Creating ESCs from Lighting Upgrades

Training Module for the Energy Efficiency for Businesses Aggregation (EEBA) Project under the IHEAB Method

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Purpose of training:

To ensure that all participants in the NSW Energy Savings Scheme are aware of their roles and responsibilities so as to deliver the Scheme's aims in a professional, fair, accurate and transparent manner in line with the Scheme requirements.

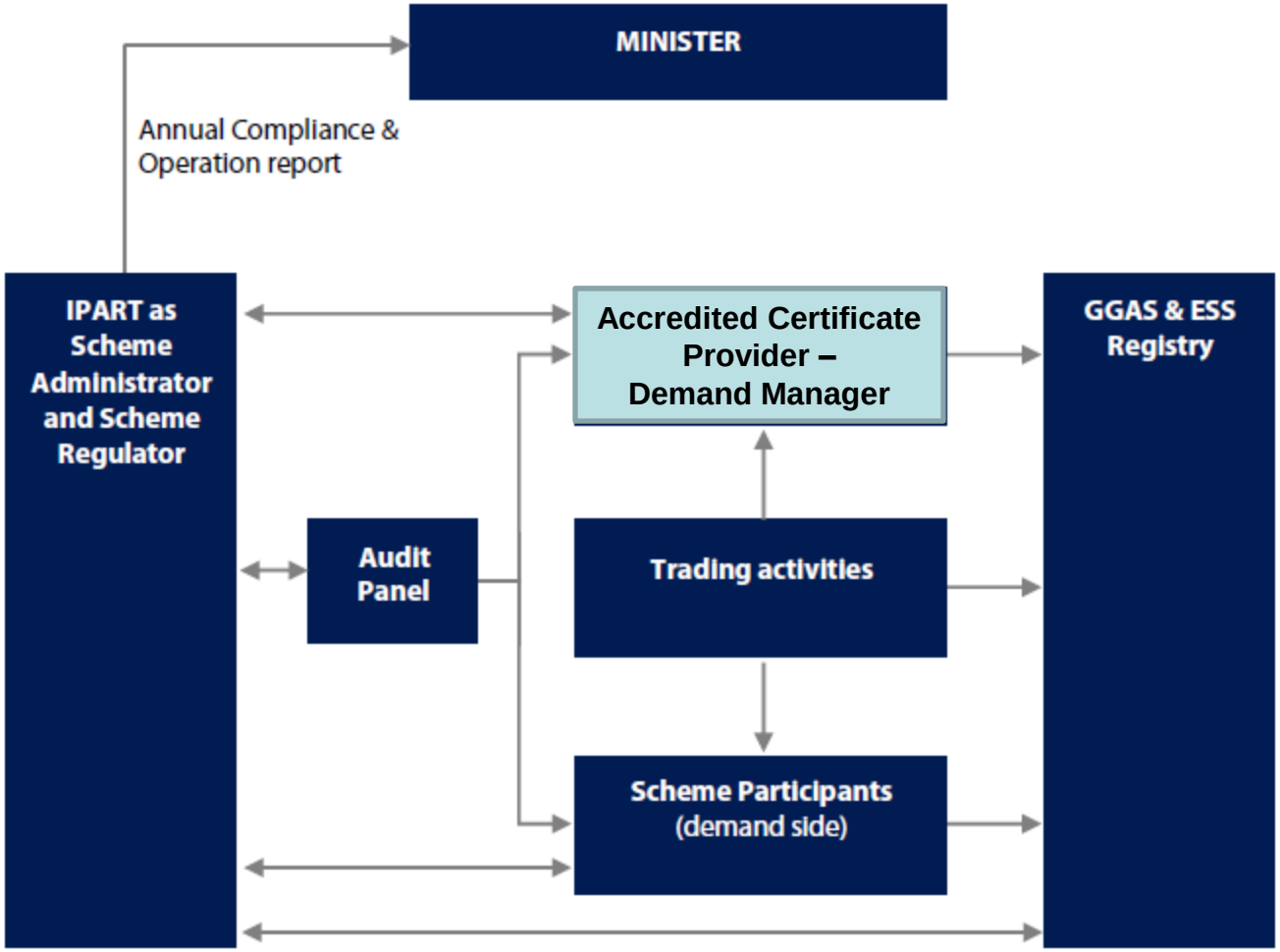
Contents:

1. Introduction to Demand Manager
2. Introduction to the NSW Energy Savings Scheme
3. The Energy Efficiency for Businesses Aggregation Project
4. Customer Engagement with End Users
5. Required qualifications and training
6. Quality Assurance

1. About Demand Manager

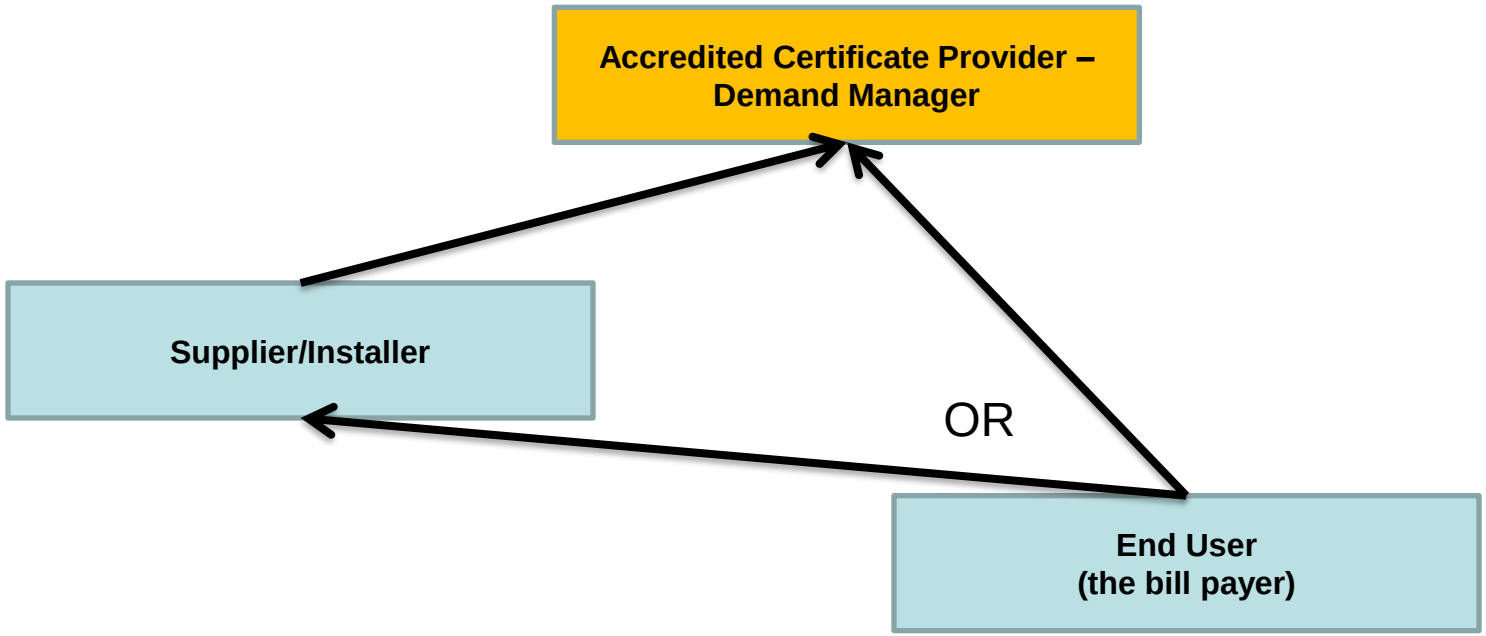
- Launched in 2005 to help Australian businesses deliver sustainable energy and water outcomes.
- Is involved in a range of State and Federal Government sustainability programs, including the NSW Energy Savings Scheme (ESS).
- Is an Accredited Certificate Provider (ACP) under the ESS which permits the creation of Energy Savings Certificates (ESCs).
- Is subjected to regular ESS audits to ensure compliance, hence a strong focus on QA.

1. About Demand Manager



1. About Demand Manager

Demand Manager can work directly with the End User or with a supplier or installer



For further details of tasks and responsibilities of parties involved refer to Section 4 and 5 of this document as well as the supplementary Customer Engagement document.

2. Energy Savings Scheme

- NSW based voluntary energy efficiency scheme.
- Commenced on 1 July 2009.
- Based on the creation and trading of Energy Saving Certificates (ESCs).
- One ESC represents 1 MWh of electricity saved.
- ESCs can only be created by Accredited Certificate Providers (ACPs).
- Demand Manager is an ACP with a number of accreditations including for the IHEAB Method.
- The legal framework for the ESS is established in the ESS Rule and the Electracy Supply Act and General Regulations.

2. Energy Savings Scheme

- Market for ESCs is created by targets set for electricity retailers in NSW.
- Price fluctuates according to supply and demand – Refer to www.demandmanager.com.au/certificate-prices/
- ESCs have a “Vintage” according to year created – different Vintage ESCs may have a different value.
- Projects are not provided, operated or delivered as a mandatory program on behalf of NSW Gov.

2. Energy Savings Scheme

- ACPs are audited and adverse findings can result in forfeiture of ESCs and/or penalties up to $220,000.
- The Nomination Form is the legal instrument which transfers ownership of any right to create ESCs to Demand Manager and it has to be made clear to End Users how this process works and what they are signing.
- The use of the Scheme logo is not permitted by ACPs or product/service providers.

2. Energy Savings Scheme

ESS Targets:

2015	5.0%
2016	7.0%
2017	7.5%
2018	8.0%
2019-2025	8.5%

3. DM's Energy Efficiency for Businesses Aggregation Project

- DM is accredited under the ESS for the Implementation of High Efficient Appliances (IHEAB) Method.
- The accreditation permits us to use the Deemed Energy Savings Method to create certificates for activities outlined in Schedule F of the Energy Savings Scheme Rule.
- An activity cannot result in a reduction in production or service levels and must not be undertaken to comply with a mandatory legal requirement.
- An activity that increases the efficiency of gas consumption cannot also result in the flaring of gas.
- A fuel switching activity is ineligible if it results in a net increase in greenhouse gas emissions.

3. DM's Small Business Lighting Aggregation Project

DM undertakes the following activities:

- Adhering to Record Keeping Responsibilities;
- Applying the correct calculation methodologies;
- Verifying all necessary evidence is obtained;
- Submitting registration data into the ESS Portal;
- Subjecting our process and records to internal and external quality assurance audits. This involves desktop reviews, phone surveys and site visits.

3. Specific Requirements

- The exact requirements for IHEAB upgrades are outlined in IPART's IHEAB Method Guide which is available from the ESS website (http://www.ess.nsw.gov.au/).
- DM recommends customers to closely read through these requirements.
- In order to simplify the data collection process DM has developed a tablet (or smart phone) based App called Lightwork. Training will be provided to users by DM.
- Below follows an outline of the main activity requirements and matters to consider.

3a. Activity evidence requirements

Activity	Description	CCEW or GCC	Tax Invoice	Saled Ledger/Bank Statement	Nomination Form	Installer Declaration	Site Assessment Report	Spreadsheet / Calculation Tool	GEMS Registration Confirmation	IPART Acceptance	Geotagged Photos of Appliance in Place at Site	Manufacturer's Data of New Equipment	Manufacturer's Data of Existing Equipment	Geotagged Photos of New Equipment	Geotagged Photos of Existing Equipment	Geotagged Photos of Controlled Unit	Process System Information	Combustion Test
F1.2	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 moto	√	√		√	√		√	√			√	√		√		√	
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	√	√		√	√	√	√			√	√	√	√	√			
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	√	√		√	√	√	√			√	√	√	√	√			
F16	Replace one or more existing hot water boilers or water heaters with one ore more air source heat pump water heater systems	√	√	√	√	√	√	√		√	√	√	√	√	√			
F17	Install one or more air source heat pump water heater systems	√	√	√	√	√		√		√	√	√	√	√				

3b. Nomination Form

- This is a standard template provided by IPART.
- Legal document which enables Demand Manager to create ESCs on behalf of the End-User.
- Must be in the prescribed format with a statement nominating Demand Manager.
- Form must be signed by the End-User **BEFORE** an installation is completed.
- The signee must have legal power to sign on behalf of the Original Energy Saver.
- The signee must be the purchaser of the new equipment **and** have ongoing benefits from the lighting upgrade.
- The End User must be provided with a signed copy.

3c. Other templates

In addition to the Nomination Form, the following documents are to be used.

- Site Assessment Report: Report signed by the original energy saver, or the installer, for gas saving activities F8-F15. It confirms that the existing equipment is based at an eligible BCA Class building, that it is in working order, and that other eligibility requirements specified in Schedule F of the ESS Rule are met.
- Installer Declaration: Declaration by the installer confirming that the installed equipment meets the requirements specified in Schedule F of the ESS Rule. This applies to activities F5-F15.

3d. Photographic Evidence

- Photos are an important source of evidence.
- Photos should be clear and relevant.
- Photographs are to clearly show equipment in place prior and post upgrade.
- Photos of equipment must clearly show the make, model and nameplate of the equipment.
- Photos are to be date-stamped and include geotag data showing the exact location where a photo was taken.

3e. Acceptance of Technologies

- For activities F1-F4 the new equipment needs to be listed in the GEMS Register. https://reg.energyrating.gov.au/comparator/product_types/
- Technologies implemented under activities F16+F17 need to be accepted by the Scheme Administrator prior to implementation. A list or accepted technologies will be made available by IPART.

3f. Removal of old equipment

- 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.

3j. Activity Specific Requirements

Activity Definition F1.2

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 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 (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 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 4 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.

3j. Activity Specific Requirements

Activity Definition	F2 INSTALL A NEW HIGH EFFICIENCY LIQUID CHILLING PACKAGE
Equipment Requirements	1. The End User Equipment must be a Liquid Chilling Package (LCP) registered under GEMS and comply 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 of the ESS Rule.
Installation Requirements	1. The LCP must be installed

Activity Definition	F3 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 under GEMS and comply 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 of the ESS Rule.
Installation Requirements	1. The CCAC must be installed.

3j. Activity Specific Requirements

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.
2. For the purposes of clause 9.9.1(d), the New or replacement End-User Equipment must not be installed in a Residential Building 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.
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 corresponding Product Type and Cooling Capacity 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 Product Type and Cooling Capacity in Table F4.5.
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 Type and Cooling Capacity 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 aRated ACOP in the GEMS Registry equal to or greater than the Minimum Rated ACOP for the same Product Type and Cooling Capacity in Table F4.5.
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 Type and Cooling Capacity 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 Type and Cooling Capacity in Table F4.5.

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.

3j. Activity Specific Requirements

Activity Definition	F5 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 (m3/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.
Installation 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 2019, 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.

3j. Activity Specific Requirements

Activity Definition	F6 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 (m3/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
Installation 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.

Activity Definition	F7 NSTALL A NEW 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.
Installation Requirements	1. The electric motor must be installed. 2. The electric motor must have a rated output from 0.73kW to <185kW.

3j. Activity Specific Requirements

Activity Definition	F8 REPLACE EXISTING GAS FIRED STEAM BOILER WITH A NEW HIGH EFFICIENCY GAS FIRED STEAM BOILER
Equipment Requirements	1. The existing End-User Equipment must be a single, or multiple, Gas fired steam boiler(s) as defined in AS/NZS 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.
Installation Requirements	1. The replacement End-User Equipment must be a new single, or multiple, Gas fired steam boiler(s) as defined in AS/NZS 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.

3j. Activity Specific Requirements

Activity Definition	F9 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
Equipment 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/NZS 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.
Installation 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/NZS 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 AS4552 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.

3j. Activity Specific Requirements

Activity Definition	**F10 INSTALL AN OXYGEN TRIM SYSTEM ON A GAS FIRED STEAM BOILER, HOT WATER BOILER OR WATER HEATER**
Equipment 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/NZS 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.
Installation 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.

3j. Activity Specific Requirements

Activity Definition	F11 REPLACE BURNER ON A GAS FIRED STEAM BOILER, HOT WATER BOILER, OR WATER HEATER
Equipment Requirements	1. The existing End-User Equipment must be a Gas fired burner as defined in AS/NZS 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/NZS 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.
Installation Requirements	1. The replacement End-User Equipment must be a Gas fired burner as defined in AS/NZS 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.

3j. Activity Specific Requirements

Activity Definition	F12 INSTALL AN ECONOMISER ON A GAS FIRED STEAM BOILER, HOT WATER BOILER, OR WATER HEATER
Equipment 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/NZS 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.
Installation 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 noncondensing 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.

3j. Activity Specific Requirements

Activity Definition	F13 INSTALL A SENSOR BASED BLOWDOWN CONTROL ON A GAS FIRED STEAM BOILER
Equipment Requirements	1. The End-User Equipment must be installed on a Gas fired steam boiler as defined in AS/NZS 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.
Installation 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 specified by the Scheme Administrator.

Activity Definition	F14 INSTALL A BLOWDOWN FLASH STEAM HEAT RECOVERY SYSTEM ON GAS FIRED STEAM BOILER
Equipment Requirements	1. The End-User Equipment must be installed on a single, or multiple, Gas fired steam boiler(s) as defined in AS/NZS 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.
Installation 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.

3j. Activity Specific Requirements

Activity Definition	F15 INSTALL A RESIDUAL BLOWDOWN HEAT EXCHANGER ON GAS FIRED STEAM BOILER
Equipment Requirements	1. The End-User Equipment must be installed on single, or multiple, Gas fired steam boiler(s) as defined in /NZS 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.
Installation 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.

3j. Activity Specific Requirements

Activity Definition	F15 INSTALL A RESIDUAL BLOWDOWN HEAT EXCHANGER ON GAS FIRED STEAM BOILER
Equipment Requirements	1. The End-User Equipment must be installed on single, or multiple, Gas fired steam boiler(s) as defined in /NZS 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.
Installation 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.

3j. Activity Specific Requirements

Activity Definition	F16 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: o 60% when modelled in climate zone HP3-AU if the Site is in BCA Climate Zone 2, 3, 4, 5 or 6; o 60% when modelled in climate zone HP5-AU if the Site is in BCA Climate Zone 7 or 8; 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.
Installation 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 license holder in compliance with the relevant standards and legislation.

3j. Activity Specific Requirements

Activity Definition	F17 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	2. The New End-User Equipment must be an air source heat pump water heater as defined by AS/NZS 4234. 3. 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 climate zone HP3-AU if the Site is in BCA Climate Zone 2, 3, 4, 5 or 6; b. 60% when modelled in climate zone HP5-AU if the Site is in BCA Climate Zone 7 or 8. 4. 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.
Installation 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 license holder in compliance with the relevant standards and legislation.

4. Customer Engagement with End Users

- DM is responsible for all activities that are related to the creation of ESCs under our accreditation.
- This includes activities conducted by DM staff and activities conducted by third party representatives (e.g. suppliers, installers, energy efficiency consultants, salespeople etc.).
- Representative must be aged 18 years or over (unless they are an apprentice supervised by a licensed installer) and must be:
  - An employee of DM; or
  - A direct contractor of DM; or
  - An employee of another company that has a legally binding contract with DM; or
  - A contractor of another company that has a legally binding contract with DM.

4. Customer Engagement with End Users

- DM is required to have a Contractual Agreement in place with representatives undertaking aspects of an energy efficiency upgrade (e.g. suppliers and installers).
- This Contractual Agreement is to be signed prior to a representative conducting activities under DM's Accreditation.
- DM must maintain a register of representatives.
- Representatives must be aware of their responsibilities under the ESS and DM's Accreditation and will be provided with information/training by DM.
- The guidelines outlined on the following slides apply to the engagement with customers.

4. Customer Engagement with End Users

- Principles of openness, transparency and honesty.
- Explain the contents and function of the Nomination Form.
- All parties directly dealing with End Users are expected to adhere to, and to inform the customers about, the following matters:
- This is not a mandatory scheme;
- Don’t present yourself as a representative of the ESS, IPART or the NSW Government;

4. Customer Engagement with End Users

- Products are not endorsed or recommended by the NSW Government;
- Outline the different parties involved and their roles (e.g. the ACP DM);
- Explain and demonstrate the installation process and functioning of the implemented technologies;
- Fix issues upon request by the End User;
- Technologies need to be implemented and working, not just supplied.
- Do not misrepresent the services being undertaken;

4. Customer Engagement with End Users

- Explain that IPART or ESS auditors may request information to verify that ESCs are properly created, or to obtain access to site to verify the physical installation;
- Provide full assistance to such requests;
- Representatives (e.g. installers) need to appropriately identify themselves (photo ID);
- Explain the process to be followed when customers are not satisfied (e.g. contact details);
- Provide contact details of Demand Manager (e.g. on the Nomination Form).

5. Training and qualification requirements

Representatives involved in energy efficiency upgrades must be appropriately trained (prior to performing any activities under the ESS) and have appropriate qualifications. This includes:

- Completing this training;
- Receiving instructions on how to use Lightwork (where relevant);
- Be a licensed installer;
- Representatives must implement each energy efficiency upgrade in such a way, that it complies with the Electricity Supply Act 1995, the Electricity Supply (General) Regulation 2014 and the ESS Rule.

5. Training and qualification requirements

Representatives must comply with all legislative or regulatory requirements that are relevant to performing their role, and to the equipment they install. This may include but is not limited to:

- Telemarketing, door-to-door sales and consumer rights under the Australian Consumer Law;
- Protection of Privacy and Information (Privacy and Personal Information Protection Act 1998 and the Privacy and Personal Information Protection Regulation 2014);
- WH&S regulations (Work Health and Safety Act 2019 and Work Health and Safety Regulations 2017);
- The Gas and Electrical (Consumer Safety) Act 2017 and Gas and Electrical (Consumer Safety) Regulation 2018;
- Any other relevant statutory requirements.

6. Quality Assurance

Demand Manager has an internal quality assurance procedure to help ensure that the ESCs that are created are legitimate and correct. This process may include:

- Reviewing paperwork and crosschecking information (Desktop Review).
- Telephone surveys of the Original Energy Savers.
- Site visits.

Demand Manager is also periodically audited by third party auditors who may conduct:

- Reviews of paperwork and the crosschecking of information.
- Telephone surveys or email surveys of select jobs asking questions to the Original Energy Savers.
- Site visits on select jobs to confirm that claims made are in line with the actual physical installation and that real savings are occurring.

Demand Manager

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