 December 2025, and the replacement End-User Equipment has an Average Insulated Storage Volume of 700 litres or less:
    a. the End-User Equipment provided by the manufacturer(s) of the heat pump unit and tank must have a warranty against defects covering a period of at least five years from the date of installation, purchase or supply as applicable; and
    b. if the person giving the warranty against defects is not in Australia, the warranty must also include the name and contact details of who to contact in Australia in the event of a product failure.

Equipment Energy savings

If the system(s) being replaced are gas-fired hot water boilers or gas-fired water heaters:

$$Deemed\ Equipment\ Gas\ Savings = \sum_{systems} \left[\left(\frac{RefElec}{0.788}\right) - HPGas\right] \times Capacity\ Factor \times Confidence\ Factor \times Lifetime/3.6$$

$$Deemed\ Equipment\ Electricity\ Savings = \sum_{systems} [-HPElec] \times Capacity\ Factor \times Confidence\ Factor \times Lifetime/3.6$$

If the system(s) being replaced are electric resistance hot water boilers or electric resistance water heaters:

$$Deemed\ Equipment\ Gas\ Savings = \sum_{systems} [-HPGas] \times Capacity\ Factor \times Confidence\ Factor \times Lifetime/3.6$$

$$Deemed\ Equipment\ Electricity\ Savings = \sum_{systems} [RefElec - HPElec] \times Capacity\ Factor \times Confidence\ Factor \times Lifetime/3.6$$

Where:

- *RefElec* is the annual electrical energy (GJ/year) used by a reference electric resistance water heater determined in accordance with the modelling procedure Published by the Scheme Administrator and accepted in a manner determined by the Scheme Administrator;
- *HPElec* is the annual electrical energy (GJ/year) used by the End-User Equipment, determined in accordance with the modelling procedure Published by the Scheme Administrator and accepted in a manner determined by the Scheme Administrator;
- *HPGas* is the annual gas energy (GJ/year) used by the End-User Equipment, determined in accordance with the modelling procedure Published by the Scheme Administrator, when modelled in the climate zone in which it is installed and accepted in a manner determined by the Scheme Administrator;
- *Capacity Factor* is:
  - 1, if *HPCap* <= *WHCap*; or
  - *WHCap / HPCap,* if *HPCap* > *WHCap*
- *HPCap* is the Total Thermal Capacity (kW) of the heat pump water heater(s) being installed, as defined in a manner determined by the Scheme Administrator;
- *Total Thermal Capacity* (kW) is the *Total Heat Pump Thermal Capacity* and the capacity of the booster(s) (if any);
- *WHCap* is the total rated capacity (kW) of the End-User Equipment being replaced;
- *Confidence Factor* is:
  - 42/*Peak Load*, limited to a maximum value of 1, for products with an *Individual Heat Pump Thermal Capacity* less than 10kW
  - 1, for products with an *Individual Heat Pump Thermal Capacity* greater than or equal to 10kW, and where the Implementation Date is until 31 December 2026
  - 0.7, for products with an *Individual Heat Pump Thermal Capacity* greater than or equal to 10kW, and where the Implementation Date is on or after 1 January 2027;
- *Individual Heat Pump Thermal Capacity* (kW) is equal to the *Total Heat Pump Thermal Capacity* (kW) / *Number of heat pump(s)*;
- *Total Heat Pump Thermal Capacity* (kW) is the sum of the individual heat pump thermal capacities, evaluated in a manner determined by the Scheme Administrator and Published by the Scheme Administrator;
- *Number of heat pump(s)* is the number of individual heat pumps combined within the system, and Published by the Scheme Administrator;
- *Peak Load* is the peak daily (winter) load in MJ/day, when modelled in the climate zone in which it is installed and accepted in a manner determined by the Scheme Administrator;
- *Lifetime* is the number of years that savings will be deemed as specified in Table F16.1.

Lifetime

Table F16.1

End-User Equipment type	Years
All	12

Activity Definition F17

Name of Activity

INSTALL ONE OR MORE AIR SOURCE HEAT PUMP WATER HEATER SYSTEMS

Eligibility Requirements

1. The New End-User Equipment must not be installed in a BCA Class 1 or 4 building.

Equipment Requirements

1. The New End-User Equipment must be an air source heat pump water heater as defined by AS/NZS 4234.
2. The New End-User Equipment must achieve minimum annual energy savings, when determined as an air sourced heat pump in accordance with the modelling procedure Published by the Scheme Administrator, of:
    a. 60% when modelled in AS/NZS 4234 climate zone HP3-AU.
    b. 60% when modelled in AS/NZS 4234 climate zone HP5-AU.
3. The New End-User Equipment must be certified to comply with AS/NZS 2712 if it has a storage volume less than or equal to 700L.

Implementation Requirements

1. The New End-User Equipment must be installed at a Site in accordance with the Equipment Requirements.
2. The activity must be performed or supervised by a suitably qualified licence holder in compliance with the relevant standards and legislation.
3. Where the New End-User Equipment is a split system with refrigerant flows between the evaporator and tank, the location requirements of AS/NZS 5149.3:2016 and manufacturer installation recommendations must be followed.
4. Where the Implementation Date is on or after 1 December 2025, and the New End-User Equipment has an Average Insulated Storage Volume of 700 litres or less:
    a. the End-User Equipment provided by the manufacturer(s) of the heat pump unit and tank must have a warranty against defects covering a period of at least five years from the date of installation, purchase or supply as applicable; and
    b. if the person giving the warranty against defects is not in Australia, the warranty must also include the name and contact details of who to contact in Australia in the event of a product failure.

Equipment Energy savings

$$Deemed\ Equipment\ Gas\ Savings = \sum_{systems} \left[\left(\frac{RefElec}{0.85}\right) - HPGas\right] \times Confidence\ Factor \times Lifetime/3.6$$

$$Deemed\ Equipment\ Electricity\ Savings = \sum_{systems} [-HPElec] \times Confidence\ Factor \times Lifetime/3.6$$

Where:

- *RefElec* is the annual electrical energy (GJ/year) used by a reference electric resistance water heater determined in accordance with the modelling procedure Published by the Scheme Administrator and accepted in a manner determined by the Scheme Administrator;
- *HPElec* is the annual electrical energy (GJ/year) used by the End-User Equipment, determined in accordance with the modelling procedure Published by the Scheme Administrator and accepted in a manner determined by the Scheme Administrator;
- *HPGas* is the annual gas energy (GJ/year) used by the End-User Equipment, determined in accordance with the modelling procedure Published by the Scheme Administrator and accepted in a manner determined by the Scheme Administrator;
- *Confidence Factor* is:
    - 42/*Peak Load*, limited to a maximum value of 1, for products with an *Individual Heat Pump Thermal Capacity* less than 10kW
    - 1, for products with an *Individual Heat Pump Thermal Capacity* greater than or equal to 10kW, and where the Implementation Date is until 31 December 2026
    - 0.7, for products with an *Individual Heat Pump Thermal Capacity* greater than or equal to 10kW, and where the Implementation Date is on or after 1 January 2027;

- *Individual Heat Pump Thermal Capacity* (kW) is equal to the *Total Heat Pump Thermal Capacity* (kW) / *Number of heat pump(s)*;
- *Total Heat Pump Thermal Capacity* (kW) is the sum of the individual heat pump thermal capacities, evaluated in a manner determined by the Scheme Administrator and Published by the Scheme Administrator;
- *Number of heat pump(s)* is the number of individual heat pumps combined within the system, and Published by the Scheme Administrator;
- *Peak Load* is the peak daily (winter) load in MJ/day, when modelled in the climate zone in which it is installed and accepted in a manner determined by the Scheme Administrator;
- *Lifetime* is the number of years that savings will be deemed as specified in Table F17.1.

Lifetime

Table F17.1

End-User Equipment	Years
All	12

Schedule G

(deleted)

Notice of Approval of
Peak Demand Reduction Scheme (Amendment No. 2) Rule 2026

under the

Electricity Supply Act 1995

I, PENELOPE SHARPE, Minister for Energy and Minister for Climate Change, pursuant to clause 137(4) of Schedule 4A of the *Electricity Supply Act 1995*, approve the *Peak Demand Reduction Scheme (Amendment No. 2) Rule 2026* (Amendment Rule) attached to this notice.

The Amendment Rule commences on 1 July 2026, and it amends the *Peak Demand Reduction Scheme Rule of 2022*.

This notice of approval of the Amendment Rule is provided pursuant to clause 137(5) of Schedule 4A of the *Electricity Supply Act 1995*.

A copy of the *Peak Demand Reduction Scheme Rule of 2022* may also be obtained through the website administered by the NSW Department of Climate Change, Energy, the Environment and Water at www.energy.nsw.gov.au/government-and-regulation/energy-security-safeguard/peak-demand-reduction-scheme.

Dated this 24 day of June 2026.

The Hon PENELOPE SHARPE MLC
Minister for Energy and Minister for Climate Change

Peak Demand Reduction Scheme (Amendment No. 2) Rule 2026

under the

ELECTRICITY SUPPLY ACT 1995

1. Name of Rule

This Rule is the *Peak Demand Reduction Scheme (Amendment No.2) Rule 2026*.

2. Operation of Rule

This Rule amends the *Peak Demand Reduction Scheme Rule of 2022* in the manner set out in Schedule 1.

3. Commencement

This Rule commences on 1 July 2026.

SCHEDULE 1

Peak Demand Reduction Scheme Rule of 2022

The Hon Penny Sharpe MLC
Minister for Energy and Minster for Climate Change

Simplified outline

The following is a simplified outline of this Rule:

- clauses 1-3 set out the commencement of the Rule, the objects of the Rule and status and operation of the Rule.
- clause 4 sets out the definition of Capacity Holder
- clause 5 sets out the definition of a Recognised Peak Activity
- clause 6 sets out
  - the conditions for the creation of Peak Reduction Certificates
  - general provisions for Equipment Requirements
  - how Peak Demand Reduction Capacity is apportioned over time
- clause 7 sets out Peak Demand Savings Method calculations
- clause 8 sets out Peak Demand Shifting Method calculations
- clause 9 sets out Peak Demand Response Method calculations
- clause 10 sets out the Definitions
- clause 11 sets out any transitional arrangements between different Rule versions
- Schedule A sets out classifications and calculation factor tables
- Schedule B has the following Reducing Demand Using Efficiency Activity Definitions
  - HVAC1, HVAC2, RF2, SYS2
- Schedule C has the following Store and Shift Capacity Activity Definitions
  - BESS1, BESS3, BESS4, BESS5
- Schedule D has the following Household Annual Demand Response Activity Definitions
  - BESS2, V2G1

1 Name and commencement

This Rule is the *Peak Demand Reduction Scheme (Amendment No.2) Rule 2026,* and its provisions commence as follows:

1.1 clauses 8.1.7 to 8.1.21 (including the notes related to those provisions), the entries in Table A6 for Activity Definitions BESS3, BESS4 and BESS5, and Activity Definitions BESS3, BESS4 and BESS5 in Schedule C—1 September 2026;

1.2 clauses 9.1.5 to 9.1.8, the entry in Table A6 for Activity Definition V2G1, and Activity Definition V2G1 in Schedule D—a date nominated by the Minister by notice published in the Gazette; and

1.3 all other provisions – 1 July 2026.

2 Objects of the Rule

The object of this Rule is to specify provisions for the calculation and creation of Peak Reduction Certificates in respect of any activity, or class of activities, prescribed by the Rule.

3 Status and Operation of the Rule

3.1 This Rule is a Peak Demand Reduction Scheme Rule made under Part 2 of Schedule 4A to the Act.

3.2 The terms used in this Rule have the meaning set out in clause 10, otherwise terms have the same meanings as in Part 2 of Schedule 4A to the Act.

4 Capacity Holder

4.1 The Capacity Holder of Peak Demand Reduction Capacity resulting from a Recognised Peak Activity is:

(a) the person specified to be the Capacity Holder in clause 7, 8 or 9 in relation to the relevant activity, unless the Capacity Holder has nominated another person, or

(b) the person nominated as the Capacity Holder by the person referred to in clause 4.1(a) but only if:

(i) the nominee consented to the nomination, and did not withdraw consent before the Implementation Date; and

(ii) the nomination and consent were in the form and manner approved by the Scheme Administrator.

4.2 Despite 4.1, a person is the Capacity Holder of Peak Demand Reduction Capacity resulting from a Recognised Peak Activity if:

(a) the activity constituted an Implementation under the Energy Savings Scheme;

(b) the Implementation Date of the Implementation as those terms are defined under the Scheme rules for the Energy Savings Scheme is:

(i) on or after 1 April 2022; and

(ii) on or before 29 September 2023.

(c) the person was the Energy Saver, as that term is defined under the Scheme rules for the Energy Savings Scheme, as at the Implementation Date under the Energy Savings Scheme; and

(d) the person is accredited in respect of the Recognised Peak Activity on or before the first anniversary of the commencement of this Rule.

5 Recognised Peak Activity

5.1 A Recognised Peak Activity is an activity that:

(a) provides capacity to reduce peak demand during the Peak Demand Reduction Period;

(b) occurs in a Site or Sites located within New South Wales and connected to the Electricity Network within New South Wales;

(c) is not unlawful in New South Wales on the Implementation Date; and

(d) has an Implementation Date on or after 1 April 2022.

5.2 Without limiting clause 5.1, a Recognised Peak Activity may:

(a) include 2 or more Activity Definitions or items of End-User Equipment;

(b) occur at a single Site or across multiple Sites, where each Implementation has its own Implementation Date; and

(c) be delivered by Implementations with the same or different Implementation Dates.

5.3 The replacement or removal of End-User Equipment only constitutes a Recognised Peak Activity if the End-User Equipment:

(a) is not refurbished, re-used or resold; and

(b) is disposed of in accordance with all applicable legal requirements (including, without limitation, any such requirement imposed by or under a law of a State, territory or the Commonwealth), and recycling evidence is obtained for any refrigerants being disposed of, such as a tax invoice or a recycling receipt, or any other evidence acceptable to the Scheme Administrator.

5.4 An activity is not a Recognised Peak Activity:

(a) if it results in the creation of Peak Demand Reduction Capacity by:

(i) for Peak Demand Savings Method and Peak Demand Shifting Method; reducing safety levels or reducing production or service levels

(ii) for Peak Demand Response Method; reducing safety levels or permanently reducing production or service levels;

(b) if it contributes to a net increase in greenhouse gas emissions;

(c) if it is undertaken to comply with any mandatory legal requirement imposed through an Instrument of any jurisdiction, including, but not limited to, compliance with National Construction Code and BASIX development requirements, except for “alterations” of a “BASIX development” as those terms are defined in Schedule 7 of the *Environmental Planning and Assessment Regulation 2021*;

(d) 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;

(e) if it is eligible to create tradeable certificates under the *Renewable Energy (Electricity) Act 2000 (Cth)*, except if the activity is the installation of a Battery Energy Storage System; or

(f) if it is an activity connected with Unsolicited Doorknocking.

6 Creation of Peak Reduction Certificates

6.1 An Accredited Certificate Provider may only create Peak Reduction Certificates for a Recognised Peak Activity if:

(a) the Accredited Certificate Provider:

(i) is accredited in respect of the activity on or before the Implementation Date for the activity; or

(ii) was accredited under the Energy Savings Scheme on or before the Implementation Date for the activity, in respect of a Recognised Energy Savings Activity, an implementation of which:

(A) was constituted by the same activity which constitutes the Implementation of the Recognised Peak Activity; and

(B) had an Implementation Date under the Energy Savings Scheme on or after 1 April 2022 and on or before 29 September 2023;

(b) the Accredited Certificate Provider is the Capacity Holder:

(i) for Activity Definition BESS2, as at the time of certificate creation, where that Capacity Holder was nominated within 90 days of Implementation Date and is the most recently nominated Capacity Holder, if more than one nomination is made;

(ii) where the Accredited Certificate Provider is the Capacity Holder in accordance with clause 4.2, on the Implementation Date under the Energy Savings Scheme, as that term is defined under the scheme rules for the Energy Savings Scheme; or

(iii) in any other case, on the Implementation Date.

(c) Peak Reduction Certificates have not already been created for that Peak Demand Reduction Capacity for the relevant Compliance Period;

(d) for the purpose of applying to register the creation of Peak Reduction Certificates for the Implementation, the Accredited Certificate Provider has provided the Scheme Administrator with the following required data and evidence:

(i) the Accredited Certificate Provider identifier;

(ii) the Recognised Peak Activity identifier;

(iii) the Address of the Site or Sites where the Implementation(s) took place;

(iv) any other identifiers required to identify the Site or Sites where the Implementation(s) took place;

(v) the National Metering Identifier(s) of the Site connection point(s) to the Electricity Network;

(vi) the Implementation Date of the Implementation(s);

(vii) the Network Loss Factor applied for each Implementation;

(viii) the Australian Business Number (if any) of the entity utilising the End-Use Service;

(ix) the cost to the person who pays for the goods or services that comprise the Implementation, excluding GST;

(x) the type of the End-Use Service for which Peak Demand Reduction Capacity was created in accordance with Table A1 of Schedule A to this Rule;

(xi) the Business Classification of the entity utilising the End-Use Service in accordance with Table A2 of Schedule A to this Rule;

(xii) the Method or sub-method and Activity Definition, where relevant, used to calculate the Peak Demand Reduction Capacity;

(xiii) the Peak Demand Reduction Capacity calculated under each Activity Definition that is used for the Implementation; and

(xiv) any other data providing evidence of Peak Demand Reduction Capacity from the Implementation as Published, from time to time, by the Scheme Administrator.

(e) for the purpose of section 106(7) of Schedule 4A to the Act, the Number of Certificates arising from a Recognised Peak Activity is determined in accordance with Equation 1.

6.2 Peak Reduction Certificates are calculated in Equation 1.

Equation 1
Number of Certificates = Peak Demand Reduction Capacity × *Network Loss Factor* × 10

Where:

- *Number of Certificates* is based on 1 Certificate = 0.1 kW of Peak Demand Reduction Capacity averaged over 1 hour
- *Peak Demand Reduction Capacity*, in kW, is calculated using Equation 2a, Equation 2b or Equation 2c
- *Network Loss Factor* is the value from Table A3 in Schedule A corresponding to the distribution network
- *10* is to convert from kW to 0.1 kW

6.3 In making an application to register the creation of Peak Reduction Certificates, an Accredited Certificate Provider may add together the Peak Demand Reduction Capacity arising from more than one Implementation, provided that:

(a) each Implementation used the same Activity Definition; and

(b) all Peak Demand Reduction Capacity added together in this way is taken to have been created and made available at the same time, for the purposes of clause 106(6)(b) of Schedule 4A of the Act.

Note: Clauses 6.8.1 and 6.8.2 of this Rule provides for when Peak Demand Reduction Capacity arising from an Implementation is taken to have been created and made available.

6.4 Where an application to register the creation of Peak Reduction Certificates is made, the Number of Certificates is to be rounded down to the nearest whole certificate.

6.5 For the purposes of clause 118(7) of Schedule 4A of the Act, Peak Reduction Certificates become active on the day that their creation is registered by the Scheme Administrator.

6.6 An Accredited Certificate Provider must not create Peak Reduction Certificates for an Implementation which involves:

(a) the installation of Banned End-User Equipment (including the replacement of End-User Equipment with Banned End-User Equipment); or

(b) Onboarding a Battery Energy Storage System in respect of a Banned VPP or a Banned Demand Response Aggregator.

6.7 Equipment Requirements for acceptable End-User Equipment

6.7.1 Equipment Requirements applying to End-User Equipment are specified in this Rule. The Scheme Administrator may Publish additional Equipment Requirements that apply to calculation methods of this Rule.

6.7.2 The Scheme Administrator may, on its own motion or on an application made under clause 6.7.3, accept Products as meeting the Equipment Requirements referred to in this clause by:

(a) Publishing a detailed list identifying each Product;

(b) Publishing a reference to a list from a certifying body, along with any restrictions on that list; and/or

(c) Publishing a requirement for labelling in accordance with a labelling scheme, along with any restrictions on that labelling; and/or

(d) Publishing a reference to a product register, as in force from time to time, published by a specified body, along with any restrictions on that product register - so long as the Scheme Administrator is satisfied that the requirements for listing a product on the product register are substantially the same as the relevant Equipment Requirements in this Rule, other than any additional Equipment Requirements published by the Scheme Administrator in accordance with clause 6.7.1.

6.7.3 Subject to clause 6.7.4, any Accredited Certificate Provider (or other persons as may be specified in a notice Published by the Scheme Administrator), may apply to the Scheme Administrator to have a Product accepted as meeting the Equipment Requirements, if they:

(a) apply in a form and manner required by the Scheme Administrator;

(b) pay any fee required by the Scheme Administrator in respect of the investigation and determination of the application on a cost recovery basis and including an allowance for:

(i) the recovery by the Scheme Administrator of its costs in establishing, operating and maintaining the systems and databases required in connection with the assessment, acceptance and rejection of applications made under this clause 6.7.3;

(ii) the exercise of the Scheme Administrator's powers under clauses 6.7.2 and 6.7.5; and

(iii) the payment and collection of fees under this clause 6.7.3(b);

(c) identify the Product; and

(d) provide evidence that the Product meets all the Equipment Requirements.

6.7.4 The Scheme Administrator may limit the number of applications that may be made during a period under clause 6.7.3, either in aggregate or by particular persons or classes of persons, by Publishing a notice that sets out that period and limit.

6.7.5 The Scheme Administrator may accept or reject an application made under clause 6.7.3.

6.7.6 Without limiting clause 6.7.5, the Scheme Administrator may reject an application made under clause 6.7.3 where the applicant has not provided additional information requested by the Scheme Administrator in support of that application within a timeframe Published by the Scheme Administrator.

6.7.7 The Scheme Administrator may, at any time, cease to accept a Product as meeting the Equipment Requirements.

6.8 Apportioning Peak Demand Reduction Capacity

6.8.1 For the purposes of clause 106(6)(b) of Schedule 4A of the Act, where the Lifetime of an Implementation is more than one year some of the Peak Demand Reduction Capacity arising from the Implementation is taken to have been created and made available in each Compliance Period which begins during the Lifetime of that Implementation.

6.8.2 Where Peak Demand Reduction Capacity arising from an Implementation is taken to have been created and made available in a Compliance Period under this clause 6.8, it is taken to have been created and made available on the first day of that Compliance Period.

Note:
HVAC2 Example
For example, an Implementation which uses Activity Definition HVAC2 has a Lifetime of 12 years. Twelve different compliance periods will begin during that Lifetime. The effect of clauses 6.8.1 and 6.8.2 is that some of the Peak Demand Reduction Capacity arising from the Implementation is taken to have been created and made available on the first day of each of those 12 Compliance Periods.
BESS2 Example
For example, an Implementation which uses Activity Definition BESS2 has a Lifetime of 6 years. Six different compliance periods will begin during that Lifetime. The effect of clauses 6.8.1 and 6.8.2 is that some of the Peak Demand Reduction Capacity arising from the Implementation is taken to have been created and made available on the first day of each of those 6 Compliance Periods.

6.8.3 Peak Demand Reduction Capacity is to be apportioned as equally as possible between all Compliance Periods which begin during the Lifetime of an Implementation, subject to clause 6.8.4.

6.8.4 Peak Demand Reduction Capacity is to be allocated such that:

(a) Each Compliance Period which begins during the Lifetime of an Implementation is allocated a whole number of Peak Reduction Certificates;

(b) Each Compliance Period which begins during the Lifetime of an Implementation is allocated a number of Peak Reduction Certificates that is within one certificate of the annual average number of certificates created over the Lifetime of the Implementation; and

(c) In the event that the whole number of Peak Reduction Certificates cannot be apportioned equally across all Compliance Periods which begin during the Lifetime of an Implementation, earlier Compliance Periods are allocated higher numbers of Peak Reduction Certificates than later Compliance Periods.

Note:

For example, an Implementation with a Lifetime of 10 years results in the creation and making available of 20.6kW of Peak Demand Reduction Capacity (equivalent to 206 Peak Reduction Certificates). The Peak Reduction Certificates are to be allocated such that 21 Certificates are allocated to the first six Compliance Periods of the Implementation and 20 Certificates are allocated to the last four Compliance Periods.

6.8.5 Where an Accredited Certificate Provider applies, under clause 6.3 of this Rule, to register the creation of Peak Reduction Certificates for more than one Implementation, references to "an Implementation" in clauses 6.8.3 and 6.8.4 of this Rule are to be read as references to all of the Implementations covered under that application.

6.9 Suspension of Implementations

6.9.1 **(**deleted)

6.9.2 Until such a time as is nominated by the Minister by notice published in the Gazette, no Accredited Certificate Provider may carry out, or create Peak Reduction Certificates from, an Implementation which:

(a) Satisfies all of the following:

(i) uses Activity Definition RF2;

(ii) involves the installation of End-User Equipment that is of Refrigerated Cabinet Product Classes 1-11 as defined in that Activity Definition; and

(iii) has an Implementation Date on or after 12 September 2025.

6.10 Ineligibility of Implementations using Activity Definition BESS1

6.10.1 Subject to clause 6.10.2, until such a time as is nominated by the Minister by notice published in the Gazette, no Accredited Certificate Provider may carry out, or create Peak Reduction Certificates from, an Implementation which:

(a) uses Activity Definition BESS1; and

(b) has an Implementation Date after 30 June 2025.

6.10.2 Clause 6.10.1 does not apply to an Implementation that:

(a) has an Implementation Date on or after 1 July 2026; and

(b) is either or both of the following:

(i) delivered at a Government Owned and Managed Site; and/or

(ii) delivered through an initiative that was an Exempt Energy Program as at the Implementation Date.

6.11 Monthly reporting of Implementations

6.11.1 For any Implementation under clause 7.1 that occurs in a calendar month after September 2025, the ACP must report the information specified in clause 6.1(d) to the Scheme Administrator before the end of the next calendar month.

6.11.2 For any Implementation under clause 8.1 that occurs in a calendar month after September 2025, the ACP must report the information specified in clauses 6.1(d) and 8.1.6 to the Scheme Administrator before the end of the 15th day of the next calendar month.

6.11.3 For any Implementation under clause 9.1 that occurs in a calendar month after September 2025, the ACP must report the information specified in clause 6.1(d) to the Scheme Administrator before the end of the 15th day of the next calendar month.

6.11.4 Information required to be reported under this clause 6.11 must be reported in a manner and form determined by the Scheme Administrator.

7 Peak Demand Savings Method

7.1 Reducing Demand Using Efficiency

Equation 2a
Peak Demand Reduction Capacity = Peak Demand Savings Capacity × Summer Peak Demand Reduction Duration × Lifetime

Where:

- *Peak Demand Savings Capacity*, in kW, is calculated using the relevant equations in Schedule B
- *Summer Peak Demand Reduction Duration* is 6 hours based on the Peak Demand Reduction Period of 2.30pm to 8.30pm AEST
- *Lifetime*, in years, is the default lifetime of the End-User Equipment as defined for the relevant Activity Definition in Schedule B

For Activity Definition HVAC1, SYS2:

7.1.1 The Peak Demand Reduction Capacity for an Implementation may only be calculated using Equation 2a provided that:

(a) the Site is a Residential Building or a Small Business Site, as evidenced to the satisfaction of the Scheme Administrator;

(b) the Eligibility Requirements for the relevant Activity Definition are met immediately prior to the Implementation Date;

(c) the completed Implementation satisfies all of the relevant Implementation Requirements;

(d) each item of installed End-User Equipment meets all the relevant Equipment Requirements;

(e) each item of End-User Equipment is installed at an Address that is connected to the Electricity Network in New South Wales; and

(f) for HVAC1, despite any other provision of this Rule when using Equation 1 to calculate the Number of Certificates for Peak Demand Reduction Capacity arising from an Implementation under Activity Definition HVAC1, the maximum number of Peak Demand Reduction Certificates able to be created under a single Implementation using one or more Multi-split systems is 500 for each Implementation.

7.1.2 The Implementation Date is the date that the End-User Equipment is installed.

7.1.3 The Capacity Holder is the Purchaser.

For Activity Definitions HVAC2, RF2:

7.1.4 The Peak Demand Reduction Capacity for an Implementation may only be calculated using Equation 2a, provided that:

(a) the Site is not a Residential Building Site, except where specified in the relevant Activity Definition in Schedule B;

(b) the Eligibility Requirements for the relevant Activity Definition are met immediately prior to the Implementation Date;

(c) the completed Implementation satisfies all the relevant Implementation Requirements;

(d) each item of installed End-User Equipment meets all the Equipment Requirements; and

(e) each item of End-User Equipment is installed at an Address that is connected to the Electricity Network in New South Wales.

7.1.5 The Implementation Date is the date that the End-User Equipment is installed.

7.1.6 The Capacity Holder is the Purchaser.

7.2 Measured Peak Demand Savings

(blank)

8 Peak Demand Shifting Method

8.1 Store and Shift Capacity

Equation 2b
Peak Demand Reduction Capacity = Peak Demand Shifting Capacity × Summer Peak Demand Reduction Duration × Lifetime

Where:

- *Peak Demand Shifting Capacity*, in kW, is calculated using the relevant equations in Schedule C
- *Summer Peak Demand Reduction Duration* is 6 hours based on the Peak Demand Reduction Period of 2.30pm to 8.30pm AEST
- *Lifetime*, in years, is the default lifetime of the End-User Equipment as defined for the relevant Activity Definition in Schedule C

For Activity Definition BESS1:

8.1.1 The Peak Demand Reduction Capacity for an Implementation may only be calculated using Equation 2b provided that:

(a) the Site is a Residential Building, Small Business Site or Government Owned and Managed Site, as evidenced to the satisfaction of the Scheme Administrator;

(b) the Eligibility Requirements for the relevant Activity Definition are met immediately prior to the Implementation Date;

(c) the completed Implementation satisfies all of the relevant Implementation Requirements;

(d) each item of installed End-User Equipment meets all the Equipment Requirements;

(e) each item of End-User Equipment is installed at an Address that is connected to the Electricity Network in New South Wales;

(f) the Accredited Certificate Provider has evidence satisfactory to the Scheme Administrator that the Purchaser has paid for the Implementation, assessment and other associated works carried out at the Site a Net Amount of at least $200 (excluding GST) for each item of End-User Equipment installed as part of an Implementation using Activity Definition BESS1; and

(g) the Implementation Date for the Implementation is on or after 1 November 2024.

Note:

Non-Cash Inducements and in-kind payments are not an acceptable form of payment for the purposes of clause 8.1.1(f). They do not contribute to the Net Amount paid. For example, the purchaser cannot provide

goods and services in exchange for goods and services that make up the Implementation for the purposes of clause 8.1.1(f).

8.1.2 An Accredited Certificate Provider must ensure that a payment made by a Purchaser which the Accredited Certificate Provider relies upon under clause 8.1.1(f) is not reimbursed.

8.1.3 Clause 8.1.1(f) does not apply to an Implementation delivered through a Low-income Energy Program or an initiative that was an Exempt Energy Program as at the Implementation Date.

8.1.4 The Implementation Date is the date that the installation of all End-User Equipment is completed.

8.1.5 The Capacity Holder is the Purchaser.

8.1.6 In addition to the data required under clause 6.1(d), an Accredited Certificate Provider may only create Peak Reduction Certificates for an Implementation under Activity Definition BESS1 if for the purpose of applying to register the creation of Peak Reduction Certificates for the Implementation, the Accredited Certificate Provider has provided the Scheme Administrator with:

(a) details of the installer, including the installer name and accreditation number;

(b) details of the Existing Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity;

(c) details of the New Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity; and

(d) details of the Total Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity.

For Activity Definition BESS3:

8.1.7 The Peak Demand Reduction Capacity for an Implementation may only be calculated using Equation 2b provided that:

a) the Site is an Apartment Building, and contains a minimum of four individual dwellings, as evidenced to the satisfaction of the Scheme Administrator;

b) the Eligibility Requirements for the relevant Activity Definition are met immediately prior to the Implementation Date;

c) the completed Implementation satisfies all of the relevant Implementation Requirements;

d) each item of installed End-User Equipment meets all the Equipment Requirements;

e) each item of End-User Equipment is installed at an Address that is connected to the Electricity Network in New South Wales;

f) the Accredited Certificate Provider has evidence satisfactory to the Scheme Administrator that the Purchaser has paid for the Implementation, assessment and other associated works carried out at the Site a Net Amount of at least $1,000 (excluding GST) for each item of End-User Equipment installed as part of an Implementation using Activity Definition BESS3; and

g) the Implementation Date for the Implementation is on or after 1 September 2026.

Note:

Non-Cash Inducements and in-kind payments are not an acceptable form of payment for the purposes of clause 8.1.7(f). They do not contribute to the Net Amount paid. For example, the purchaser cannot provide goods and services in exchange for goods and services that make up the Implementation for the purposes of clause 8.1.7(f).

8.1.8 An Accredited Certificate Provider must ensure that a payment made by a Purchaser which the Accredited Certificate Provider relies upon under clause 8.1.7(f) is not reimbursed.

8.1.9 Clause 8.1.7(f) does not apply to an Implementation delivered through a Low-income Energy Program or an initiative that was an Exempt Energy Program as at the Implementation Date.

8.1.10 The Implementation Date is the date that the installation of all End-User Equipment is completed.

8.1.11 The Capacity Holder is the Purchaser.

8.1.12 In addition to the data required under Clause 6.1(d), an Accredited Certificate Provider may only create Peak Reduction Certificates for an Implementation under Activity Definition BESS3 if for the purpose of applying to register the creation of Peak Reduction Certificates for the Implementation, the Accredited Certificate Provider has provided the Scheme Administrator with:

(a) details of the installer, including the installer name and accreditation number;

(b) details of the Existing Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity;

(c) details of the New Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity; and

(d) details of the Total Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity.

For Activity Definition BESS4:

8.1.13 The Peak Demand Reduction Capacity for an Implementation may only be calculated using Equation 2b provided that:

(a) the Site is not a Residential Building or Data Centre, as evidenced to the satisfaction of the Scheme Administrator;

(b) the Eligibility Requirements for the relevant Activity Definition are met immediately prior to the Implementation Date;

(c) the completed Implementation satisfies all of the relevant Implementation Requirements;

(d) each item of installed End-User Equipment meets all the Equipment Requirements;

(e) each item of End-User Equipment is installed at an Address that is connected to the Electricity Network in New South Wales;

(f) the Accredited Certificate Provider has evidence satisfactory to the Scheme Administrator that the Purchaser has paid for the Implementation, assessment and other associated works carried out at the Site a Net Amount of at least $5,000 (excluding GST) for each item of End-User Equipment installed as part of an Implementation using Activity Definition BESS4; and

(g) the Implementation Date for the Implementation is on or after 1 Septermber 2026.

Note:

Non-Cash Inducements and in-kind payments are not an acceptable form of payment for the purposes of clause 8.1.13(f). They do not contribute to the Net Amount paid. For example, the purchaser cannot provide goods and services in exchange for goods and services that make up the Implementation for the purposes of clause 8.1.13(f).

8.1.14 An Accredited Certificate Provider must ensure that a payment made by a Purchaser which the Accredited Certificate Provider relies upon under clause 8.1.13(f) is not reimbursed.

8.1.15 The Implementation Date is the date that the installation of all End-User Equipment is completed.

8.1.16 The Capacity Holder is the Purchaser.

8.1.17 In addition to the data required under Clause 6.1(d), an Accredited Certificate Provider may only create Peak Reduction Certificates for an Implementation under Activity Definition BESS4 if for the purpose of applying to register the creation of Peak Reduction Certificates for the Implementation, the Accredited Certificate Provider has provided the Scheme Administrator with:

(a) details of the installer, including the installer name and accreditation number.

(b) details of the Existing Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity;

(c) details of the New Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity; and

(d) details of the Total Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity.

For Activity Definition BESS5:

8.1.18 The Peak Demand Reduction Capacity for an Implementation may only be calculated using Equation 2b provided that:

a) the Site is not a Residential Building or Data Centre, as evidenced to the satisfaction of the Scheme Administrator;

b) the Eligibility Requirements for the relevant Activity Definition are met immediately prior to the Implementation Date;

c) the completed Implementation satisfies all of the relevant Implementation Requirements;

d) each item of installed End-User Equipment meets all the Equipment Requirements;

e) each item of End-User Equipment is installed at an Address that is connected to the Electricity Network in New South Wales; and

f) the Implementation Date for the Implementation is on or after 1 September 2026.

8.1.19 The Implementation Date is the date that the installation of all End-User Equipment is completed.

8.1.20 The Capacity Holder is the Purchaser.

8.1.21 In addition to the data required under clause 6.1(d), an Accredited Certificate Provider may only create Peak Reduction Certificates for an Implementation under Activity Definition

BESS5 if for the purpose of applying to register the creation of Peak Reduction Certificates for the Implementation, the Accredited Certificate Provider has provided the Scheme Administrator with:

(a) details of the installer, including the installer name and accreditation number.

(b) details of the Existing Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity;

(c) details of the New Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity; and

(d) details of the Total Solar Photovoltaic Capacity including solar photovoltaic system capacity and inverter capacity.

9 Peak Demand Response Method

9.1 Household Annual Demand Response

Equation 2c
Peak Demand Reduction Capacity = Peak Demand Response Capacity × Summer Peak Demand Reduction Duration × Lifetime

Where:

- *Peak Demand Response Capacity*, in kW, is calculated using the relevant equations in Schedule D
- *Summer Peak Demand Reduction Duration* is 6 hours for BESS2.
- *Lifetime*, in years, is the default lifetime of the demand response contract as defined for the relevant Activity Definition in Schedule D

For Activity Definition BESS2:

9.1.1 The Peak Demand Reduction Capacity for an Implementation may only be calculated using Equation 2c provided that:

(a) the Site is a BCA Class 1 Building or Small Business Site, as evidenced to the satisfaction of the Scheme Administrator;

(b) the Eligibility Requirements for the relevant Activity Definition are met immediately prior to the Implementation Date;

(c) the completed Implementation satisfies all of the relevant Implementation Requirements;

(d) each item of End-User Equipment meets all the Equipment Requirements;

(e) each item of End-User Equipment is installed at an Address that is connected to the Electricity Network in New South Wales;

(f) a contract between the Capacity Holder, who is the account holder of the electricity account for the National Metering Identifier(s), and the Demand Response Aggregator to provide demand response capacity for at least 12 months is signed by the account holder of the electricity account at the Site; and

(g) the Implementation Date for the Implementation is on or after 1 July 2026.

9.1.2 The Implementation Date is the date that the Capacity Holder's Battery Energy Storage System is Onboarded with the Demand Response Aggregator.

9.1.3 The Capacity Holder is the account holder of the electricity account for the National Metering Identifier(s) and the person who has signed the contract with the Demand Response Aggregator to provide demand response capacity for at least 12 months.

9.1.4 Where Peak Reduction Certificates have been created for an Implementation at the National Metering Identifier(s) of an Activity Definition in Schedule D, no Peak Reduction Certificates can be created for the same activity in any subsequent Compliance Periods at that National Metering Identifier(s).

For Activity Definition V2G1:

9.1.5 The Peak Demand Reduction Capacity for an Implementation may only be calculated using Equation 2c provided that:

(a) the Site is a Residential Building, as evidenced to the satisfaction of the Scheme Administrator;

(b) the completed Implementation satisfies all of the relevant Implementation Requirements;

(c) each item of End-User Equipment meets all the Equipment Requirements;

(d) each item of End-User Equipment is installed at an Address that is connected to the Electricity Network in New South Wales;

(e) a contract between the Capacity Holder, who is the account holder of the electricity account for the National Metering Identifier(s), and the Demand Response Aggregator to provide demand response capacity for at least 12 months is signed by the account holder of the electricity account at the Site; and

(f) the Implementation Date for the Implementation is, in accordance with clause 1.2, on or after the commencement date nominated by the Minister by notice published in the Gazette.

9.1.6 The Implementation Date is the date that the Capacity Holder's Battery Electric Vehicle is Onboarded with the Demand Response Aggregator.

9.1.7 The Capacity Holder is the account holder of the electricity account for the National Metering Identifier(s) and the person who has signed the contract with the Demand Response Aggregator to provide demand response capacity for at least 12 months.

9.1.8 Where Peak Reduction Certificates have been created for an Implementation at the National Metering Identifier(s) of an Activity Definition in Schedule D, no Peak Reduction Certificates can be created for the same activity in any subsequent Compliance Periods at that National Metering Identifier(s).

10 Definitions and Interpretation

10.1 In this Rule:

"Accredited Certificate Provider" has the same meaning it has in the Act.

"Act" means the *Electricity Supply Act 1995*.

"Activity Definition" means an activity as specified in a Schedule to this Rule.

"Address" means a street address within New South Wales, in a format approved by the Scheme Administrator.

"**Air Conditioner**" has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019.*

"Apartment Building" means a building or part of a building classified as Class 2 under the *Building Code of Australia* (within the meaning of the *Environmental Planning and Assessment Act 1979*) and includes any Non-Habitable Building on the same site.

"AS" means an Australian Standard as published by SAI Global.

"**AS/NZS"** means an Australian/New Zealand Standard as published by SAI Global.

"Ban Notice" means a notice Published by the Scheme Administrator specifying a Demand Response Aggregator, End-User Equipment, or a virtual power plant to be banned for the purposes of this Rule. Such a notice may be limited by reference to:

(a) a specified period of time;
(b) specified calculation methods or Activity Definitions; and/or
(c) other matters as the Scheme Administrator sees fit.

"Banned Demand Response Aggregator" means a Demand Response Aggregator which is the subject of a Ban Notice.

"Banned End-User Equipment" means End-User Equipment which is the subject of a Ban Notice.

"Banned VPP" means a virtual power plant which is the subject of a Ban Notice.

"BASIX" means the NSW Building Sustainability Index established under the *Environmental Planning and Assessment Regulation 2021*.

"Battery Energy Storage System" means one or more batteries, and other related equipment, which:

(a) collectively, constitute a system;
(b) are installed behind a single National Metering Identifier; and
(c) are installed on the same day (except the inverter, which may form part of the system despite being installed on an earlier day).

For the avoidance of doubt a pre-assembled battery system and a pre-assembled integrated battery energy storage system are both individually considered batteries and may be combined to form a Battery Energy Storage System.

"Battery Electric Vehicle" has the same meaning as in the *Electric Vehicles (Revenue Arrangements) Act 2021*.

"**Battery Inverter Output"** means the maximum rated power output of the inverter that converts direct current electricity to alternating current electricity in a Battery Energy Storage System.

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

"BCA Climate Zone" means a climate zone under the BCA (as in force and updated from time to time).

"Behind the Meter" means End-User Equipment that is installed and supplies energy to a Site with an associated National Metering Identifier (NMI).

"Capacity Holder" means the person as defined in clause 4.1 of this Rule.

"Cooling Capacity" has the same meaning as "Total Cooling Capacity" in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"Data Centre" has the same meaning as in the *Standard Instrument (Local Environmental Plans) Order 2006.*

"Demand Response Aggregator" means:

(a) a person that aggregates demand response capacity and is either:

(i) a Market Participant (as defined in the *National Electricity Rules*), or

(ii) a Network Service Provider (as defined in the *National Electricity Rules*), or

(b) a person who has been engaged in a contract with a Market Participant or Network Service Provider to aggregate demand response capacity (and related activities) on their behalf.

"Ducted" has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"Electricity Network" means all electricity Transmission Systems and Distribution Systems.

"Electric Vehicle Supply Equipment" means the physical equipment providing dedicated functions to provide power to the EV and could have one or more charging plug or port.

"Eligibility Requirements" means the eligibility requirements specified in an Activity Definition in the Schedules to this Rule.

"End-Use Service" means the primary service provided by End-User Equipment, such services being as detailed in Table A1 of Schedule A to this Rule.

"End-User Equipment" means electricity consuming equipment, processes, or systems, including the equipment directly consuming electricity, and other equipment that causes, controls or influences the consumption of electricity.

"Energy Star Rating" means an Energy Star Rating as defined in the relevant AS/NZS.

"Equipment Requirements" means the equipment requirements as specified in a Schedule in this Rule or as Published from time to time by the Scheme Administrator in accordance with clause 6.7.1 of this Rule.

"ESS Rule" means the *Energy Savings Scheme Rule of 2009.*

"Exempt Energy Program" means a program approved by the Minister, and notified to the Scheme Administrator, as being exempt from specified clauses of this Rule.

"Existing Solar Photovoltaic Capacity" means the existing solar photovoltaic system operating at the Site.

"GEMS Registry" has the same meaning as in the *Greenhouse and Energy Minimum Standards Act 2012* (Cth).

"Government Owned and Managed Site" means a Site that is, as at the Implementation Date, owned and directly controlled by:

(a) the Australian Government;
(b) the NSW Government; or
(c) a Local Council.

"GST" has the same meaning as in the *A New Tax System (Goods and Services Tax) Act 1999* (Cth).

"Implementation" means the delivery of a Recognised Peak Activity at a Site.

"Implementation Date" is defined for each Recognised Peak Activity in clauses 7, 8 and 9 of this Rule.

"Implementation Requirements" means the implementation requirements specified in an Activity Definition in the Schedules to this Rule.

"Instrument" has the same meaning as in the *Interpretation Act 1987*.

"kW" means a kilowatt of electrical power.

"kWh" means a kilowatt-hour of energy.

"Large Business Site" means a Site that is entirely occupied by one business with an ABN; and where the business, as a consumer of electricity at the Site is a Large Customer.

"Large Customer" has the same meaning as it has in the *National Energy Retail Law (NSW)*.

"Licensed" means a person that holds a current licence that covers activities in New South Wales for the duration of the Implementation.

"Lifetime" means the time period over which Peak Demand Reduction Capacity arising from an Implementation is deemed to be created and made available, as specified in the relevant Activity Definition in Schedule B, C and D.

"Life Support Equipment" has the same meaning as in the *National Energy Retail Rules* under the *National Energy Retail Law (NSW)*.

"Low-income Energy Program" means a program approved by the Minister and notified to the Scheme Administrator as being exempt from specified clauses of this Rule.

"**Multi-split system**" has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"National Metering Identifier" is the connection point defined in the *National Electricity Rules.*

"Net Amount" means the amount of money paid by a Purchaser, minus any money paid to the Purchaser and the value of any Non-Cash Inducements given to the Purchaser in connection with an Implementation.

"Network Service Provider" has the same meaning as in the *National Electricity (NSW) Law*.

"New End-User Equipment" means End-User Equipment where no End-User Equipment of the same type, function, output or service was previously in its place (but does not include additional components installed in the course of modifying existing End-User Equipment).

"New Solar Photovoltaic Capacity" means the additional photovoltaic generation capacity added to an Existing Solar Photovoltaic Capacity, or the capacity of a newly installed solar photovoltaic system where no system previously existed.

"Nominal Battery Capacity", in respect of a Battery Energy Storage System, means:

(a) for a Battery Energy Storage System with only one battery, the nominal battery capacity for that battery, as recorded on the approved product list specified by the Scheme Administrator; and

(b) for a Battery Energy Storage System with more than one battery, the sum of the nominal battery capacity for each battery, as recorded on the approved product list specified by the Scheme Administrator.

"Non-Cash Inducement" includes a gift card, gift voucher, credit note or other like inducement, and also includes goods or services that are not reasonably necessary for or incidental to an Implementation.

Note:

For example, where an Implementation consists of installing a new Air conditioner:

- providing the Air conditioner itself would not be a Non-Cash Inducement (because it is reasonably necessary for the Implementation), but
- providing a television would be a Non-Cash Inducement.

"Non-Habitable Building" means a Class 10a or Class 10b building under the *Building Code of Australia* (within the meaning of the *Environmental Planning and Assessment Act 1979).*

"Non-Network Option" has the same meaning as it has in the National Electricity Rules under the *National Electricity (NSW) Law*.

"Number of Certificates" means the number of Peak Reduction Certificates permitted to be created by an Accredited Certificate Provider for Peak Demand Reduction Capacity calculated in accordance with the clauses and methods in this Rule.

"Onboarded" means that the End-User Equipment has been demonstrated to respond to remotely provided commands from the Demand Response Aggregator.

"Peak Demand Reduction Capacity" means how much a Recognised Peak Activity can reduce electricity demand during the peak demand reduction period, measured in average kilowatts per hour, calculated using the relevant equations in this Rule.

"Peak Reduction Certificate" means a certificate created under clause 106 of the Schedule 4A of the Act.

"Prescribed Transmission Services" has the same meaning as in the National Electricity Rules under the *National Electricity (NSW) Law*.

"Product" means a class of End-User Equipment identified uniquely by its manufacturer identifier and manufacturer's model identifier and, in some cases, model year or year of manufacture.

"Publish" means to make publicly available in writing, for example on a website or online system maintained by the Scheme Administrator or another NSW Government agency.

"Purchaser" means the person who purchases or leases the goods or services that enable the relevant Peak Demand Reduction Capacity to be made; except where:

(a) the person is an Accredited Certificate Provider and is not the owner, occupier or operator of the Site; or

(b) the person purchases or leases the goods or services for the purpose of reselling the End-User Equipment, unless the resale will be an inclusion in a contract for the sale of land, or in a strata scheme, the sale of a lot.

"Recognised Peak Activity" is defined in clause 5 of this Rule.

"Regulations" means regulations made under Part 2 of Schedule 4A to the Act.

"Residential Building" means a building or part of a building classified as Class 1, 2 or 4 under the *Building Code of Australia* (within the meaning of the *Environmental Planning and Assessment Act 1979*, and includes any Non-Habitable Building on the same site.

"Scheme Administrator" has the same meaning as in the Act.

"Single-split system" has the same meaning as in the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*.

"Site" means the location of the End-User Equipment included in a Recognised Peak Activity, as defined by:

(a) an Address; or

(b) a unique identifier, as specified for the relevant Implementation that identifies the affected End-User Equipment.

"Small Business Site" means a Site:

(a) that is entirely occupied by one business, with ABN recorded to meet the requirements of clause 6.1(d)(viii); and

(b) where the business, as a consumer of electricity at the Site:

(i) is a Small Customer (and, for the avoidance of doubt, has not aggregated its load at the Site with consumption at other Sites for the purposes of being treated as a Large Customer under its electricity purchase arrangements); or

(ii) is a customer of an Exempt Seller, and has an annual electricity consumption below the Upper Consumption Threshold for electricity, specified in the *National Energy Retail Law (NSW)*.

"**Small Customer**" has the same meaning as in the *National Energy Retail Law (NSW)*.

"**Standard Control Service**" has the same meaning as in the National Electricity Rules under the *National Electricity (NSW) Law*.

"Unsolicited Doorknocking" means the visiting of a person's business premises or residential premises for the purpose of contracting for, marketing of, or promoting, an activity that would otherwise be a Recognised Peak Activity if not for clause 5.4(f), without that person having provided express prior consent to being visited for those purposes.

"**Upper Consumption Threshold**" has the same meaning as in the *National Energy Retail Law (NSW)*.

"Usable Battery Capacity", in respect of a Battery Energy Storage System, means 90% of the Nominal Battery Capacity.

"Voluntarily Scheduled Resource" has the same meaning as it has in the National Electricity Rules under the *National Electricity (NSW) Law*.

10.2 In this Rule:

(a) subject to clauses 5.1(c), any reference to an "AS" standard or "AS/NZS" standard is taken to be a reference to that standard as in force from time to time; and

(b) any reference to an Act or Instrument (including Australian Commonwealth and New Zealand legislation) is taken to be a reference to that Act or Instrument as in force from time to time.

11 Transitional arrangements

Saving of Implementations using Activity Definition WH1 which occurred before the commencement of the *Peak Demand Reduction Scheme Rule of 2022*

11.1 (deleted)

11.2 (deleted)

General transitional arrangement arising from the *Peak Demand Reduction Scheme (Amendment No. 1) Rule 2024*

11.3 An Accredited Certificate Provider must calculate Peak Demand Reduction Capacity from an Implementation in accordance with the Rule as in force immediately before the commencement of the *Peak Demand Reduction Scheme (Amendment No. 1) Rule 2024* where the Implementation Date of the relevant Implementation is before 1 August 2024.

General transitional arrangement arising from the *Peak Demand Reduction Scheme (Amendment No. 2) Rule 2024*

11.4 An Accredited Certificate Provider must calculate Peak Demand Reduction Capacity from an Implementation in accordance with the Rule as in force immediately before the commencement of the *Peak Demand Reduction Scheme (Amendment No. 2) Rule 2024* where the Implementation Date of the relevant Implementation is on or after 1 August 2024 and before 13 September 2024.

General transitional arrangement arising from the commencement of clause 6.1(d)(v) of the *Peak Demand Reduction Scheme (Amendment No.2) Rule 2024*

11.5 Clause 6.1(d)(v) does not apply in respect of any Implementation with an Implementation Date before the commencement of clause 6.1(d)(v).

Transitional arrangement arising from the commencement of Implementation Requirement 4 of Activity Definition BESS1

11.6 (deleted)

11.7 (deleted)

Saving of past Implementations using Activity Definition WH1

11.8 An Accredited Certificate Provider must calculate Peak Demand Reduction Capacity from an Implementation in accordance with the Rule as in force immediately before the commencement of the *Peak Demand Reduction Scheme (Amendment No. 3) Rule 2024*, where the Implementation:

(a) used the WH1 Activity Definition; and
(b) had an Implementation Date on or before 19 December 2024.

Saving of past Implementations using Activity Definition BESS1

11.9 An Accredited Certificate Provider must calculate Peak Demand Reduction Capacity from an Implementation in accordance with the Rule as in force immediately before the commencement of the *Peak Demand Reduction Scheme (Amendment No. 1) Rule 2025*, where the Implementation:

(a) used the BESS1 Activity Definition; and
(b) had an Implementation Date on or before 30 June 2025.

Saving of past Implementations using Activity Definition BESS2

11.10 An Accredited Certificate Provider may calculate Peak Demand Reduction Capacity from an Implementation in accordance with either the *Peak Demand Reduction Scheme (Amendment No. 1) Rule 2025*, or with the Rule as in force immediately before the commencement of the *Peak Demand Reduction Scheme (Amendment No. 1) Rule 2025,* where the Implementation:

(a) used the BESS2 Activity Definition; and
(b) had an Implementation Date (as defined in the corresponding Rule) on or before 30 June 2025.

General transitional arrangement arising from the *Peak Demand Reduction Scheme (Amendment No. 2) Rule 2025*

11.11 Where the Implementation Date of an Implementation is before 12 September 2025, an Accredited Certificate Provider must calculate Peak Demand Reduction Capacity from that Implementation in accordance with this Rule as in force immediately after the commencement of the *Peak Demand Reduction Scheme (Amendment No. 1) Rule 2025*.

General transitional arrangement arising from the *Peak Demand Reduction Scheme (Amendment No. 2) Rule 2026*

11.12 Where the Implementation Date of an Implementation is before 1 July 2026, an Accredited Certificate Provider must calculate Peak Demand Reduction Capacity from that Implementation in accordance with this Rule as in force immediately after the commencement of the *Peak Demand Reduction Scheme (Amendment No. 1) Rule 2026*.

Schedule A Classifications and calculation factor tables

Table A1: End-Use Services

End-Use Services
Air heating and cooling
Air handling, fans, ventilation
Water heating
Water/liquid pumping
Refrigeration and freezing
Lighting
Cooking
Home entertainment
Computers, office equipment
Communications
Cleaning, washing
Process heat
Air compression
Process drives
Milling, mixing, grinding
Transport
People movement, lifts, escalators
Materials handling, conveying
Other machines
Electricity supply
Unknown
Other End-Use Services as Published by the Scheme Administrator

Table A2: Business Classifications

Business Classification
A Agriculture, Forestry and Fishing
B Mining
C Manufacturing
D Electricity, Gas, Water and Waste Services
E Construction
F Wholesale Trade
G Retail Trade
H Accommodation and Food Services
I Transport, Postal and Warehousing
J Information Media and Telecommunications
K Financial and Insurance Services
L Rental, Hiring and Real Estate Services
M Professional, Scientific and Technical Services
N Administrative and Support Services
O Public Administration and Safety
P Education and Training
Q Health Care and Social Assistance

Business Classification
R Arts and Recreation Services
S Other Services
Residential
Unknown

Table A3: Network Loss Factors

Distribution Network Area	Network Loss Factor
Ausgrid	1.04
Endeavour	1.05
Essential	1.05

Table A4: Baseline Peak Adjustment and Peak Adjustment Factors for Demand Savings activities

Activity Definition	Peak Adjustment Factor	Baseline Peak Adjustment Factor
SYS2	0.41	0.41

Table A5: Temperature Factor based on BCA Climate Zone

BCA Climate Zone	Temperature Factor
2	0.48
4	1.03
5	0.55
6	1.04
7	0.92
8	0.55

Table A6: Firmness Factor

Activity	Firmness Factor
BESS1	1
BESS2	0.8
BESS3	1
BESS4	1
BESS5	1
HVAC1	1
HVAC2	1
RF2	1
SYS2	1
V2G1	1

Schedule B Reducing Demand Using Efficiency

Activity Definition HVAC1

Name of Activity

Install a new high efficiency Air Conditioner or Replace an existing Air Conditioner with a high efficiency Air Conditioner

Eligibility Requirements

1. This activity must be an installation of a new high efficiency Air Conditioner or a replacement of an existing Air Conditioner (whether operational or not) with a high efficiency Air Conditioner.

Equipment Requirements

1. The New End-User Equipment or replacement End-User Equipment must be recorded in the GEMS Registry under Product Classes 5-12, 18-21 as complying with the *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019.*
2. If the New End-User Equipment or replacement End-User Equipment has a Cooling Capacity recorded in the GEMS Registry:
    a. It must have a Residential TCSPF_mixed value, as recorded in the GEMS Registry, equal to or greater than the Minimum Residential TCSPF_mixed value for the same Product Class in Table HVAC1.2; or
    b. If it does not have a Residential TCSPF_mixed value recorded in the GEMS Registry, then it must have a Rated AEER in the GEMS Registry equal to or greater than the Minimum AEER for the same Product Class in Table HVAC1.2.
3. If the New End-User Equipment or replacement End-User Equipment is an eligible system for Product Classes 5-12, the model number(s) must match the model number(s) recorded in the GEMS registry.
4. If the New End-User Equipment or replacement End-User Equipment is an eligible outdoor Multi-split system as recorded in the GEMS Registry for Product Classes 18-21:
    a. the outdoor unit part of the GEMS registered model number must match the model number of the outdoor unit being installed,
    b. the manufacturer brand must be the same for all indoor and outdoor End-User Equipment, and
    c. the unit(s) must be an approved combination by the manufacturer.

Implementation Requirements

1. Any existing End-User Equipment must be removed.
2. The New End-User Equipment or replacement End-User Equipment must be designed and installed in accordance with AS/NZS 5141:2018.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably Licensed person in compliance with the relevant standards and legislation.

Activity Peak Demand Savings Capacity

Peak Demand Savings Capacity = (Baseline Input Power × Baseline Peak Adjustment Factor – Input Power × Peak Adjustment Factor) × Firmness Factor

Where:

- *Baseline Input Power, in kW*, is calculated using Equation HVAC1.1
- *Baseline Peak Adjustment Factor* is calculated using Equation HVAC1.2
- *Input Power, in kW,* for Product Classes 5-12 is the rated cooling input power at 35°C as recorded in the GEMS Registry
- *Input Power*, *in kW*, for Product Classes 18-21 is the rated cooling input power at 35°C as recorded in the GEMS Registry multiplied by the lesser of:
    - the sum of the indoor units' Cooling Capacities at 35°C as provided in manufacturer documentation, divided by the outdoor unit's Cooling Capacity at 35°C of the New End User Equipment or replacement End-User Equipment, as recorded in the GEMS Registry; or
    - 1
- *Peak Adjustment Factor* is equal to the Baseline Peak Adjustment Factor
- *Firmness Factor,* as a fraction, is the likelihood that the capacity holder will reduce demand from the End-User Equipment during a system peak event as defined in Table A6.

Equation HVAC1.1
Baseline Input Power = Rated Cooling Capacity / Baseline AEER

Where:

- *Rated Cooling Capacity* for Product Classes 5-12 is the Rated Cooling Capacity at 35°C as recorded in the GEMS Registry
- *Rated Cooling Capacity*, in kW, for Product Classes 18-21 (Multi-split systems) is the lesser of:
  - the sum of the indoor units' Cooling Capacities at 35°C as provided in manufacturer documentation; or
  - the outdoor unit's Cooling Capacity at 35°C of the New End-User Equipment or replacement End-User Equipment as recorded in the GEMS Registry.
- *Baseline AEER is* specified in Table HVAC1.1 according to the Product Class and application type (new or replacement).

Equation HVAC1.2

Baseline Peak Adjustment Factor = Temperature Factor × Usage Factor

Where:

- *Temperature Factor* is defined in Table A5 based on the BCA Climate Zone of the Implementation
- *Usage Factor* is 0.72

Table HVAC1.1 – Baseline AEER for a new or replacement air conditioner

Product Type	Product Class	New Install Baseline Cooling AEER	Replacement Baseline Cooling AEER
Air-to-air: Single-split Non-ducted and Multi-split	Class 8, 18	3.66	3.33
Air-to-air: Single-split Non-ducted and Multi-split	Class 9, 19	3.22	2.93
Air-to-air: Single-split Ducted and Unitary Ducted or Non-ducted	Class 5, 6, 10, 11, 20	3.1	2.8
Air-to-air: Single-split Ducted or Non-ducted, Multi-split, and Unitary Ducted or Non-Ducted	Class 7, 12, 21	2.9	2.75

Table HVAC1.2 – Residential Minimum TCSPF or Rated AEER* Requirement

Product Type	Product Class	Minimum Residential TCSPF_mixed	Minimum Rated AEER*
Air-to-air: Single-split Non-ducted and Multi-split	Class 8, 18	5.5	4.3
Air-to-air: Single-split Non-ducted and Multi-split	Class 9, 19	4.5	3.6
Air-air: Single-split Ducted or Non-Ducted, Multi-split, and Unitary Ducted or Non-Ducted	Class 10, 11, 20	4.0	3.5
Air-to-air: Single-split Ducted or Non-ducted, Multi-split, and Unitary Ducted or Non-Ducted	Class 5, 6, 7, 12, 21	3.0	3.3

*Only to be used if there is no TCSPF_mixed data recorded in the GEMS Registry.

Lifetime

Lifetime = 12 years.

Activity Definition HVAC2

Name of Activity

Install a new high efficiency Air Conditioner or replace an existing Air Conditioner with a high efficiency Air Conditioner

Eligibility Requirements

1. This activity must be an installation of a new high efficiency air conditioner or a replacement of an existing air conditioner (whether operational or not) with a high efficiency air conditioner that is greater than or equal to 30 kW Cooling Capacity.
2. The New End-User Equipment or replacement End-User Equipment must be installed in a Large Business Site and cannot be installed in a Residential Building or Small Business Site, unless the activity is the replacement of an existing air conditioner in a centralised system or in the common areas of a Class 2 building.

Equipment Requirements

1. The New End-User Equipment or replacement End-User Equipment must be recorded in the GEMS Registry under Product Classes 5-12, 18-21, 24-25 or 27 listed in the GEMS Registry as complying with either:
    a. *Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019*;or
    b. Greenhouse and Energy Minimum Standards (Air Conditioners above 65kW) Determination) 2022.
2. If the New End-User Equipment or replacement End-User Equipment has a Cooling Capacity recorded in the GEMS Registry:
    a. It must have a Commercial TCSPF_mixed value, as recorded in the GEMS Registry, equal to or greater than the Minimum Commercial TCSPF_mixed value for the same Product Class in Table HVAC2.2; or
    b. If it does not have a Commercial TCSPF_mixed value recorded in the GEMS Registry, then it must have a Rated AEER in the GEMS Registry equal to or greater than the Minimum AEER for the same Product Class in Table HVAC2.2.
3. If the New End-User Equipment or replacement End-User Equipment is an eligible system for Product Classes 5-12 and 24-25, the model number(s) must match the model number(s) recorded in the GEMS registry.
4. If the New End-User Equipment or replacement End-User Equipment is an eligible outdoor Multi-split system under the GEMS Registry for Product Classes 18-21 and 27:
    a. the outdoor unit part of the GEMS registered model number must match the model number of the outdoor unit being installed,
    b. the manufacturer brand must be the same for all indoor and outdoor End-User Equipment, and
    c. the unit(s) must be an approved combination by the manufacturer.

Implementation Requirements

1. Any existing End-User Equipment must be removed.
2. The New End-User Equipment or replacement End-User Equipment must be installed.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably Licensed person in compliance with the relevant standards and legislation.

Activity Peak Demand Savings Capacity

Peak Demand Savings Capacity = (Baseline Input Power × Baseline Peak Adjustment Factor – Input Power × Peak Adjustment Factor) × Firmness Factor

Where:

- *Baseline Input Power,* in kW, is calculated using Equation HVAC2.1
- *Baseline Peak Adjustment Factor* is calculated using Equation HVAC2.2
- *Input Power,* in kW, for Product Classes 5-12 and 24-25 is the rated cooling input power at 35°C as recorded in the GEMS Registry
- *Input Power*, in kW, for Product Classes 18-21 and 27 is the rated cooling input power at 35°C as recorded in the GEMS Registry multiplied by the lesser of:
    - the sum of the indoor units' Cooling Capacities at 35°C as provided in manufacturer documentation, divided by the outdoor unit's Cooling Capacity at 35°C of the New End User Equipment or replacement End-User Equipment as recorded in the GEMS Registry; or
    - 1.
- *Peak Adjustment Factor* is equal to the Baseline Peak Adjustment Factor
- *Firmness Factor,* as a fraction, is the likelihood that capacity will be available during a system peak event as defined in Table A6.

Equation HVAC2.1
Baseline Input Power = Rated Cooling Capacity / Baseline AEER

Where:

- *Rated Cooling Capacity,* in kW*,* for Product Classes 5-12 and 24-25 is the rated cooling capacity at 35°C as recorded in the GEMS Registry
- *Rated Cooling Capacity*, in kW, for Product Classes 18-21 and 27, is the lesser of:
  - the sum of the indoor units' Cooling Capacities at 35°C as provided in manufacturer documentation; or
  - the outdoor unit's Cooling Capacity at 35°C of the New End-User Equipment or replacement End-User Equipment as recorded in the GEMS Registry;
- *Baseline AEER is* specified in Table HVAC2.1 according to the Product Class and application type (new or replacement).

Equation HVAC2.2
Baseline Peak Adjustment Factor = Temperature Factor × Usage Factor

Where:

- *Temperature Factor* is defined in Table A5 based on the BCA Climate Zone of the Implementation
- *Usage Factor* is 0.6

Table HVAC2.1 – Baseline AEER for a new or replacement air conditioner

Product Type	Product Class	Baseline Cooling AEER	Replacement Baseline Cooling AEER
Air-to-air: Single-split Non-ducted and Multi-split	Class 8, 18	3.66	3.33
Air-to-air: Single-split Non-ducted and Multi-split	Class 9, 19	3.22	2.93
Air-to-air: Single-split Ducted or Non-Ducted, Multi-split, and Unitary Ducted or Non-Ducted	Class 5, 6, 10, 11, 20	3.1	2.8
Air-to-air: Single-split Ducted or Non-Ducted, Multi-split, and Unitary Ducted or Non-Ducted	Class 7, 12, 21, 24, 25, 27	2.9	2.75

Table HVAC2.2 – Commercial Minimum TCSPF or Rated AEER* Requirement

Product Type	Product Class	Minimum Commercial TCSPF_mixed	Minimum Rated AEER*
Air-to-air: Single-split Non-ducted and Multi-split	Class 8, 18	7.0	4.3
Air-to-air: Single-split Non-ducted and Multi-split	Class 9, 19	5.5	3.6
Air-air: Single-split Ducted or Non-Ducted, Multi-split, and Unitary Ducted or Non-Ducted	Class 10, 11, 20	5.0	3.5
Air-air: Single-split Ducted or Non-Ducted, Multi-split, and Unitary Ducted or Non-Ducted	Class 5, 6, 7, 12, 21, 24, 25, 27	3.5	3.3

*Only to be used if there is no TCSPF_mixed data recorded in the GEMS Registry.

Lifetime

Lifetime = 12 years.

Activity Definition WH1

(deleted)

Activity Definition RF2

Name of Activity

Replace an existing Refrigerated Cabinet with a new high efficiency Refrigerated Cabinet

Eligibility Requirements

1. This activity must be a replacement of an existing Refrigerated Cabinet (whether operational or not) with a high efficiency Refrigerated Cabinet.

Equipment Requirements

1. The End-User Equipment must be a Refrigerated Cabinet (RC) as defined within the terms of the Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020.
2. The refrigerated cabinet must have an Energy Efficiency Index (EEI) below 81, as recorded in the GEMS Registry, with the exception of Integral Ice Cream Freezer Cabinets (class 5) which must have an EEI below 51, as recorded in the GEMS Registry.
3. The End-User Equipment must be a registered product based on Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020 or the New Zealand Energy Efficiency (Energy Using Products) Amendment Regulations 2020, as updated from time to time.
4. The replacement End-User Equipment must not have 2 or more display sides.
5. The existing End-User Equipment (that is, the End-User Equipment that is replaced as part of the Implementation) must meet at least one of (a), (b) and (c) below.
    a. The existing End-User Equipment is recorded in the GEMS Registry as being the same Refrigerated Cabinet Product Class as the replacement End-User Equipment, as set out in the second column of Table RF2.1.
    b. The existing End-User Equipment is recorded in the GEMS Registry as being of an AS 1731.14 Product Type, as set out in the third column of Table RF2.1, that is in the same row of Table RF2.1 as the Refrigerated Cabinet Product Class of the replacement End-User-Equipment, as set out in the second column of Table RF2.1.
    c. The ACP provides evidence satisfactory to the Scheme Administrator that the existing End-User Equipment is of an AS 1731.14 Product Type, as set out in the third column of Table RF2.1, that is in the same row of Table RF2.1 as the Refrigerated Cabinet Product Class of the replacement End-User-Equipment, as set out in the second column of Table RF2.1.

Implementation Requirements

1. The existing End-User Equipment must be removed and disposed of in accordance with legislation.
2. The replacement End-User Equipment must be installed in its intended place of use and operating.
3. The activity, including the removal of the existing End-User Equipment, must be performed or supervised by a suitably Licensed person in compliance with the relevant standards and legislation.

Activity Peak Demand Savings Capacity

Peak Demand Savings Capacity = (Baseline Input Power × Baseline Peak Adjustment Factor) – (Input Power × Peak Adjustment Factor) × Firmness Factor

Where:

- *Baseline Input Power,* in kW, is calculated using Equation RF2.1
- *Baseline Peak Adjustment Factor* is calculated using Equation RF2.3
- *Input Power,* in kW, is calculated using Equation RF2.2
- *Peak Adjustment Factor* is equal to the Baseline Peak Adjustment Factor
- *Firmness Factor,* as a fraction, is the likelihood that capacity will be available during a system peak event as defined in Table A6.

Equation RF2.1

Baseline Input Power = TEC × af × [Baseline EEI ÷ Product EEI] ÷ 24

Where:

- *TEC* is the *Total Energy Consumption* in kWh/day of the replacement refrigerated cabinet model as recorded in the GEMS Registry
- *Product EEI* is the Energy Efficiency Index of the replacement refrigerated cabinet model as recorded in the GEMS Registry
- *Baseline EEI* is defined in Table RF2.1
- *af* is defined in Table RF2.1

Equation RF2.2
Input Power = TEC × af ÷ 24

Where:

- *TEC* is the *Total Energy Consumption* in kWh/day of the replacement refrigerated cabinet model as recorded in the GEMS Registry
- *af* is defined in Table RF2.1

Equation RF2.3
Baseline Peak Adjustment Factor = Temperature Factor × Usage Factor

Where:

- *Temperature Factor* is defined in Table RF2.2 based on the Product Type
- *Usage Factor* is 1

Table RF2.1

Product Type	Refrigerated Cabinet Product Class (Product Characteristics Code)	AS 1731.14 Product Types	af		Baseline EEI	
					Heavy Duty	*Normal and Light Duty*
1. Integral Refrigerated Display Cabinet	Class 1 (IRH)	HC1, HC2, HC3, HC4, HC5, HC6	1.0		-	100
	Class 2 (IFH)	IHF1, IHF3, IHF4, IHF5, IHF6 (>500l)	1.0		-	77
	Class 7 (IRV)	IVC1, IVC2, IVC3, IVC4 Glass door (M1)	1.0		-	60
	Class 8 (IFV)	IVF1, IVF2, IVF4 Glass door	1.0		-	100
	Class 11 (IRV-4)	IVC4 Glass door (M2)	1.0		-	100
2. Integral Ice Cream Freezer Cabinet	Class 5 (IFH-5)	IHF5, IHF6 (<500 litres)	1.0		-	100
3. Remote Refrigerated Display Cabinet	Class 12 (RRH)	RS6, RS7, RS8, RS9	1.0		-	100
	Class 13 (RFH)	RS13, RS14,	1.0		-	77
	Class 14 (RRV or RRV-2)	RS1, RS2, RS3, RS4, RS5, RS10	1.0		-	77
	Class 15 (RFV)	RS11, RS12, RS15, RS16, RS17, RS18, RS19, RS20	1.0		-	100
4. Gelato or Ice Cream Scooping Cabinet	Class 6 (GSC or ISC)		1.0		-	60
5. Refrigerated Storage Cabinet	Class 3 (SRH)		LD:	1.2	77	77
			ND or HD:	1.0		
	Class 4 (SFH)		LD:	1.1	77	77
			ND or HD:	1.0		
	Class 9 (SRV)		LD:	1.2	100	100
			ND or HD:	1.0		
	Class 10 (SFV)		LD:	1.1	100	100
			ND or HD:	1.0		

Table RF2.2: Refrigerated Cabinet Temperature Factor by Product Type

Product Type	Temperature Factor
Integral Refrigerated Display Cabinet (RDC), or light duty Refrigerated Storage Cabinet (RSC).	1.14
Normal or heavy duty Refrigerated Storage Cabinet (RSC), Ice-Cream Freezer, or Gelato Scooping Cabinet.	0.84
Remote Refrigerated Display Cabinet (RDC).	1.81

Lifetime

Table RF2.3

Refrigerated Cabinet Class	Temperature class	Lifetime (years)
Classes 1 - 6, 9, 10	All	8
Classes 7, 8 and 11	All	8
Classes 12 - 15	All	12

Activity Definition SYS2

Name of Activity

Install a new high efficiency Pool Pump or Replace an existing Pool Pump with a high efficiency Pool Pump

Eligibility Requirements

1. This activity must be an installation of a new high efficiency pool pump or a replacement of an existing pool pump (whether operational or not) with a high efficiency pool pump.

Equipment Requirements

1. The new or replacement End-User Equipment must be registered in the GEMS Registry as complying with the Greenhouse and Energy Minimum Standards (Swimming Pool Pump-units) Determination 2021.
2. The new or replacement End-User Equipment must have a star rating, as recorded in the GEMS Registry, equal to or greater than 4.
3. The new or replacement End-User Equipment must have a warranty of at least 3 years.

Implementation Requirements

1. Any existing End-User Equipment must be removed.
2. The new or replacement End-User Equipment must be installed.
3. The activity, including the removal of any existing End-User Equipment, must be performed or supervised by a suitably qualified licence holder, where required, in compliance with the relevant standards and legislation.

Activity Peak Demand Savings Capacity

Peak Demand Savings Capacity = ((*Baseline Input Power* × *Baseline Peak Adjustment Factor*) – (*Input Power* × *Peak Adjustment Factor*)) × *Firmness Factor*

Where:

- *Baseline Input Power*, in kW, is the value of Baseline Input Power from Table SYS2.1 corresponding to the new or replacement End-User equipment's Maximum Tested Input Power as recorded in the GEMS Registry, also known as "High" in the GEMS Registry
- *Baseline Peak Adjustment Factor* is specified in Table A4
- *Input Power*, in kW, is calculated using Equation SYS2.1
- *Peak Adjustment Factor* is specified in Table A4
- *Firmness Factor*, as a fraction, is the likelihood that capacity will be available during a system peak event as defined in Table A6.

Equation SYS2.1

Input Power = *PAEC* ÷ (365 × *DRT*)

Where:

- *PAEC*, in kWh/year, is the new or replacement End-User equipment's Projected Annual Energy Consumption as recorded in the GEMS Registry, also known as Labelled Energy Consumption
- 365, in days/year, is the number of days per year
- *DRT*, in hours/day, is the new or replacement End-User equipment's Daily Run Time as recorded in the GEMS Registry.

Table SYS2.1 Baseline Input Power (kW)

Maximum Tested Input Power (W)	Baseline Input Power (kW)
<=1000	0.8
>1000 and <=1500	1.2
>1500 and <=2000	1.2
>2000	1.2

Lifetime

Lifetime = 10 years.

Schedule C Store and Shift Capacity

Activity Definition BESS1

Name of Activity

Install a New Behind the Meter Battery Energy Storage System (single dwelling residential and small business)

Eligibility Requirements

1. There must not be an existing Battery Energy Storage System installed at the same National Metering Identifier(s).
2. A Behind the Meter solar photovoltaic system must be installed at the same National Metering Identifier(s) that the End-User Equipment is being installed.

Equipment Requirements

1. The End-User Equipment must be listed on an approved product list specified by the Scheme Administrator.
2. The End-User Equipment must have a Usable Battery Capacity greater than 2 kWh and less than 28 kWh as recorded on the approved product list specified by the Scheme Administrator.
3. The End-User Equipment must be internet connectable and controllable by a Demand Response Aggregator.
4. Each item of End-User Equipment, excluding inverters installed prior to the Implementation Date, must have a warranty of at least 10 years and guarantee that at least seventy percent (70%) of Usable Battery Capacity is retained 10 years from the date the End-User Equipment is installed at the site.
5. (deleted)
6. Each End-User Equipment warranty must define the normal use conditions during the operation of the End-User Equipment as not being less than:
    a. A minimum ambient temperature range of -10 °C to 50 °C
    b. A minimum warranted cumulative energy throughput equivalent to 2.8 MWh per kWh of Usable Battery Capacity.

Implementation Requirements

1. The End-User Equipment must be installed in accordance with AS/NZS 5139.
2. The End-User Equipment must be installed by an installer on an approved installer list specified by the Scheme Administrator.
3. The activity must be performed by a suitably Licensed person in compliance with the relevant standards and legislation.
4. Where the Battery Energy Storage System is installed indoors, a working smoke alarm that meets AS 3786 must be installed in the immediate vicinity.

Activity Peak Demand Shifting Capacity

Equation BESS1.1

Peak Demand Shifting Capacity = Demand Shifting Component × *Firmness Factor*

Where:

- *Demand Shifting Component,* in kW, is calculated using Equation BESS1.2
- *Firmness Factor,* as a fraction, is the likelihood that capacity will be available during a system peak event as defined in Table A6.

Equation BESS1.2

Demand Shifting Component = Usable Battery Capacity × *0.0853kW/kWh*

Lifetime

Lifetime = 15 years.

Activity Definition BESS3

Name of Activity

Install a New Behind the Meter Battery Energy Storage System (apartments)

Eligibility Requirements

1. The Site must be an Apartment Building, comprising not less than four individual dwellings.
2. There must not be an existing Battery Energy Storage System installed at the same National Metering Identifier(s).

Equipment Requirements

1. The End-User Equipment must be listed on an approved product list specified by the Scheme Administrator.
2. The End-User Equipment must have a Usable Battery Capacity greater than 20 kWh and less than or equal to 200 kWh as recorded on the approved product list specified by the Scheme Administrator.
3. The Usable Battery Capacity of the End-User Equipment must not exceed six times the Battery Inverter Output of the End-User Equipment as recorded on the approved product list specified by the Scheme Administrator.
4. The End-User Equipment must be internet connectable and controllable by a Demand Response Aggregator.
5. Each item of End-User Equipment, excluding inverters installed prior to the Implementation Date, must have a warranty of at least 10 years and guarantee that at least seventy percent (70%) of Usable Battery Capacity is retained 10 years from the date the End-User Equipment is installed at the site.

Implementation Requirements

1. The End-User Equipment must be installed outdoors.
2. The End-User Equipment must be installed Behind the Meter and in accordance with AS/NZS 5139.
3. The End-User Equipment must be installed by an installer on an approved installer list specified by the Scheme Administrator.
4. The activity must be performed by a suitably Licensed person in compliance with the relevant standards and legislation.
5. The installation of the End-User Equipment must have received all required planning and network approvals.

Activity Peak Demand Shifting Capacity

Equation BESS3.1

Peak Demand Shifting Capacity = Demand Shifting Component × *Firmness Factor*

Where:

- *Demand Shifting Component,* in kW, is calculated using:
  - Equation BESS3.2 where the End-User Equipment is installed within 90 days of New Solar Photovoltaic Capacity being installed, except where NSW Government funding has been received for the installation of New Solar Photovoltaic Capacity; or
  - Equation BESS3.3 in all other cases.
- *Firmness Factor,* as a fraction, is the likelihood that capacity will be available during a system peak event as defined in Table A6.

Equation BESS3.2

Demand Shifting Component = Battery Capacity × 0.12 kW/kWh

Equation BESS3.3

Demand Shifting Component = Battery Capacity × 0.0853 kW/kWh

Where:

- *Battery Capacity*, kWh, is the lesser of:
  - Usable Battery Capacity;
  - 5 kWh per individual dwelling multiplied by the total number of dwellings; or
  - Four hours multiplied by the Battery Inverter Output

Lifetime

Lifetime = 15 years.

Activity Definition BESS4

Name of Activity

Install a New Business Behind the Meter Battery Energy Storage System (small and medium businesses)

Eligibility Requirements

1. The Site must not be a Residential Building or a Data Centre.
2. An Implementation of either Activity Definitions BESS4 or BESS5 must not have previously been conducted at the Site.

Equipment Requirements

1. The End-User Equipment must be listed on an approved product list specified by the Scheme Administrator.
2. The End-User Equipment must have a Usable Battery Capacity greater than 20 kWh and less than or equal to 200 kWh as recorded on the approved product list specified by the Scheme Administrator.
3. The Usable Battery Capacity must not exceed six times the Battery Inverter Output of the End-User Equipment, as recorded on the approved product list specified by the Scheme Administrator.
4. The New Solar Photovoltaic Capacity must not be less than a quarter of the Usable Battery Capacity of the End-User Equipment.
5. The End-User Equipment must be internet connectable and controllable by a Demand Response Aggregator.
6. Each item of End-User Equipment, excluding inverters installed prior to the Implementation Date, must have a warranty of at least 10 years and guarantee that at least seventy percent (70%) of Usable Battery Capacity is retained 10 years from the date the End-User Equipment is installed at the site.

Implementation Requirements

1. The End-User Equipment must be installed Behind the Meter and in accordance with AS/NZS 5139.
2. The End-User Equipment must be installed by an installer on an approved installer list specified by the Scheme Administrator.
3. The activity must be performed by a suitably Licensed person in compliance with the relevant standards and legislation.
4. The installation of the End-User Equipment must have received all required planning and network approvals.
5. Where the Battery Energy Storage System is installed indoors in a Class 3 building, a working smoke alarm that meets AS 3786 must be installed in the immediate vicinity.

Activity Peak Demand Shifting Capacity

Equation BESS4.1

Peak Demand Shifting Capacity = Demand Shifting Component × Firmness Factor

Demand Shifting Component, in kW, is calculated using:

- Where the End-User Equipment is installed within 90 days of New Solar Photovoltaic Capacity being installed,
  - Equation BESS4.2A, where *Battery Capacity* is less than or equal to 50 kWh;
  - Equation BESS4.2B, where *Battery Capacity* is greater than 50 kWh and less than or equal to 100 kWh; or
  - Equation BESS4.2C, where *Battery Capacity* is greater than 100 kWh and less than or equal to 200 kWh.
- In all other cases,
  - Equation BESS4.3A, where *Battery Capacity* is less than or equal to 50 kWh;
  - Equation BESS4.3B, where *Battery Capacity* is greater than 50 kWh and less than or equal to 100 kWh; or
  - Equation BESS4.3C, where *Battery Capacity* is greater than 100 kWh and less than or equal to 200 kWh.

Firmness Factor, as a fraction, is the likelihood that capacity will be available during a system peak event as defined in Table A6.

Equation BESS4.2A

Demand Shifting Component = Battery Capacity × 0.1 kW/kWh × 0.5

Equation BESS4.2B

Demand Shifting Component = (50 × 0.1 kW/kWh × 0.5) + ((Battery Capacity – 50) × 0.1 kW/kWh × 0.7)

Equation BESS4.2C

Demand Shifting Component = Battery Capacity × 0.1 kW/kWh

Equation BESS4.3A

Demand Shifting Component = Battery Capacity × *0.067 kW/kWh* × *0.5*

Equation BESS4.3B
Demand Shifting Component = (50 × *0.067 kW/kWh* × *0.5) + ((Battery Capacity – 50)* × *0.067 kW/kWh* × *0.7)*

Equation BESS4.3C
Demand Shifting Component = Battery Capacity × *0.067 kW/kWh*

Where:

- *Battery Capacity*, in kWh, is the lesser of:
  - Usable Battery Capacity; or
  - Four hours multiplied by the Battery Inverter Output

Lifetime

Lifetime = 15 years.

Activity Definition BESS5

Name of Activity

Install a New Behind the Meter Energy Storage System (commercial and industrial businesses)

Eligibility Requirements

1. The End-User Equipment must not be installed in a Residential Building or Data Centre.
2. An Implementation of either Activity Definitions BESS4 or BESS5 must not have previously been conducted at the Site.

Equipment Requirements

1. The End-User Equipment must be tested in accordance with UL9540A.
2. The End-User Equipment must have a Usable Battery Capacity greater than 200 kWh and less than or equal to 30,000 kWh as recorded in a manner specified by the Scheme Administrator.
3. The Usable Battery Capacity must not exceed six times the Battery Inverter Output of the End-User Equipment, as recorded in the manner specified by the Scheme Administrator.
4. The New Solar Photovoltaic Capacity must not be less than a quarter of the Usable Battery Capacity of the End-User Equipment.
5. The End-User Equipment must be internet connectable and controllable by a Demand Response Aggregator.

Implementation Requirements

1. The End-User Equipment must be installed by a suitably Licensed person in compliance with the relevant standards and legislation.
2. The installation of the End-User Equipment must have received all required planning and network approvals.

Activity Peak Demand Shifting Capacity

Equation BESS5.1

Peak Demand Shifting Capacity = Demand Shifting Component × *Firmness Factor*

Where:

- *Demand Shifting Component,* in kW, is calculated using:
  - Equation BESS5.2 where the End-User Equipment is installed within 90 days of New Solar Photovoltaic Capacity being installed; or
  - Equation BESS5.3 in all other cases.
- *Firmness Factor,* as a fraction, is the likelihood that capacity will be available during a system peak event as defined in Table A6.

Equation BESS5.2

Demand Shifting Component = (Battery Capacity × *0.1 kW/kWh)*

Where:

- *Battery Capacity*, in kWh, is the lesser of:
  - Usable Battery Capacity;
  - 10,000 kWh; or
  - Four hours multiplied by the Battery Inverter Output

Equation BESS5.3

Demand Shifting Component = Battery Capacity × *0.067 kW/kWh*

Where:

- *Battery Capacity*, in kWh, is the lesser of:
  - Usable Battery Capacity;
  - 10,000 kWh; or
  - Four hours multiplied by the Battery Inverter Output

Lifetime

Lifetime = 15 years.

Schedule D Household Annual Demand Response

Activity Definition BESS2

Name of Activity

Onboard a Behind the Meter Battery Energy Storage System with a Demand Response Aggregator

Eligibility Requirements

1. There must be an existing Battery Energy Storage System installed at the National Metering Identifier(s).
2. There must not be any Life Support Equipment used at the Site.

Equipment Requirements

1. The End-User Equipment must be listed on an approved product list specified by the Scheme Administrator.
2. The End-User Equipment must have a Usable Battery Capacity greater than 2 kWh and less than or equal to 50 kWh as recorded on the approved product list specified by the Scheme Administrator.
3. Each item of End-User Equipment must have a minimum 6 years remaining on the warranty.
4. Participation in the activity must not void or diminish the End-User Equipment warranty.

Implementation Requirements

1. The internet connection and Demand Response Aggregator control of the End-User Equipment must be demonstrated to be operational to the satisfaction of the Scheme Administrator.

Activity Peak Demand Response Capacity

Equation BESS2.1

Peak Demand Response Capacity = Demand Response Component × *Firmness Factor*

Where:

- *Demand Response Component,* in kW, is calculated using Equation BESS2.2
- *Firmness Factor,* as a fraction, is the likelihood that capacity will be available during a system peak event as defined in Table A6.

Equation BESS2.2

Demand Response Component = Battery Capacity × *0.0734 kW/kWh*

Where:

- *Battery Capacity,* in kWh, is the lesser of:
  - Usable Battery Capacity; or
  - 28 kWh.

Lifetime

Lifetime = 6 years.

Activity Definition V2G1

Name of Activity

Onboard a Battery Electric Vehicle with a Demand Response Aggregator

Equipment Requirements

1. The Battery Electric Vehicle must have a battery capacity greater than or equal to 40 kWh and be enabled for bidirectional charging as recorded on a list as specified by the Scheme Administrator.
2. The Electric Vehicle Supply Equipment must be listed on an approved product list specified by the Scheme Administrator.
3. Each item of End-User Equipment must have a minimum 6 years remaining on the warranty.
4. Participation in the activity must not void, reduce or otherwise diminish any applicable manufacturer warranty for the Battery Electric Vehicle battery or the Electric Vehicle Supply Equipment.

Implementation Requirements

1. The internet connection and Demand Response Aggregator control of the End-User Equipment must be demonstrated to be operational to the satisfaction of the Scheme Administrator.

Activity Peak Demand Response Capacity

Equation V2G1.1

Peak Demand Response Capacity = Demand Response Component × *Firmness Factor*

Where:

- *Demand Response Component* is *1.3504 kW*
- *Firmness Factor,* as a fraction, is the likelihood that capacity will be available during a system peak event as defined in Table A6.

Lifetime

Lifetime = 6 years.