IPART

Independent Pricing and Regulatory Tribunal
New South Wales

Installation of High Efficiency Appliances for Businesses

Method Guide

Energy Savings Scheme

September 2020

The Independent Pricing and Regulatory Tribunal (IPART)

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V3.4	Updated to reflect amendments to the ESS Rule, and previous changes made to the ACP Application Guide and Application Form: Part B.	March 2020
V3.5	Updated to reflect amendments to the ESS Rule.	September 2020

Contents

1 About this document

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

The other objects of the ESS are to:

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

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

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

- applicants seeking accreditation as a certificate provider, to assist them in completing their application,[3] and
- those persons who are already ACPs, to assist them in accurately calculating energy savings using this method.

1.1 Legislative requirements

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

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

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

1 Schedule 4A to the *Electricity Supply Act 1995*, clause 1(2)
2 Schedule 4A to the *Electricity Supply Act 1995*, clause 56(2) and 55(2)
3 A full explanation of the application process is provided in the Application Guide www.ess.nsw.gov.au/How_to_apply_for_accreditation/The_application_process. Applicants should read this document and the Application Guide in full before applying for accreditation.

2 Method overview

The Business Appliances method can be used to calculate energy savings from a range of energy efficiency activities. The method provides an incentive to purchase and install high efficiency appliances for business consumers who will benefit from the ongoing energy savings.

3 Requirements that must be met

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

3.1 Energy saver

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

- the **original energy saver** – which, under the Business Appliances method, is the purchaser (discussed below), or
- the **nominated energy saver** – which is someone the original energy saver has nominated as the energy saver by completing a Nomination Form.[4]

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

An ACP that is a nominated energy saver must:

- be **accredited** as an ACP prior to the implementation date and before the nomination is made,[5]
- have a documented procedure for obtaining the nomination from the original energy saver, and
- be **nominated** by the original energy saver **on or before** the implementation date. The nomination is taken to occur on the date that the nomination form is signed by the **original energy saver.**

3.1.1 Purchaser

In general, the purchaser is the person who purchases or leases the goods or services that enable the relevant energy savings to be made. However, the following persons cannot be a

4 Available at: www.ess.nsw.gov.au/Accredited_Certificate_Providers/Templates

5 The ESS website provides information on applying to become an ACP at: www.ess.nsw.gov.au/How_to_apply_for_accreditation.

'purchaser' and therefore cannot be an original energy saver under the Business Appliances method:[6]

- an ACP who is not the owner, occupier or operator of the relevant site,[7] and
- a person who 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 a strata scheme lot.[8]

3.2 Implementation, implementation date and site

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

3.2.1 Implementation

An implementation is the delivery of a RESA[9] at a site.[10] Activities eligible to be RESAs where the Business Appliance Method is used are set out in Schedule F to the ESS Rule (see section 3.4 of this guide).

3.2.2 Implementation date

For RESAs under the Business Appliances method, the implementation date is the date the appliance is installed.[11]

3.2.3 Site

Under the ESS Rule, a 'site' means the location of where the end-user equipment was installed. This may be defined by:

- an address, or
- a unique identifier, as specified for the relevant implementation that identifies the affected end-user equipment; or
- a method accepted by the Scheme Administrator.

3.3 Site assessment report and installer declaration

ACPs undertaking gas saving activities (F8 to F15) must arrange for the original energy saver or installer to complete and sign a site assessment report to be completed for each implementation.

6 *ESS Rule*, cl 10.1 (definition of 'Purchaser').
7 ACPs that are nominated Energy Savers will typically fall under this category.
8 Wholesalers will typically fall under this category.
9 A RESA must meet all of the criteria set out in clause 5.3, 5.3A, 5.3B and does not includes those activities set out in clause 5.4 of the ESS Rule.
10 *ESS Rule*, cl 10.1 (definition of 'Implementation').
11 *ESS Rule*, cl 9.9.2

They must also arrange for the installer to complete and sign an installer declaration for implementations of activities F5 to F7 (and F8 to F15 where a declaration is provided as evidence).

ACPs must keep copies of completed site assessment reports and/or installer declarations for each implementation as evidence to be checked at audit.

ACPs may use the templates available on the ESS website (refer Table 3.2 in section 3.7 of this guide) or create their own report and/or declaration.

3.4 Eligible activities

Eligible activities are defined in the activity definitions in Schedule F of the ESS Rule. Each activity definition defines a class of appliance that can be installed and the requirements the appliance must meet. To be eligible, each activity undertaken at the site must comply with the requirements specified in the activity definition. These requirements include:

- eligibility requirements
- equipment requirements, and
- installation or implementation requirements.

Applications for accreditation must specify which of the activities in Schedule F of the ESS Rule will be undertaken as part of the RESA. Applicants will need to provide information with the application describing how they will comply with the requirements for each of the activities. The activity definitions are listed in Table 3.1 of this guide.

Table 3.1 Eligible activities

Activity Definitions	Name of Activity
F1	High efficiency refrigerated cabinet
F2	High efficiency liquid chilling package
F3	High efficiency close control air conditioner
F4	High efficiency air conditioner
F5	Electronically commutated (brushless DC) motor to power a fan in a refrigerated cabinet, freezer or cool room
F6	Electronically commutated (brushless DC) motor to power a ventilation fan
F7	Three phase electric high efficiency motor
F8	High efficiency gas fired steam boiler
F9	High efficiency gas fired hot water boiler or gas fired water heater
F10	Oxygen trim system on a gas fired steam boiler, hot water boiler or water heater
F11	Burner on a gas fired steam boiler, hot water boiler or water heater
F12	Economiser on a gas fired steam boiler, hot water boiler or water heater
F13	Sensor based blowdown control on a gas fired steam boiler
F14	Blowdown flash steam heat recovery system on a gas fired steam boiler
F15	Blowdown heat exchanger on gas fired steam boiler

3.4.1 Ineligible activities

The ESS is designed to promote additional energy savings activities that would not otherwise have occurred. As such, a range of specific activities are not eligible for the creation of ESCs, including:

- an activity undertaken in order to comply with a mandatory, statutory or regulatory requirement, including BASIX or the Building Code of Australia
- a reduction in energy consumption by reducing production or service levels (including safety levels)
- an activity that increases the efficiency of gas consumption and results in the flaring of gas, and
- a fuel switching activity that results in a net increase in greenhouse gas emissions.[12]

Applications for accreditation should describe how activities will be excluded from energy savings and ESC calculations if ineligible activities are included in the RESA.

3.4.2 Eligibility requirements

The eligibility requirements relate to the existing conditions at the site. Please refer to the eligibility requirements specified in each activity definition in Schedule F of the ESS Rule.

ACPs must collect records to verify that the eligibility requirement(s) have been met for each activity they implement. The records required for each activity are provided in section 6 of this guide. This will be checked during audits.

Applications for accreditation will need to describe how the organisation will ensure that ESCs are only created from implementations that comply with the eligibility requirements.

ACPs must provide a site assessment report, declaring that activities being implemented meet the eligibility requirement specified in Schedule F of the ESS Rule. The report may be based on the template provided on the ESS website. [13]

3.4.3 Equipment requirements

The equipment requirements are specific to the type of product being installed. Refer to the equipment requirements specified in each activity definition in Schedule F of the ESS Rule. These requirements may include:

- meeting the requirements of various Australian Standards
- being a Greenhouse and Energy Minimum Standards (**GEMS**) registered product[14]
- meeting Minimum Energy Performance Standards (**MEPS**)[15]

12 Refer to ESS Rule, cl 5.4 for more details on ineligible activities.
13 Available at: www.ess.nsw.gov.au/Methods_for_calculating_energy_savings/Business_Appliances
14 For further information about the GEMS registry, please refer to: www.energyrating.gov.au/regulations/legislation/regulators
15 Refer: www.energyrating.gov.au

- meeting other performance requirements specified in Schedule F of the ESS Rule, and
- any requirements specified by the Scheme Administrator.

We do not maintain a list of accepted products that meet the equipment requirements for this method. ACPs can use the Commonwealth Government's GEMS registry to determine if their appliance meets these requirements. However, a listing in the GEMS registry does not guarantee an appliance meets all the equipment requirements for the ESS, as certain activity definitions in the ESS Rule place additional requirements on appliances under this method, which must also be met for equipment to be installed under the ESS.

ACPs must collect records to verify that the equipment requirement(s) have been met for each activity they implement (refer section 6 of this guide).

Applications for accreditation will need to describe how the organisation will be able to address the equipment requirements for each activity for which they wish to be accredited.

Recycling and disposal requirements

ACPs are responsible for ensuring that any refrigerants that are removed or replaced during a refrigeration equipment upgrade must be disposed of in a manner that is compliant with the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*.

3.4.4 Transitional arrangements for Activity Definition F1

Activity Definition F1 in Schedule F of the ESS Rule was amended in September 2020.[16] The new definition notes that a refrigerated cabinet must be registered under the *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020* (**GEMS 2020**).[17] Clause 11.15 of the ESS Rule sets out the transitional arrangements that apply to this activity.

For implementations with an implementation date before the commencement of GEMS 2020, ACPs can calculate energy savings under:

- The *Energy Savings Scheme Rule of 2009 – 31 July 2018* (**old Rule**) if the End-User Equipment (**EUE**) is registered under the *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2012* (**GEMS 2012**)
- The ESS Rule as amended by the *Energy Savings Scheme (Amendment No.2) Rule 2020* (**new Rule**) if the EUE is registered under GEMS 2020
- Either the old Rule or the new Rule if the EUE is registered under both GEMS 2012 and GEMS 2020.

ACPs do not have to apply for registration of ESCs attributable to energy savings calculated under the old Rule before the commencement date of GEMS 2020.

16 The *Energy Savings Scheme (Amendment No.2) Rule 2020* was gazetted on 4 September 2020.

17 In August 2020, the commencement of the *Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2019* was delayed and replaced with GEMS 2020. GEMS 2019 was due to commence on 15 August 2020, but GEMS 2020 will instead commence on 1 May 2021.

We expect ACPs to state clearly in their documentation supporting ESC creation which of the new Rule and old Rule they elected to use.

3.5 Installation and implementation requirements

The method can only be used to calculate energy savings from eligible activities. This method cannot be used to calculate energy savings from the sale of products.

Additional installation and implementation requirements are specific to each activity definition in Schedule F of the ESS Rule. In addition to the installation and implementation requirements specified in Schedule F of the ESS Rule, ACPs must comply with any additional state or Commonwealth legislative requirements that apply to the activity.

ACPs must collect records to verify that the installation and implementation requirements have been met for each activity implemented. For activities F5 to F7 they must provide an installer declaration[18], declaring that the implementation and the equipment meet the requirements specified in Schedule F of the ESS Rule. The installer declaration may be based on the template provided on the ESS website. [19] The records required for each activity are provided in section 6 of this guide.

Applications for accreditation must describe how the organisation will be able to address the implementation requirements for each activity for which they wish to be accredited.

3.5.1 Efficiency requirement for installing new end-user equipment

The installation of 'New End-User Equipment' only constitutes a RESA if the Scheme Administrator is satisfied that it is more efficient than the average energy efficiency of end-user equipment of the same type, or that it provides the same function, output or service.

The activity definitions in Schedule F provide a range of options for the installation of New End-User Equipment, as well as the replacement, modification or removal of existing end-user equipment or a particular component of existing end-user equipment.

Where an activity definition in Schedule F of the ESS Rule involves the installation of New End-User Equipment it must have a higher efficiency than any baseline/defined parameters specified in Schedule F of the ESS Rule (eg, Activity Definition F1 – Install a new high efficiency refrigerated cabinet).

However, where an activity definition in Schedule F involves the installation of a new component for the purpose of reducing the energy consumption of existing end-user equipment, it does not necessarily need to consume less energy than end-user equipment of the same type. This is because the component is being used to achieve an overall reduction in energy consumption from its influence on the existing end-user equipment (eg, Activity Definition F10 – Install an oxygen trim system on an existing boiler).

18 An installer declaration can also be used as implementation record for gas activities (F8 to F15).
19 Available at: www.ess.nsw.gov.au/Methods_for_calculating_energy_savings/Business_Appliances

3.6 Minimum requirements of conduct

The Scheme Administrator has established minimum requirements for the conduct of ACPs and their representatives. This includes ACP responsibilities for:

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

ACPs are accountable for all ESS activities conducted by employees, third parties and other representatives. This includes all aspects of an activity for which they create ESCs, from the initial engagement with customers, through to the final quality assurance of documents. ACPs will be held responsible for all actions, omissions and information provided by representatives acting on their behalf under the ESS – regardless of any contract or agreement with other parties. For more information, refer to *ESS Notice 01/2013 (V3.0) Minimum Requirements of conduct.*[20]

3.7 Use of templates

A number of templates have been provided for the use of ACPs and their installers when engaging with customers, as outlined in Table 3.2. More information on the use of these templates can be found in section 6 of this guide.

Table 3.2 Relationship between templates / forms and implementation stage

Project Stage	Template / form	Location
Before implementation commences	▼ *Nomination form* signed by customer and ACP	▼ www.ess.nsw.gov.au/Accredited_Certificate_Providers/Templates
At the start of the implementation (gas activities only)	▼ *Site Assessment Report* completed and signed by the original energy saver or the installer	▼ www.ess.nsw.gov.au/Methods_for_calculating_energy_savings/Business_Appliances
At the end of the implementation (gas activities only)	▼ *Installer Declaration* signed by the installer	▼ www.ess.nsw.gov.au/Methods_for_calculating_energy_savings/Business_Appliances

3.8 Insurance

ACPs (and any agents/subcontractors[21] involved in the delivery of the RESA) must each be covered by Public Liability Insurance cover of at least $5 million. Insurance cover of this amount must be maintained for the life of the RESA. Public Liability Insurance must, at a minimum, cover the replacement and/or rectification of customer property damaged as a

20 Refer: www.ess.nsw.gov.au/Home/Document-Search/Notices/Notice-012013-Minimum-requirements-of-conduct/Notice-012013-Requirements-for-all-methods-Minimum-requirements-of-conduct-V3.0

21 That is, any company ACPs are working with involved directly in the implementation of the RESA.

result of work performed by the ACP and/or the ACP's representatives, subcontractors or agents.

Either the ACP or the ACP's representatives, agents or subcontractors must also hold Product Liability Insurance of at least $5 million that covers all products used in the RESA. In the event that the ACP is unable to obtain Product Liability Insurance, they must ensure that their representatives hold Product Liability Insurance of at least $5 million.

ACPs must also:

- provide the Scheme Administrator with current certificates of their, and their subcontractors'/agents', Public Liability and Product Liability Insurances, within seven days of each renewal, reissue or change of policy, and
- maintain a register of subcontractors/agents that contains copies of their Public Liability Insurance and, where required, their Product Liability Insurance.
- Compliance with these requirements will be checked at the time of audit.

4 Calculating energy savings

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

4.1 Electricity savings

The electricity savings from an implementation of the Business Appliances method can be calculated using:

- equation 17 of the ESS Rule, which uses:
- the deemed equipment electricity savings from Schedule F of the ESS Rule, and
- the regional network factor from Table A24 in Schedule A of the ESS Rule.

4.2 Gas savings

The gas savings from an implementation can be calculated using equation 17 of the ESS Rule, which uses the deemed equipment gas savings from Schedule F of the ESS Rule.

The regional network factor does not apply to gas savings.

4.3 Calculation tools

ACPs can develop their own calculation tool. Spreadsheets and tools used in the calculation of energy savings must be developed and maintained to ensure they are up to date and comply with the most recent requirements. For example, ESS Rule factors, including deemed activity electricity and gas savings factors, are updated from time to time. Calculations of energy savings must be done in accordance with the relevant equations outlined in the ESS Rule.

5 Calculating and creating ESCs

Equation 1 of the ESS Rule is used to calculate the number of ESCs that may be created from the energy savings calculated in relation to an implementation.

Equation 1

$$Number\ of\ Certificates = \Sigma_{Implementations}\ (Electricity\ Savings \times Electricity\ Certificate\ Conversion\ Factor + Gas\ Savings \times Gas\ Certificate\ Conversion\ Factor)$$

5.1 Applying to register ESCs

Certain information must be submitted to the Scheme Administrator before an ACP applies to register ESCs.[22] ACPs are to provide the required information by completing an *Implementation Data Sheet*[23] and submitting it through the ESS Portal.[24] The *Implementation Data Sheet* will include a calculation of the number of ESCs to be created in accordance with Equation 1 in the ESS Rule. This calculation involves:

- multiplying electricity savings (from Equation 17 in the ESS Rule) by the electricity certificate conversion factor (1.06)[25]
- multiplying gas savings (from Equation 17 in the ESS Rule) by the gas certificate conversion factor (0.39),[26] and
- adding the two figures together.

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

There are no restrictions on how many implementations can be bundled together in the same *Implementation Data Sheet*. However:

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

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

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

22 *ESS Rule*, cl 6.8
23 Available at: www.ess.nsw.gov.au/Registry/Registering_certificates
24 Information and access to the portal can be found here: www.ess.nsw.gov.au/ESS_Portal
25 Schedule 4A to the *Electricity Supply Act 1995*, section 33(1)
26 Schedule 4A to the *Electricity Supply Act 1995*, section 33(1)

- the cost of registering the ESCs.[27]

More information on applying to register the creation of ESCs can be found on ESS website.[28]

6 Minimum required records

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

- the location in which the RESA occurred
- the energy savings arising from that RESA
- the methodology, data and assumptions used to calculate those energy savings, and
- any other records specified by the Scheme Administrator.[29]

ACPs must retain records for at least six years, in a form and manner approved by the Scheme Administrator. Each ACP's Accreditation Notice may include a condition requiring that the ACP's record keeping arrangements are consistent with the *Record Keeping Guide*.[30]

Tables 6.1 to 6.12 describe the minimum documents ACPs are required to keep as a record of the energy savings from the project. For each implementation, ACPs must collect:

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

27 The ESC registration fee must be paid in a single payment for all ESCs registered in a single bundle. Payment for a single bundle cannot be split into two payments. Refer: www.ess.nsw.gov.au/Registry/Registering_certificates

28 Available at: www.ess.nsw.gov.au/Home/About-ESS/ESS-Registry-and-ESS-Portal/Registering-ESCs

29 *Electricity Supply (General) Regulation 2014*, cl 46

30 Available at: www.ess.nsw.gov.au/Accredited_Certificate_Providers/Record_keeping_arrangements

Table 6.1 Minimum required records for all implementations - general requirements

Requirement	Document	Description
Implementation Date	Completion/commissioning report or Certificate of Compliance – Electrical Work (**CCEW**) or Gas Certificate of Compliance (**GCC**) or Tax invoice	The document must clearly show: ▼ the date the appliance was installed, and ▼ the address where the installation took place.
Implementation address	Completion/commissioning report or Certificate of Compliance – Electrical Work (**CCEW**) or Gas Certificate of Compliance (**GCC**) or Tax invoice	The document must clearly show: ▼ the date the appliance was installed, and ▼ the address where the installation took place.
Energy Saver	Tax invoice	The tax invoice must clearly show: ▼ the amount paid for the implementation ▼ the name of the purchaser ▼ the ABN of the purchaser (if applicable) ▼ the goods or services purchased, and ▼ the date of the purchase.
Nomination	Nomination form	The nomination form must: ▼ be in the required form (ie, using the relevant template available from the ESS website), and ▼ be signed by the original energy saver on or before the implementation date.
Calculations	The spreadsheet or calculation tool used to calculate energy savings from each implementation.	The document must clearly show the calculation of energy savings, and the data inputs and factors applied as required for the relevant activity in Schedule F of the ESS Rule.

Table 6.2 Minimum required records – for implementations of activities F1, F2, F3 and F4 – refrigerated cabinet, liquid chilling package, close control air conditioner and other air conditioners

Requirement	Document	Description
Appliance make and model	Geo-tagged photo and Tax invoice	Each document must clearly show: ▼ the make of the appliance, and ▼ the model number of the appliance.
Equipment requirements	Screenshot (or similar)	The document must clearly show that the equipment is registered under GEMS. ▼ For activity F1, the document must show the Energy Efficiency Index (**EEI**) to confirm that the EEI is below 77 EEI.[a] ▼ For activity F2, the document must show the Integrated Part Load Value (**IPLV**) to confirm that the IPLV is 10% greater than the corresponding baseline in Table F2.1. ▼ For activity F3, the document must show the Energy Efficiency Ratio (**EER**) to confirm that the EER is 20% greater than the corresponding baseline in Table F3.1. ▼ For activity F4, the document must show the Annual Energy Efficiency Ratio (**AEER**) and the Annual Coefficient of Performance (**ACOP**) to confirm that the AEER is 20% greater than the corresponding baseline in Table F4.1 and that the ACOP is 20% greater than the corresponding baseline in Table F4.2.
Installation requirements	Geo-tagged photo **and**	The photo must show the appliance in place at the site.
	Tax invoice[b] **or** CCEW[c] **or** Commissioning report[d]	The document must show the make and model of the appliance and the address of the site where the appliance was installed.

a A refrigerated cabinet must be registered under GEMS 2020. For transitional arrangements, see Section 3.4.4.

b The tax invoice must be for the installation of the appliance.

c The CCEW must be signed and dated by the relevant licensed electrician.

d The report must be produced by the party responsible for the commissioning/completion of the installation of the appliance.

Table 6.3 Minimum required records – for implementations of activity F5 - Install an electronically commutated motor to power a fan in an installed refrigerated cabinet, freezer or cool room

Requirement	Document	Description
Appliance details – new motor	Tax invoice **and**	The tax invoice must show the make and model of the new motor.
	Manufacturer's data	The manufacturer's data must show that the motor is a brushless DC motor used to power a refrigeration fan. Additionally, the data must show: ▼ the make and model of the fan ▼ the nominal input power (W) of the fan at full capacity with the impeller fitted, and ▼ the output power (W) or airflow volume (m^3/hour) and that this is equal to or greater than that of the ventilation fan it replaced, but not greater than 500W at full capacity with the impeller fitted.
Appliance details – existing motor and refrigeration fan	Manufacturer's data **and**	The manufacturer's data must show that the motor is a shaded pole motor or a permanent split capacitor motor. Additionally, the data must show: ▼ the make and model[a], and ▼ the nominal input power (W) of the appliance at full capacity with the impeller fitted, the output power (W), or airflow volume (m^3/hour).[b]
	Geo-tagged photo of the motor **and**	The photo must show the motor before and after it has been removed. Where possible, it should also show the make and model of the motor.
	Photo of the refrigeration unit	The photo must show: ▼ that the refrigeration unit is a refrigerated cabinet, a reach in freezer or a cool room evaporation unit that is in use, and ▼ the make and model of the refrigeration unit.
Installation requirements	Geo-tagged photo **and**	The photo must clearly show the new motor in place at the site.
	Installer declaration **and**	ACPs must provide a declaration signed by the person who installed the motor. The declaration must include: ▼ the address of the site and date of installation ▼ the make and model of the motor, and ▼ a statement that the motor was installed according to the manufacturer's guidelines.

Requirement	Document	Description
	Tax invoice[c] **or** CCEW[d] **or** Commissioning report[e]	The document must show: ▼ the make and model of the motor, and ▼ the address of the site where the motor was installed.

a If the manufacturer's data does not show this, ACPs can provide a photo showing this instead.

b If the manufacturer's data does not include this information, ACPs can provide calculations or actual measured data. ACPs must justify any assumptions they have made in the calculations, and provide any data/measurements that they have used.

c The tax invoice must be for the installation of the motor.

d The CCEW must be signed and dated by the relevant licensed electrician.

e The report must be produced by the party responsible for the commissioning/completion of the installation.

Table 6.4 Minimum required records – for implementations of activity F6 – Install an electronically commutated motor to power a ventilation fan

Requirement	Document	Description
Appliance details – new motor	Tax invoice **and**	The tax invoice must show the make and model of the new motor.
	Manufacturer's data	The manufacturer's data must show that the motor is a brushless DC motor that is part of an air handling unit used to power a ventilation fan. Additionally, the data must show: ▼ the make and model of the fan ▼ the nominal input power (W) of the fan at full capacity with the impeller fitted, and ▼ the output power (W) or airflow volume (m^3/hour) and that this is equal to or greater than that of the ventilation fan it replaced, but not greater than 500W at full capacity with the impeller fitted.
	Manufacturer's specifications	The document must show that the electronically commutated motor is part of a ducted fan or partition fan in an air-handling system as defined in ISO 13349:2010.
Appliance details – existing motor and ventilation fan	Manufacturer's data **and**	The manufacturer's data must show that the motor is a shaded pole motor or a permanent split capacitor motor. Additionally, the data must show: ▼ the make and model[a] ▼ the nominal input power (W) of the appliance at full capacity with the impeller fitted, the output power (W), or airflow volume (m^3/hour).[b]
	Geo-tagged photo of the motor **and**	The photo must show the motor before and after it has been removed. Where possible, it should also show the make and model of the motor.
	Photo of the air-handling system	The photo must show: ▼ that the ventilation unit is a ducted fan or a partition fan that is in use, and ▼ the make and model of the air handling unit.
Installation requirements	Geo-tagged photo **and**	The photo must clearly show the motor in place at the site.
	Installer declaration **and**	ACPs must provide a declaration signed by the person who installed the motor. The declaration must include: ▼ the address of the site ▼ the make and model of the motor, and ▼ a statement that the motor was installed according to the manufacturer's guidelines.

Requirement	Document	Description
	Tax invoice[c] **or** CCEW[d] **or** Commissioning report[e]	The document must show: ▼ the make and model of the motor, and ▼ the address of the site where the motor was installed.

a If the manufacturer's data does not show this, ACPs can provide a photo showing this instead.

b If the manufacturer's data does not include this information, ACPs can provide calculations or actual measured data. ACPs must justify any assumptions they have made in the calculations, and provide any data/measurements that they have used.

c The tax invoice must be for the installation of the motor.

d The CCEW must be signed and dated by the relevant licensed electrician.

e The report must be produced by the party responsible for the commissioning/completion of the installation.

Table 6.5 Minimum required records – for implementations of activity F7 – Install a new high efficiency motor

Requirement	Document	Description
Appliance details – new motor	Tax invoice **and**	The tax invoice must show the make and model of the new motor.
	Manufacturer's data **and**	The manufacturer's data must show: ▼ the make and model of the motor ▼ the rated (mechanical) output power of the motor in kW, and ▼ the number of motor poles.
	Screenshot (or similar)	The screenshot must show that the product is registered under GEMS (www.energyrating.gov.au).
Load utilisation factor	Process/system information	This information may include: ▼ piping and instrumentation diagram ▼ flow diagram ▼ process schematics, or ▼ photographs of the process.
Appliance details – existing motor (if the implementation is not New End User Equipment)	Manufacturer's data **and**	The data must show: ▼ the make and model[a] , and ▼ the Full Load Efficiency recorded in the GEMS Registry
	Geo-tagged photo of the existing motor	The photo must show the motor before and after it has been removed. Where possible, it should also show the make and model of the motor.
Installation requirements	Geo-tagged photo **and**	The photo must clearly show the motor in place at the site.
	Installer declaration **and**	ACPs must provide a declaration signed by the person who installed the motor. The declaration must include: ▼ the address of the site and date of installation ▼ the make and model of the motor, and ▼ a statement that the motor was installed according to the manufacturer's guidelines.
	Tax invoice[a] **or** CCEW[b] **or** Commissioning report[c]	The document must show: ▼ the make and model of the motor, and ▼ the address of the site where the motor was installed.

a The tax invoice must be for the installation of the motor.

b The CCEW must be signed and dated by the relevant licensed electrician.

c The report must be produced by the party responsible for the commissioning/completion of the installation.

Table 6.6 Minimum required records – for implementations of activity F8 and F9 – Replace an existing gas fired steam boiler, gas fired hot water boiler or gas fired water heater with a high efficiency gas fired steam boiler, gas fired hot water boiler or gas fired water heater

Requirement	Document	Description
Eligibility Requirements	Site assessment report	A site assessment report, signed by the installer or the original energy saver, declaring that: ▼ the building where the activity takes place is not a BCA Class 1 or 4 building (single dwelling, or single dwelling in a building) ▼ the existing boiler is more than 10 years old, and ▼ the existing boiler was in working order at the time of decommissioning.
Appliance details – existing equipment (gas fired steam boiler, hot water boiler or water heater)	Geo-tagged photo of the existing boiler/heater nameplate **and**	The photo must clearly show: ▼ the model number ▼ the serial number ▼ the age of the boiler/heater, and ▼ the nameplate capacity of the boiler/heater (refer to Appendix A for guidance on conversion to kW).
	Geo-tagged photo of the existing burner nameplate[a] **and**	The photo must clearly show: ▼ the age of the burner, and ▼ the fuel type.
	Manufacturer's data	The manufacturer's data must show: ▼ the type of equipment as a steam boiler, hot water boiler or water heater, and ▼ all other required information that is not clearly visible on the boiler/heater and burner nameplates (referenced using the model number).
Appliance details – replacement equipment (high efficiency gas fired steam boiler, hot water boiler or water heater)	Geo-tagged photo of the replacement boiler/heater nameplate **and**	The photo must clearly show: ▼ the model number ▼ the serial number, and ▼ the nameplate capacity of the boiler/heater (refer to Appendix A for guidance on conversion to kW).
	Geo-tagged photo of the replacement burner nameplate[a] **and**	The photo must clearly show: ▼ the age of the burner, and ▼ the fuel type.

Requirement	Document	Description
	Manufacturer's data **and**	The manufacturer's data must show: ▼ the type of equipment as a steam boiler, hot water boiler or water heater ▼ all other required information that is not clearly visible on the boiler and burner nameplates (referenced using the model number) ▼ for equipment with a nameplate capacity of 1,000 kW or higher, that the burner is of the linkageless type with a turndown ratio of at least 4:1 ▼ for equipment with a nameplate capacity of 2,000 kW or higher, that it includes an oxygen trim system, and ▼ the fuel-to-fluid efficiency of the equipment at high fire conditions.[b]
	Tax invoice	The tax invoice must show the make and model of the replacement boiler/heater. For replacement boilers/heaters with a nameplate capacity of 2,000 kW or higher, the tax invoice must itemise the boiler, the burner and oxygen trim system. If the burner and oxygen trim system are included in the boiler, the manufacturer's data must show this clearly.
Implementation requirements	Geo-tagged photo **and**	The photo must clearly show: ▼ the existing equipment (boiler/heater and burner) in place at the site before installation, and ▼ that the existing boiler/heater has been disconnected and removed.
	Installer declaration **or** Gas Certificate of Compliance (**GCC**)[c] **or** Commissioning report[d]	The document must be signed by the person who installed the equipment and include: ▼ the address of the site where the equipment was installed ▼ the date of installation ▼ the make and model of the equipment ▼ a statement that the existing equipment was disconnected and removed ▼ a statement that the replacement equipment was installed according to the manufacturer's guidelines, relevant equipment/installation standards and legislation, and ▼ if applicable, a statement that the replacement gas fired water heater is not a storage or instantaneous water heater as defined by AS/NZS 3814.

a If the burner does not have a nameplate because it is inbuilt to the boiler, the photograph must show that the burner is inbuilt and the boiler nameplate photograph must show the fuel type and the burner maximum firing rate or gas consumption. If information, such as fuel type, is not clearly visible on the boiler/heater nameplate photo, a different form of evidence must be provided to the satisfaction of the Scheme Administrator.

b Steam boilers must have a fuel-to-fluid efficiency of at least 80%, as defined by BTS-2000, ASME PTC 4 or equivalent standards. Hot water boilers and heaters must have a fuel-to-fluid efficiency of at least 85% at a return water temperature of 60°C. ACPs must have evidence that the efficiency test has been conducted by a qualified service provider.

c The GCC must be signed and dated by the relevant licensed gas fitter.

d The report must be produced by the party responsible for the commissioning/completion of the installation.

Table 6.7 Minimum required records – for implementations of activity F10 – Install an oxygen trim system on a gas fired steam boiler, hot water boiler or water heater

Requirement	Document	Description
Eligibility Requirements	Site assessment report	A site assessment report, signed by the installer or the original energy saver, declaring that: ▼ the building where the activity takes place is not a BCA Class 1 or 4 building (single dwelling, or single dwelling in a building), and ▼ there was no oxygen trim system installed on the existing boiler at the time of installation.
Appliance details – new equipment (oxygen trim system)	Geo-tagged photo of the oxygen trim system **and**	The photo must clearly show: ▼ the installed system's control panel, and ▼ the installed oxygen sensor.
	Manufacturer's data	The manufacturer's data must show the make and model of the equipment.
Appliance details – existing equipment (steam boiler, hot water boiler or water heater)	Geo-tagged photo of the boiler/heater nameplate **and**	The photo must clearly show: ▼ the model number ▼ the serial number, and ▼ the nameplate capacity of the boiler/heater (refer to Appendix A for guidance on conversion to kW).
	Geo-tagged photo of the burner nameplate[a] **and**	The photo must clearly show the fuel type.
	Manufacturer's data	The manufacturer's data must show: ▼ the type of equipment as a steam boiler, hot water boiler or water heater, and ▼ all other required information that is not clearly visible on the boiler/heater and burner nameplates (referenced using the model number).
Implementation requirements	Geo-tagged photo **and**	The photo must clearly show: ▼ the existing equipment (boiler/heater and burner) in place at the site before installation, and ▼ the location where the oxygen trim system will be installed (before installation).

Requirement	Document	Description
	Installer declaration **or** Gas Certificate of Compliance (**GCC**)[b] **or** Commissioning report[c]	The document must be signed by the person who installed the equipment and include: ▼ the address of the site where the equipment was installed ▼ the date of installation ▼ the make and model of the equipment ▼ the boiler/heater has a digital burner control system capable of receiving a signal from a flue gas sensor for oxygen trim purposes, and ▼ a statement that the equipment was installed according to the manufacturer's guidelines, relevant equipment/installation standards and legislation.

a If the burner does not have a nameplate because it is inbuilt to the boiler, provide a picture showing that the burner is inbuilt and ensure that the boiler nameplate photograph shows the fuel type and the burner maximum firing rate or gas consumption. If information, such as fuel type, is not clearly visible on the boiler nameplate photo, a different form of evidence must be provided to the satisfaction of the Scheme Administrator.

b The GCC must be signed and dated by the relevant licensed gas fitter.

c The report must be produced by the party responsible for the commissioning/completion of the installation.

Table 6.8 Minimum required records – for implementations of activity F11 – Replace burner on a gas fired steam boiler, hot water boiler or water heater

Requirement	Document	Description
Eligibility Requirements	Site assessment report	A site assessment report, signed by the installer or the original energy saver, declaring that: ▼ the building where the activity takes place is not a BCA Class 1 or 4 building (single dwelling, or single dwelling in a building), and ▼ the existing burner is in working order at the time of replacement.
Appliance details – replacement equipment (burner)	Geo-tagged photo of the replacement burner **and**	The photo must clearly show: ▼ the installed replacement burner, and ▼ the burner nameplate showing the nameplate capacity and fuel type.
	Manufacturer's data	The manufacturer's data must show: ▼ the make and model of the equipment, and ▼ that replacement burners with a nameplate capacity of 1,000kW or more are linkageless, have a turndown ratio of at least 4:1 and are capable of receiving a signal from a flue gas sensor for oxygen trim purposes.
Appliance details – existing equipment (burner on a steam boiler, hot water boiler or water heater)	Geo-tagged photo of the boiler/heater nameplate **and**	The photo must clearly show: ▼ the model number ▼ the serial number, and ▼ the nameplate capacity of the boiler/heater (refer to Appendix A for guidance on conversion to kW).
	Geo-tagged photo of the existing burner nameplate[a] **and**	The photo must clearly show: ▼ the age of the burner, and ▼ the fuel type.
	Manufacturer's data	The manufacturer's data must show: ▼ the type of equipment as a steam boiler, hot water boiler or water heater ▼ that the existing burner used mechanical linkages to control the air-to-fuel ratio, and ▼ all other required information that is not clearly visible on the boiler/heater and burner nameplates (referenced using the model number).
Implementation requirements	Geo-tagged photo **and**	The photo must clearly show the existing equipment (boiler/heater and burner) in place at the site before installation.

Requirement	Document	Description
	Installer declaration **or** Gas Certificate of Compliance (**GCC**)[b] **or** Commissioning report[c]	The document must be signed by the person who installed the equipment and include: ▼ the address of the site where the equipment was installed ▼ the date of installation ▼ the make and model of the equipment, and ▼ a statement that the equipment was installed according to the manufacturer's guidelines, relevant equipment/installation standards and legislation.

a If the burner does not have a nameplate because it is inbuilt to the boiler, provide a picture showing that the burner is inbuilt and ensure that the boiler nameplate photograph shows the fuel type and the burner maximum firing rate or gas consumption. If information, such as fuel type, is not clearly visible on the boiler nameplate photo, a different form of evidence must be provided to the satisfaction of the Scheme Administrator.

b The GCC must be signed and dated by the relevant licensed gas fitter.

c The report must be produced by the party responsible for the commissioning/completion of the installation.

Table 6.9 Minimum required records – for implementations of activity F12 – Install an economiser on a gas fired steam boiler, hot water boiler or water heater

Requirement	Document	Description
Eligibility Requirements	Site assessment report	A site assessment report, signed by the installer or the original energy saver, declaring that: ▼ the building where the activity takes place is not a BCA Class 1 or 4 building (single dwelling, or single dwelling in a building) ▼ there was no economiser installed on the existing boiler/heater at the time of installation, and ▼ if boiler feedwater is not used as the heat rejection line, another line is available for heat rejection at least 80% of the time.
Appliance details – new equipment (economiser)	Geo-tagged photo of the economiser **and**	The photo must clearly show: ▼ the installed economiser, and ▼ the boiler feedwater line entering the economiser or if boiler feedwater is not used as the heat rejection line, a design must be obtained showing which line will be used.
	Manufacturer's data	The manufacturer's data must show: ▼ the make and model of the equipment ▼ whether it is a condensing or non-condensing type, and ▼ that the economiser is capable of controlling minimum flow rates or running dry.
Appliance details – existing equipment (steam boiler, hot water boiler or water heater)	Geo-tagged photo of the boiler/heater nameplate **and**	The photo must clearly show: ▼ the model number ▼ the serial number, and ▼ the nameplate capacity of the boiler/heater (refer to Appendix A for guidance on conversion to kW).
	Geo-tagged photo of the burner nameplate[a] **and**	The photo must clearly show: ▼ the age of the burner, and ▼ the fuel type.
	Manufacturer's data	The manufacturer's data must show: ▼ the type of equipment as a non-condensing steam boiler, hot water boiler or water heater ▼ what the boiler/heater stack is constructed of (eg, carbon steel or stainless steel), and ▼ all other required information that is not clearly visible on the boiler and burner nameplates (referenced using the model number).

Requirement	Document	Description
Implementation requirements	Geo-tagged photo **and**	The photo must clearly show: ▼ the existing equipment (boiler/heater and burner) in place at the site before installation, and ▼ the location where the economiser will be installed on the boiler stack (before installation).
	Combustion test **and**	A combustion test report completed after the economiser is installed showing the stack temperature exiting the economiser whilst high firing.
	Installer declaration **or** Gas Certificate of Compliance (**GCC**)[b] **or** Commissioning report[c]	The document must be signed by the person who installed the equipment and include: ▼ the address of the site where the equipment was installed ▼ the date of installation ▼ the make and model of the equipment ▼ a statement that the economiser has been fitted with a control system with minimum flow rates such that manual intervention is not required for operation, unless it is specifically designed to run dry, and ▼ a statement that the equipment was installed according to the manufacturer's guidelines, relevant equipment/installation standards and legislation.

a If the burner does not have a nameplate because it is inbuilt to the boiler, provide a picture showing that the burner is inbuilt and ensure that the boiler nameplate photograph shows the fuel type and the burner maximum firing rate or gas consumption. If information, such as fuel type, is not clearly visible on the boiler nameplate photo, a different form of evidence must be provided to the satisfaction of the Scheme Administrator.

b The GCC must be signed and dated by the relevant licensed gas fitter.

c The report must be produced by the party responsible for the commissioning/completion of the installation.

Table 6.10 Minimum required records – for implementations of activity F13 – Install a sensor based blowdown control on a gas fired steam boiler

Requirement	Document	Description
Eligibility Requirements	Site assessment report	A site assessment report, signed by the installer or the original energy saver, declaring that: ▼ the building where the activity takes place is not a BCA Class 1 or 4 building (single dwelling, or single dwelling in a building), and ▼ that the steam boiler does not have an existing sensor based automatic blowdown control.
Appliance details – new equipment (sensor based blowdown control)	Geo-tagged photo of the new equipment **and**	The photo must clearly show the installed blowdown control system.
	Manufacturer's data	The manufacturer's data must show: ▼ the make and model of the equipment, and ▼ that the end-user equipment is a sensor-based blowdown control system capable of automatically blowing down based on a sensor reading of the concentration of total dissolved solids in the steam boiler.
Appliance details – existing equipment (steam boiler)	Geo-tagged photo of the boiler nameplate **and**	The photo must clearly show: ▼ the boiler model number ▼ the boiler serial number ▼ the boiler design pressure, and ▼ the nameplate capacity of the boiler (refer to Appendix A for guidance on conversion to kW).
	Geo-tagged photo of the burner nameplate[a] **and**	The photo must clearly show: ▼ the age of the burner, and ▼ the fuel type.
	Manufacturer's data	The manufacturer's data must show: ▼ the type of boiler as a steam boiler, and ▼ all other required information that is not clearly visible on the boiler and burner nameplates (referenced using the boiler model number).

Requirement	Document	Description
Implementation requirements	Geo-tagged photos **and**	The photos must clearly show: ▼ the existing equipment (boiler and burner) in place at the site before installation ▼ the boiler operating pressure, and ▼ that the steam boiler did not have an existing sensor based automatic blowdown control system (before installation).
	Installer declaration **or** Gas Certificate of Compliance (**GCC**)[b] **or** Commissioning report[c]	The document must be signed by the person who installed the equipment and include: ▼ the address of the site where the equipment was installed ▼ the date of installation ▼ the make and model of the equipment, and ▼ a statement that the equipment was installed according to the manufacturer's guidelines, relevant equipment/installation standards and legislation.

a If the burner does not have a nameplate because it is inbuilt to the boiler, provide a picture showing that the burner is inbuilt and ensure that the boiler nameplate photograph shows the fuel type and the burner maximum firing rate or gas consumption. If information, such as fuel type, is not clearly visible on the boiler nameplate photo, a different form of evidence must be provided to the satisfaction of the Scheme Administrator.

b The GCC must be signed and dated by the relevant licensed gas fitter.

c The report must be produced by the party responsible for the commissioning/completion of the installation.

Table 6.11 Minimum required records – for implementations of activity F14 – Install a blowdown flash steam heat recovery system on a gas fired steam boiler

Requirement	Document	Description
Eligibility Requirements	Site assessment report	A site assessment report, signed by the installer or the original energy saver, declaring that: ▼ the building where the activity takes place is not a BCA Class 1 or 4 building (single dwelling, or single dwelling in a building) ▼ that the steam boiler has, or will have, an existing sensor based blowdown control, in working order, installed at the time of commissioning of the blowdown flash steam heat recovery system, and ▼ that the steam boiler does not have an existing blowdown flash steam heat recovery system.
Appliance details – new equipment (blowdown flash steam heat recovery system)	Geo-tagged photo of the new equipment **and**	The photo must clearly show the installed flash steam heat recovery system (flash vessel and sub-surface sparge line).
	Manufacturer's data **and**	The manufacturer's data must show: ▼ the make and model of the equipment, and ▼ that the end-user equipment is a flash steam heat recovery system (flash vessel and sub-surface sparge line).
Appliance details – existing equipment (steam boiler)	Geo-tagged photo of the boiler nameplate **and**	The photo must clearly show: ▼ the boiler model number ▼ the boiler serial number ▼ the boiler design pressure, and ▼ the nameplate capacity of the boiler (refer to Appendix A for guidance on conversion to kW).
	Geo-tagged photo of the burner nameplate[a] **and**	The photo must clearly show: ▼ the age of the burner, and ▼ the fuel type.
	Manufacturer's data	The manufacturer's data must show: ▼ the type of boiler as a steam boiler, and ▼ all other required information that is not clearly visible on the boiler and burner nameplates (referenced using the boiler model number).

Requirement	Document	Description
Implementation requirements	Geo-tagged photos **and**	The photos must clearly show: ▼ the existing equipment (boiler and burner) in place at the site before installation ▼ the boiler operating pressure ▼ the existing or new sensor-based blowdown control showing that it is in working order, and ▼ the location where the flash steam heat recovery system will be installed showing that the steam boiler did not have an existing flash steam heat recovery system (before installation).
	Installer declaration **or** Gas Certificate of Compliance (**GCC**)[b] **or** Commissioning report[c]	The document must be signed by the person who installed the equipment and include: ▼ the address of the site where the equipment was installed ▼ the date of installation ▼ the make and model of the equipment, and ▼ a statement that the equipment was installed according to the manufacturer's guidelines, relevant equipment/installation standards and legislation.

a If the burner does not have a nameplate because it is inbuilt to the boiler, provide a picture showing that the burner is inbuilt and ensure that the boiler nameplate photograph shows the fuel type and the burner maximum firing rate or gas consumption. If information, such as fuel type, is not clearly visible on the boiler nameplate photo, a different form of evidence must be provided to the satisfaction of the Scheme Administrator.

b The GCC must be signed and dated by the relevant licensed gas fitter.

c The report must be produced by the party responsible for the commissioning/completion of the installation.

Table 6.12 Minimum required records – for implementations of activity F15 – Install a residual blowdown heat exchanger on a gas fired steam boiler

Requirement	Document	Description
Eligibility Requirements	Site assessment report	A site assessment report, signed by the installer or the original energy saver, declaring that: ▼ the building where the activity takes place is not a BCA Class 1 or 4 building (single dwelling, or single dwelling in a building) ▼ that the steam boiler has, or will have, an existing sensor based blowdown control, in working order, installed at the time of commissioning of the blowdown flash steam heat recovery system, ▼ that the steam boiler does not have an existing residual blowdown heat exchanger, and ▼ that a fluid stream below 40°C will be available at all times to transfer heat from the boiler blowdown.
Appliance details – new equipment (residual blowdown heat exchanger)	Geo-tagged photo of the new equipment **and**	The photo must clearly show the installed heat exchanger connected to a cold fluid stream.
	Manufacturer's data	The manufacturer's data must show: ▼ the make and model of the equipment, and ▼ that the end-user equipment is a residual blowdown heat exchanger.
Appliance details – existing equipment (steam boiler)	Geo-tagged photo of the boiler nameplate **and**	The photo must clearly show: ▼ the boiler model number ▼ the boiler serial number ▼ the boiler design pressure, and ▼ the nameplate capacity of the boiler (refer to Appendix A for guidance on conversion to kW).
	Geo-tagged photo of the burner nameplate[a] **and**	The photo must clearly show: ▼ the age of the burner, and ▼ the fuel type.
	Manufacturer's data	The manufacturer's data must show: ▼ the type of boiler as a steam boiler, and ▼ all other required information that is not clearly visible on the boiler and burner nameplates (referenced using the boiler model number).

Requirement	Document	Description
Implementation requirements	Geo-tagged photos **and**	The photos must clearly show: ▼ the existing equipment (boiler and burner) in place at the site before installation ▼ the boiler operating pressure ▼ the existing, or new, sensor-based blowdown control showing that it is in working order, and ▼ the location where the residual blowdown heat exchanger will be installed showing that the steam boiler did not have an existing heat exchanger (before installation).
	Installer declaration **or** Gas Certificate of Compliance (**GCC**)[b] **or** Commissioning report[c]	The document must be signed by the person who installed the equipment and include: ▼ the address of the site where the equipment was installed ▼ the date of installation ▼ the make and model of the equipment ▼ that the residual blowdown heat exchanger was installed such that it transfers heat from the steam boiler's blowdown fluid to a fluid stream of less than 40°C, and ▼ a statement that the equipment was installed according to the manufacturer's guidelines, relevant equipment/installation standards and legislation.

a If the burner does not have a nameplate because it is inbuilt to the boiler, provide a picture showing that the burner is inbuilt and ensure that the boiler nameplate photograph shows the fuel type and the burner maximum firing rate or gas consumption. If information, such as fuel type, is not clearly visible on the boiler nameplate photo, a different form of evidence must be provided to the satisfaction of the Scheme Administrator.

b The GCC must be signed and dated by the relevant licensed gas fitter.

c The report must be produced by the party responsible for the commissioning/completion of the installation.

7 Glossary

Words which are defined in the ESS Rule and which are used in this Method Guide have the same meaning in this Method Guide as in the ESS Rule, unless the context requires otherwise.

Term	Definition
Accreditation Notice	The accreditation notice issued by the Scheme Administrator to an ACP stating the conditions that apply to the ACP's accreditation
ACP	Accredited Certificate Provider
Act	*Electricity Supply Act 1995* (NSW)
Activity Definition	Refer to Section 3.4 of this document
End-User Equipment	The electricity or gas consuming equipment, processes and systems and other equipment or products that cause, control or influence the consumption of electricity or gas.
Energy Saver	Refer to Section 3.1 of this document
ESC	Energy Savings Certificate
ESS	Energy Savings Scheme
ESS Rule	Energy Savings Scheme Rule of 2009
GEMS	Greenhouse and Energy Minimum Standards
Implementation	Refer to section 3.2 of this document
Implementation Date	Refer to section 3.2 of this document
MEPS	Minimum Energy Performance Standards
New End-User Equipment	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).
NSW	New South Wales
Purchaser	Refer to section 3.1 of this document
Regulation	*Electricity Supply (General) Regulation 2014* (NSW)
RESA	Recognised Energy Saving Activity
Residual Blowdown	When blowdown from a steam boiler depressurises, it separates into flash steam and hot liquid. Residual blowdown refers to the liquid fraction that can then be passed through a heat exchanger.
Site	The location of the End-User Equipment included in a RESA, as defined by: ▼ an address, or ▼ a unique identifier, as specified for the relevant Implementation that identifies the affected End-User Equipment, or ▼ a method accepted by the Scheme Administrator.

Appendices

A Converting steam output to kW

For gas activities, the deemed equipment gas savings requires the nameplate capacity of the boiler/heater (boiler rating) in kW. If the boiler/heater capacity is shown as 'steam output (kg/h)' or similar it should be converted to kW rating using the following conversion:

- Multiply the steam output by the difference between the specific enthalpy of saturated steam at the boiler maximum pressure and the specific enthalpy of feedwater at 100°C and atmospheric pressure.
- Multiply the result by the corresponding unit conversion factor to convert energy units to kW.

An example is provided in Box A.1.

Box A.1 Boiler capacity conversion example

Consider the following boiler nameplate data:

Capacity (steam output) : 7,960 (kg/h)

Maximum pressure : 17 (bar)

Calculate the boiler kW rating using the following steps:

1) Specific enthalpy of saturated steam @ 17 bar = 2,793 (kJ/kg) (from saturated steam tables)

2) Specific enthalpy of water @ 100°C and 1 bar = 419 (kJ/kg) (from saturated steam tables)

3) Boiler capacity (energy) = 7,960 (kg/h) x (2,793 – 419) (kJ/kg)

= 18,897,040 (kJ/h)

4) Boiler capacity (power) = 18,897,040 (kJ/h) / 3600 (s/h)

= 5,249 (kW) [a]

a 1 kW = 1 kJ/s