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Government of South Australia

Department for Energy and Mining

CONSULTATION PAPER ON PROPOSED RETAILER ENERGY PRODUCTIVITY SCHEME (REPS) ACTIVITIES, CREDITS AND TARGETS

September 2020

Glossary

BaU	Business as Usual
COAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEM	Department for Energy and Mining
DR	Demand Response
EV	Electric Vehicle
ESCOSA	Essential Services Commission of South Australia
GJ	Gigajoules
GEMS	Greenhouse and Energy Minimum Standards
HVAC	Heating, Ventilation and Air Conditioning
MEPS	Minimum Energy Performance Standards
NABERS	National Australian Built Environment Rating System
NatHERS	Nationwide House Energy Rating Scheme
REES	Retailer Energy Efficiency Scheme
REPS	Retailer Energy Productivity Scheme
RIS	Regulatory Impact Statement
TOU	Time of Use
VPP	Virtual Power Plant

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About the consultation

It is proposed that the Retailer Energy Productivity Scheme (REPS) will replace the current Retailer Energy Efficiency Scheme (REES) from 1 January 2021.

This Consultation paper invites stakeholder feedback on proposed activity and method specifications, credits and targets proposed to apply under the REPS.

The Department for Energy and Mining (DEM) will host a stakeholder Q&A webinar during the consultation period. To register your interest, please email DEM.REES@sa.gov.au.

Written submissions on matters raised in this paper are invited via email by 9 October 2020 to DEM.REES@sa.gov.au.

All submissions will be uploaded on to the government's webpage www.sa.gov.au/energy/rees.

DEM is an agency for the purposes of Freedom of Information laws. While DEM will not publish your submission on our website if you do not want this, we may be required by law to release your submission to a third party. Should such a request be made, you will be contacted prior to any decision to release the material.

1. Background

The Retailer Energy Efficiency Scheme (REES) is scheduled to conclude on 31 December 2020. A REES review process has been completed to assist with the design of a new scheme, the Retailer Energy Productivity Scheme (REPS) which is proposed to commence 1 January 2021.

To date, stakeholder engagement has been undertaken through release of the following:

- Issues paper – released April 2019
- Independent evaluation – released July 2019
- Direction paper – released October 2019
- Final review report – released February 2020
- Draft amendments to the *Electricity Act 1996* and the *Gas Act 1997* – released March 2020
- REPS regulatory framework consultation paper – released June 2020

This consultation paper provides further details on the proposed eligible REPS activities and seeks feedback on potential targets for the scheme 2021-2025.

2. Introduction

The South Australian REES Review Report, which was tabled in Parliament on 5 February 2020, recommends that South Australia should continue to have a scheme from 2021.

The Review noted that South Australia's load profile and supply mix has changed with the high uptake of distributed energy resources and large-scale renewable energy.

The Review found that significant customer and system benefits can be achieved through optimisation of energy use. It was therefore recommended a new scheme objective be defined as to *'improve energy productivity for households, businesses and the broader energy system, with a focus on low-income households. This will also reduce energy costs and greenhouse gas emissions.'*

It is proposed that regulations will be drafted under the *Electricity Act 1996* and the *Gas Act 1997* to give effect to the REPS.

It is proposed that the REPS will support energy demand management and demand response activities, as well as energy efficiency activities in homes and businesses. The REPS will comprise two consecutive five-year stages, commencing 1 January 2021.

This consultation paper has been informed by two consultancies:

- Common Capital modelled the costs and benefits of various policy options for the REPS and considered the comparative costs and benefits of three different target sizes *(Independent Evaluation Past performance and future policy options for the Retailer Energy Efficiency Scheme (REES), 11 July 2019)*
- Energy Efficient Strategies, with Common Capital and Beletich Associates developed a suite of activities, methods and credits that could apply in the REPS from 1 January 2021.

Key questions that DEM is seeking feedback on are highlighted in Section 5.

3. Feedback on Consultation Paper on Proposed REPS Regulatory Framework and Activities

The 'Consultation Paper on Proposed Retailer Energy Productivity Scheme Regulatory Framework and Activities, June 2020' was distributed for comment to stakeholders. Based on feedback, several amendments will be made to the proposed framework:

- The definition of a priority group rental property has been clarified. Only rental properties with rents of $500 per week or less rent will be considered to the within the priority group. This change was made in response to several submissions that argued that many rentals are not low income, and higher income renters should not be eligible for the proposed exemption of priority group members from activity co-payment requirements.
- The regulations will now permit surplus credits that were earned in priority group households in 2020 to be counted toward priority group targets in 2021 up to a maximum of 20 per cent of the 2021 priority group target. Previously it was proposed that carryover credits could only be counted towards the Energy Productivity Target, not toward a sub target.
- Several stakeholders argued that the top-up insulation activity from the REES should be carried over into REPS as it may be of specific relevance for lower income households. It is proposed that the REPS will include this as an eligible activity.
- The regulations will make explicit that the new requirements for disclosure and transparency of scheme costs will not include any information that will publicly identify specific activity providers.
- Other stakeholders raised concerns that the proposals in the regulatory framework consultation paper would not go far enough to promote deeper energy retrofits in lower income households, and particularly rental properties. This paper provides further information on this issue and proposes a sub-target to the priority group target, to deliver specific deeper retrofit activities to priority group households.
- One retailer did not support the proposal that under the first five years of REPS there would be no designated purchases excluded from the calculation of the obligation threshold, and from the apportioned targets for each retailer. Other respondents were either neutral on this issue, or supported this proposal as outlined in the June consultation paper. The government's view remains that, because the REPS will no longer include a specific focus on smaller businesses, there is no rationale for REPS to permit netting out of large loads from obligation thresholds or targets.

4. Potential REPS targets

It is proposed that the REPS will require the Minister by notice in the Gazette to set annual energy productivity targets.

The targets will be expressed as the annual amount of REPS credits that must be achieved by retailers through the carrying out of energy productivity activities. It is proposed that the format for all targets should be normalised gigajoules (GJs).

The Minister will gazette annual energy productivity targets relating to each of the following five-year periods:

- 2021, 2022, 2023, 2024, 2025
- 2026, 2027, 2028, 2029, 2030

For the REES 2018- 2020 the target was set as 6.9 million GJs. This was increased from the previous stage 2015-2017 (5.2 million GJs).

Consultants Common Capital modelled costs and benefits of potential target scenarios (*Independent Evaluation, Past performance and future policy options for the REES, 11 July 2019*) over 30 years to 2050.

The modelling indicated a continuation of the REES from 2021 would deliver from $126 to $320 million in net benefits to the South Australian economy, while delivering between $1.3 billion and $3.1 billion in energy bill savings for the South Australian households and businesses.

The options with the highest public benefit were those that increased scheme targets and focussed on activities that either reduce or shift load at times of the day where there are energy system challenges. The modelling found strong public benefits for energy savings at peak times, load shifting activities and general energy efficiency activities. The modelling analysed seven different scheme design options for the REPS, and quantified costs and benefits against three different target sizes:

- same as the current REES (BaU)
- 50 per cent increase on BaU
- 100 per cent increase on BaU

For the scheme scenarios that support energy demand management and demand response activities, as well as energy efficiency activities in homes and businesses, the modelling indicated the following.

REPS credits normalised for household and business energy savings at peak times

Target Size	Net public benefits ($million)	Benefit Cost Ratio
Same as current REES (BaU)	153	3.7
50% increase on BaU	231	3.5
100% increase on BaU	308	3.3

REPS credits normalised for load shifting

Target Size	Net public benefits ($million)	Benefit Cost Ratio
Same as current REES (BaU)	138	2.6
50% increase on BaU	209	2.6
100% increase on BaU	282	2.6

A key criterion in proposing a target for 2021-2025 will be containing the costs that energy retailers will pass onto households and businesses to fund the scheme. Previous investigations have estimated direct annual costs to typical residential customers of approximately $12 - $14 and annual total scheme costs of approximately $10 million.[1]

The Common Capital evaluation report found that the REES was relatively cost efficient when compared to schemes of comparable size and sectoral coverage. Comparing obligation schemes across Australia is complicated by differing scheme metrics and attributes, however the target size in the REES has been significantly smaller on a per capita basis than the schemes in NSW and Victoria.

[1] For example, see Pitt and Sherry 'Evaluation of the SA REES, 2013', Common Capital 'Independent Evaluation of Past Performance and Future Policy Options for the REES, 2019', AEMC 'Residential Electricity Price Trends 2019'.

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As outlined in the 'Consultation Paper on Proposed Retailer Energy Productivity Scheme Regulatory Framework and Activities (June 2020)', many of the administrative features of the REES will be mirrored in the REPS, with the intention that this administrative efficiency is maintained. Common Capital also noted that REES has less transparency on the full range of scheme costs compared to schemes with tradable certificate registries in NSW and Victoria. The REPS proposals include requirements to improve scheme cost transparency by requiring obligated retailers to annually submit costs and offer information to ESCOSA for at least 80 per cent of the eligible activities.

Also, as recommended in the 'Review into the South Australian Retailer Energy Efficiency Scheme Review Report (December 2019)', many of the proposed activity specifications that have been developed for the REPS include customer co-payments requirements for all sectors except priority group households. This will increase the contribution from participating households and businesses to the overall costs of the REPS, reducing the cross subsidy from all retail electricity and gas consumers.

A deeper retrofit sub-target for priority group households

Throughout the consultation for the REES review and during the development of the REPS framework, several stakeholders have argued for a mechanism to incentivise 'deeper' retrofits in priority group households, including combinations of major appliance replacement, and building shell upgrades.

To encourage deeper retrofits for this group, it is proposed that, from 1 January 2021, the REPS priority group target will also include a requirement that retailers will meet a minimum of fifty percent of the priority group energy productivity target (normalised GJ) by delivery of eligible activities or methods from the following categories:

- Installation of insulation in an uninsulated ceiling - BS1A
- Installation of top-up insulation in a ceiling space - BS1B
- Building sealing activities (Various) – BS2
- Secondary glazing retrofit – BS3B
- Install an efficient new heating/cooling system (Non-Ducted) (existing) - HC2A
- Install an efficient new heating/cooling system (Ducted) (new) - HC2B
- Replace or upgrade water heater - WH1
- Purchase a high efficiency new refrigerator - APP1A
- Purchase a high efficiency new freezer - APP1B
- Purchase a high efficiency new clothes dryer - APP1D
- Remove and destroy an unwanted household refrigerator or freezer - APP2
- Installation of a high efficiency pool pump - APP3

This deeper retrofit component requirement will sit within the target framework as described in the 'Consultation Paper on Consultation Paper on Proposed Retailer Energy Productivity Scheme (REPS) Regulatory Framework and Activities, June 2020'.

Size of sub-targets

It is proposed that under REPS, obligated retailer that exceed residential customer numbers thresholds will be required to meet Household Energy Productivity Targets and Priority Group Energy Productivity Targets. In the REES scheme, priority group targets typically comprised around twenty per cent of a retailer's overall target. And, in terms of actual delivered credits under the REES scheme, over forty per cent of the target is typically achieved in the residential sector.

CONSULTATION QUESTIONS

1. Do you think the REPS targets for 2021-2025 should be set at similar levels to the REES 2018-2020 (3.3 million GJs per year), or increased? Explain your response.
2. Recognising the REPS will introduce changes from REES, should the five yearly targets be 'ramped', with lower targets in early years?
3. Noting the REPS is funded by all retail electricity and gas consumers, what is an appropriate costs per year to the average South Australian household electricity bill?
4. Given the proposed REPS specifications and values, what are appropriate minimum proportions of the Energy Productivity Target that should be delivered through the Household Energy Productivity Targets and the Priority Group Household Targets?

5. Proposed specifications

Initial feedback has been received from stakeholders on potential REPS activities in response to the Consultation Paper on Proposed Retailer Energy Productivity Scheme Regulatory Framework and Activities, June 2020. This feedback has informed a set of activities and methods which are included in this paper for further stakeholder feedback.

Where a stakeholder suggestion for a deemed activity has not been included in the proposed activities in this paper, this may have been because the activity did not satisfy one or more of the criteria in the proposed 'Protocol for maintaining calculation methods, eligible activities and specifications' (Appendix 1).

The set of activities that have been assessed against the proposed 'protocol for maintaining calculation methods, eligible activities and specifications' (Appendix 1) as suitable for inclusion into the REPS are described in this section.

Key details of each activity are provided, together with specific matters where feedback is sought.

As outlined in the 'Consultation Paper on Proposed Retailer Energy Productivity Scheme Regulatory Framework and Activities, June 2020', normalising factors have been applied based on wholesale electricity price trends, electricity network price trends and the relative values of various full types.

Many of the REPS activities that have been adapted from REES do not involve any load shifting and so applying the electricity normalisation factors resulted in only modest variation from the GJ credits available under the REES. However, in some cases more marked increases in REPS credits have resulted from applying the normalisation factors and other baseline assumptions. These include:

- The cooling component of building sealing, insulation and heating/cooling equipment activities (activities BS1A, BS2, HC2A and HC2B), where the normalisation factor reflects significant

amounts of energy use in the summer during periods of higher demand. This was particularly relevant in the warmer climate zones (4 and 5) where cooling loads are significant.

- Commercial lighting activities (CL1) where the normalisation factor added approximately 20 per cent to the credit.

Nine activities are outlined in this paper that were not eligible activities in REES. These involve connecting various appliances to demand response programs, connecting a battery to a VPP, switching households to a time of use tariff, and two new commercial activities based on the NABERS scheme and a project-based methodology. The underlying assumptions and usage profiling for these is provided in Appendix 2, and specific detailed questions are provided on each of these new activities below.

GENERAL CONSULTATION QUESTIONS FOR ALL ACTIVITIES

5. Is the activity an appropriate activity to deliver through the REPS? Is it consistent with the proposed protocol for maintaining calculation methods, eligible activities and specifications (Appendix 1)?
6. Does the proposed specification allow for the activity to be delivered in an efficient and effective way?
7. Are there any energy productivity activities that would be suitable for use in the REPS that are not proposed?
8. Based on the proposed specification, do you consider the activity will be delivered through the REPS?
9. Are the normalised productivity credits a fair reflection of the productivity benefits that can be achieved from the activity?
10. Are there any health and safety concerns with the delivery of the activity that are not adequately addressed by the specification?

SPECIFIC QUESTIONS FOR NEW ACTIVITIES

11. Activities VPP1, APP4, HC2C, EV1, and WH4 require use of approved DR aggregators or approved VPPs. The specifications provide some criteria that the Minster should consider in approving these. What other criteria should be considered when designing the structure, approval and quality assurance processes for aggregators and VPPs?

WH3 –Switching Electric (Heat Pump or Resistance) Storage Water Heater to Off-Peak Controlled Load (OPCL) Tariff (Solar Sponge) WH3 (Residential or Small Business Only)

12. For how long can consumers be assumed to be likely to stay on a controlled load tariff once they have switched and why?
13. Should this activity be limited to solely residential households or should it also be available to SMEs and commercial enterprises and why?

TOU1 – Switch Household Electricity Plan from Single Rate Tariff to Time of Use (TOU) Tariff (Residential Only).

14. For how long can consumers be assumed to be likely to stay on a ToU tariff once they have switched and why?
15. Should this activity be limited to solely residential households or should it be expanded to include SMEs and commercial enterprises and why?
16. What cross price elasticity of demand should we assume for electricity for SA residential customers and why?
17. Should a household that benefits from this activity be restricted from claiming credits under other tariff related activities, such as, the VPP, WH4 & WH4 to avoid double counting?
18. Should the size of the incentive be relative to the annual electricity demand of the household? Or should average South Australian demand values be used.
19. The modest credits for this activity assume productivity factors based on customer responses to price elasticity alone. Could higher credits be justified if the activity was conditional on a customer also signing up to an approved behavioural demand response program? If so, what approach should be taken to estimating the likely demand savings from such a program and why? What issues should be taken into consideration by the Minister in approving such a program?

VPP1 – Connect a New or Existing Battery to an Approved Virtual Power Plant (Residential of Small Business Only).

20. Would it be feasible to require Approved VPPs that wish to obtain the credits to ensure all household load is shifted to battery power during peak times on a daily basis (up to maximum battery capacity)? If not, what assumptions are commercially and technically feasible as minimum assumptions for deemed demand peak demand reductions?

21. For how long can consumers be assumed to be likely to stay connected to an Approved VPP once they have signed up and why?
22. Should we restrict this activity to households or installations that have photovoltaic (PV) installations?
23. What are the restrictions under which VPPs should be required to operate in order to ensure the best results for affordability, stability and sustainability of the South Australian electricity network?
24. Should this activity be limited to solely residential households or should it be expanded to include SMEs and commercial enterprises and why?

APP4 – Connect a New or Existing Pool Pump to an Approved DR Aggregator (Residential Only).

25. For what period of time and how many peak days a year is it reasonable to assume a DR Aggregator could switch of load, and why?
26. For how long can consumers be assumed to be likely to stay connected to an Approved DR Aggregator once they have signed up and why?

HC2C – Connect Existing HVAC to an Approved DR Aggregator (Residential Only).

27. For what period of time and how many peak days a year is it reasonable to assume a DR Aggregator could switch of load, and why?
28. For how long can consumers be assumed to be likely to stay connected to an Approved DR Aggregator once they have signed up and why?
29. Should this activity be limited to solely residential households or should it be expanded to include SMEs and commercial enterprises and why?

EV1 – Connecting an Existing EV Charger to an Approved DR Aggregator (Residential or Small Business Only).

30. For what period of time and how many peak days a year is it reasonable to assume a DR Aggregator could switch of load, and why?
31. For how long can consumers be assumed to be likely to stay connected to an Approved DR Aggregator once they have signed up and why?

32. Should this activity be limited to solely residential households or should it be expanded to include SMEs and commercial enterprises and why?
33. Should we consider the possibility of using electric vehicles (EVs) dispatching electricity to the grid during critical peak times?
34. Should we assume that DR would only be activated during critical peak days? Or should we assume that DR would be used much more regularly?

WH4 – Connecting a New or Existing Electric Heat Pump Water Heater to an Approved DR Aggregator (Residential Only).

35. For what period of time and how many peak days a year is it reasonable to assume a DR Aggregator could switch of load, and why?
36. For how long can consumers be assumed to be likely to stay connected to an Approved DR Aggregator once they have signed up and why?
37. Should this activity be limited to solely residential households or should it be expanded to include SMEs and commercial enterprises and why?

5.1 General Specification

For all activities

The REPS activity specifications provide minimum requirements that obliged retailers must follow for the purposes of undertaking activities under the REPS. They are not intended to be exhaustive. In particular, in addition to the requirements set out in the specifications, all activities must be undertaken in accordance with all laws, regulations and codes of practice applicable to that activity.

Where an activity is undertaken in a rental premises, it may be necessary to first obtain the permission of the landlord or landlord's agent.

Any reference to gas within these specifications refers to either natural gas or Liquefied Petroleum Gas (LPG).

A REPS approved activity that involves the installation, removal, repair or upgrade of equipment in a premises may only be performed once in the premises, unless permitted in the activity's specifications.

Obliged retailers must be satisfied with the fitness and propriety of any person providing REPS activities in a customer's premises as per the requirements of a REPS Code published by the Commission.

Any reference to a standard or code is those in force at the time the activity is undertaken and includes relevant successor legislation and standards.

All reasonable endeavours should be used to recycle components removed from the premises in the course of undertaking the activity.

Activities undertaken in buildings or relating to assets owned by the South Australian Government are not eligible activities under the REPS unless:

- the recipient is a residential tenant, and
- the activity is not a standard service provided by the manager of the property.

5.2 Install Insulation in an Uninsulated Ceiling Space BS1A (Residential Only)

Install Insulation in an Uninsulated Ceiling Space; Residential Only	Activity No.
	BS1A

1. ACTIVITY SPECIFIC DEFINITIONS

Habitable Room means any space that can be occupied within a class 1 or class 2 dwelling (as defined by the National Construction Code). This does not include any attached garages, sheds or the like.

Ceiling means the uppermost surface of a habitable room that has an exposed roof or the attic space of an exposed roof immediately above. Ceilings do not include ceilings of rooms that have another habitable room above the subject portion of the ceiling.

Uninsulated ceiling space means a ceiling space without ceiling insulation installed. For the purposes of this activity, ceiling spaces with single sheet reflective foil insulation hung below the roofing material are deemed to be uninsulated ceiling spaces.

Insulation Area means the area of ceiling space where by insulation is to be installed by this activity. It is expressed as square metres (metres × metres).

2. ACTIVITY DESCRIPTION (SUMMARY)

Install insulation in an uninsulated ceiling space above a habitable room

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) A residential premises subject to this activity must contain at least 20m^2 of uninsulated ceiling space above a habitable room or rooms that are practical to insulate.

(2) All habitable rooms with uninsulated ceiling spaces that are practical to insulate must be insulated as part of this activity.

(3) The installation of ceiling insulation must not be otherwise required by law, for example as condition of a development approval under the *Development Act 1993* or the *Planning, Development and Infrastructure Act 2016.*

(4) The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

(5) A valid tax invoice must be retained for verification purposes, clearly showing the completion date, the address that the insulation was installed in, the name and contact details of the person billed for the installation, and the amount charged for the installation.

(6) The following activities are excluded:

- Use of reflective foil laminate sheeting
- Use of blow in cellulous-based products

4. INSTALLED PRODUCT REQUIREMENTS

The installed product must:

(1) Comply with the performance requirements of the effective version of AS/NZS 4859.1

(2) Achieve a minimum winter R value, when measured in accordance with the effective version of AS/NZS 4859.1 of:

- R3.5 if the Site is in NCC Climate Zone 4 or 5
- R5.0 if the Site is in NCC climate zone 6

(3) Comply with any product safety or other product performance requirements in a relevant code of practice or other relevant legislation applying to the activity

(4) Be fit for the purpose for which it is intended to be used

(5) Come with a minimum 5-year product warranty.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) The insulation product used must be installed in compliance with the effective version of AS 3999, AS/NZS 3000 (as applicable) and the NCC Section J1.2. In particular, the safety, pre-inspection and risk assessment procedures, electrical safety provisions and provisions for limiting moisture ingress of AS 3999 shall be observed.

(2) The activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the activity, including any licensing, registration, statutory approval, activity certification, health, safety, environmental or waste disposal requirements.

(3) The undertaking of this activity shall not compromise the condensation management of the building. Reference should be made to the provisions in the Australian Building Codes Board publication "Condensation in buildings – Information handbook".

(4) Cut outs around ceiling penetrations such as down-lights must be kept to the minimum permitted by AS 3999.

(5) The installing business must complete and provide to the recipient of the activity a signed copy of the "Installer Acknowledgement Form" section of the SA Government's "Installation of Ceiling Insulation – Consumer Safety Self- Assessment and Installer Acknowledgement Form", available from https://www.sa.gov.au. A copy of this completed and signed form must also be retained for verification purposes.

(6) Photographs of the activity in its location (date and location stamped), before and after the upgrades that coincide with the location are required for record keeping and verification.

(7) The business or person undertaking the activity must have a building work contractor license which includes insulation within its scope of activities under the *Building Work Contractors Act 1995*.

(8) The activity must be overseen by a supervisor who is registered to undertake ceiling insulation work with Consumer and Business Services.

(9) Any person installing insulation as part of this activity must hold a construction industry 'White Card'.

6. ACTIVITY REPS CREDITS

The normalised REPS credits from undertaking this activity is equal to:

Normalised REPS credits (GJ) = Productivity Factor (as per table below) x Insulation Area (m^2*)

Activity	**Productivity Factor**
NCC Zones 4&5 – install R3.5 insulation	**1.389**
NCC Zones 6 – Install R5.0 insulation	**1.689**

* Where cut-outs are made (e.g. around down-lights) an area equal to the actual cut-out shall be excluded from the calculation of the REPS credits.

5.3 Install Top-up Insulation in a Ceiling Space BS1B (Residential Only)

Install Top Up Insulation in a Ceiling Space; Residential Only	Activity No.
	BS1B

1. ACTIVITY SPECIFIC DEFINITIONS

Habitable Room means any space that can be occupied within a class 1 or class 2 dwelling (as defined by the National Construction Code). This does not include any attached garages, sheds or the like

Ceiling means the uppermost surface of a habitable room that has an exposed roof or the attic space of an exposed roof immediately above. Ceilings do not include ceilings of rooms that have another habitable room above the subject portion of the ceiling

Under insulated ceiling space means a ceiling space with less than optimal levels of pre-existing ceiling insulation installed. For the purposes of this activity less than optimal insulation is deemed to be any level of insulation with an R value of R1.5 or less.

Insulation Area means the area of ceiling space where by insulation is to be installed by this activity. It is expressed as square metres (metres × metres).

2. ACTIVITY DESCRIPTION (SUMMARY)

Install insulation to a previously under-insulated ceiling space above a habitable room.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) A residential premises subject to this activity must contain under insulated ceiling space/s above a habitable room or rooms

(2) All habitable rooms with under insulated ceiling spaces that are practical to insulate must be insulated as part of this activity.

(3) The installation of top up ceiling insulation must not be otherwise required by law, for example as condition of a development approval under the *Development Act 1993 or the Planning, Development and Infrastructure Act 2016*.

(4) The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

(5) The following activities are excluded:

- Use of reflective foil laminate sheeting
- Use of blow in cellulose products

4. INSTALLED PRODUCT REQUIREMENTS

The installed product must:

(1) Comply with the performance requirements of the effective version of AS/NZS 4859.1

(2) Achieve a minimum winter R value, when measured in accordance with the effective version of AS/NZS 4859.1 of:

- R3.0 if the Site is in NCC Climate Zone 4 or 5,
- R4.5 if the Site is in NCC climate Zone 6.

(3) Comply with any product safety or other product performance requirements in a relevant code of practice or other relevant legislation applying to the activity.

(4) Be fit for the purpose for which it is intended to be used.

(5) Come with a minimum 5 year product warranty

5. MINIMUM INSTALLATION REQUIREMENTS

(1) The insulation product used must be installed in compliance with the effective version of AS 3999, AS/NZS 3000 (as applicable) and the NCC Section J1.2. In particular, the safety, pre-inspection and risk assessment procedures, electrical safety provisions and provisions for limiting moisture ingress of AS 3999 shall be observed.

(2) The activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the activity, including any licensing, registration, statutory approval, activity certification, health, safety, environmental or waste disposal requirements;

(3) The undertaking of this activity shall not compromise the condensation management of the building. Reference should be made to the provisions in the Australian Building Codes Board publication "Condensation in buildings – Information handbook"

(4) Cut outs around ceiling penetrations such as down-lights must be kept to the minimum permitted by AS 3999.

(5) The installing business must complete and provide to the recipient of the activity a signed copy of the "Installer Acknowledgement Form" section of the SA Government's "Installation of Ceiling Insulation – Consumer Safety Self- Assessment and Installer Acknowledgement Form", available from www.sa.gov.au. A copy of this completed and signed form must also be retained for verification purposes.

(6) Photographs of the activity in its location (date and location stamped), before and after the upgrades that coincide with the location are required for record keeping and verification.

(7) The business or person undertaking the activity must have a building work contractor license which includes insulation within its scope of activities under the *Building Work Contractors Act 1995.*

(8) The activity must be overseen by a supervisor who is registered to undertake ceiling insulation work with Consumer and Business Services

(9) Any person installing insulation as part of this activity must hold a construction industry 'White Card'.

6. ACTIVITY REPS CREDITS

The normalised REPS credits from undertaking this activity is equal to:

Normalised REPS credits (GJ) = Productivity Factor (as per table below) x Insulation Area (m^2*)

Activity	**Productivity Factor**
NCC Zones 4&5 Install R3.0 insulation	**0.240**
NCC Zone 6 Install R4.5 insulation	**0.321**

* Where cut-outs are made (e.g. around down-lights) an area equal to the actual cut-out shall be excluded from the calculation of REPS credits.

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

As a guide, any bulk ceiling insulation with an uncompressed thickness of less than 75mm can be considered to be less than R1.5 rated

5.4 Building Sealing Activities (Various) BS2 (Residential Only)

Building Sealing Activities (Various); Residential Only	Activity No.
	BS2

1. ACTIVITY SPECIFIC DEFINITIONS

Habitable Room means any space that can be occupied within a class 1 or class 2 dwelling (as defined by the National Construction Code). This does not include any attached garages, sheds or the like.

Permanent fireplace or chimney sealing device means a sealing device that is not capable of removal from the chimney or fireplace without the use of tools. For the purposes of this activity permanent fireplace or chimney sealing device includes devices that are designed to be used in operable fireplaces.

Removable fireplace or chimney sealing device means a sealing device that is capable of removal from the chimney or fireplace without the use of tools. For the purposes of this activity removable fireplace or chimney sealing device includes chimney balloons.

2. ACTIVITY DESCRIPTION (SUMMARY)

Installation of products designed to restrict or prevent air flow through doors, windows, chimneys/open fireplaces, exhaust fans or wall vents

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) General: Any individual activity listed below or combination of activities may be undertaken at a residential premises in circumstances where the particular sealing activity has not previously been undertaken. However, the installation of any of the noted building sealing activities must not be otherwise required by law, for example as condition of a development approval under the *Development Act 1993* or the *Planning, Development and Infrastructure Act 2016.*

(2) Doors: Doors to be draught proofed must be on external walls of habitable rooms and present with gaps between the door and frame and/or threshold that permit the infiltration of air into or out of the dwelling. All eligible doors at a residential premises must be draught proofed, where practical.

(3) Windows: Windows to be draught proofed must be on external walls of habitable rooms and present with gaps between the sash and frame that permit the infiltration of air into or out of the dwelling. All eligible windows at a residential premises must be draught proofed, where practical.

(4) Chimneys/Fireplaces: The fireplace must be in a habitable room, be an open fireplace that is unsealed and not have a pre-existing chimney sealing device. All eligible chimneys/fireplaces at a residential premises must be draught proofed, where practical.

(5) Exhaust Fans: Exhaust fans to be draught proofed must be located in a habitable room and not fitted with a self-closing sealing device. Note: for this activity either a self-closing damper can be fitted to an existing exhaust fan or alternatively the entire fan assembly can be replaced with a new fan assembly that includes an integral self-closing damper. All eligible exhaust fans at a residential premises must be draught proofed, where practical.

(6) Wall Vents: Wall vents to be draught proofed must be located in external walls of habitable rooms and have an open area not less than 50 cm^2 open to the outside air. External wall openings to underfloor spaces must not be sealed. All eligible wall vents at a residential premises must be draught proofed, where practical.

(7) The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be

evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

The installed product must meet the following requirements

Doors and Windows

- The equipment to be applied must be a retail door bottom sealing product or door/window perimeter weather stripping product or a combination of the two as required.
- The product's sealing surface must be made of a durable compressible material such as foam, polypropylene pile, flexible plastic, rubber compressible strip, and fibrous seal or similar
- The product must not impair the proper operation of the door or window.
- The product, once applied, must effectively restrict the airflow into or out of the dwelling around the perimeter of the door or window as applicable.
- The product must be fit for the purpose for which it is intended to be used.

Chimneys/Fireplaces

- All fireplace or chimney sealing devices must be durable, fit for purpose and capable of effectively sealing the flue or chimney of an open fireplace.
- Permanent fireplace or chimney sealing devices designed to be used in an operable fireplace must be of a sufficiently durable construction such that the operation of the device is not adversely affected by the heat of a fire and, when open, does not adversely affect the operation of the fireplace, in particular the chimney/flue's capacity to "draw" smoke out of the firebox.
- Removable fireplace or chimney sealing devices that require inflation must be supplied with a pump.
- Permanent fireplace or chimney sealing devices must come with a minimum 5 year product warranty.
- Removable fireplace or chimney sealing devices must come with a minimum 1 year product warranty.

Exhaust Fans

The installed product must:

- Be either a ceiling or wall exhaust fan that is fitted with a self-closing damper, flap or other sealing product that can be closed to seal the exhaust of a fan and is suitable for installation in the location in which it is to be installed, or a product that is a self-closing damper, flap, filter or other sealing product that can be closed to seal the exhaust of a fan and is suitable for installation on the exhaust fan on which it is to be installed.
- The product must come with a minimum 2 year product warranty.

Wall Vents

- The product must be a robust non shrinking permanent sealing material compatible with the surrounding wall construction and colour matched to the surrounding surface finish.

General Requirements (all forms of sealing device)

- All products must be fit for purpose

- All products must comply with any product safety or other product performance requirements in a relevant code of practice or other relevant legislation applying to the activity.

MINIMUM INSTALLATION REQUIREMENTS

(1) All products must be installed in accordance with manufacturer's instructions.

(2) Works must be carried out in accordance with the NCC Section J3 and any applicable Australian Standards.

(3) No building sealing activity must occur in rooms that have an existing flue-less gas space heater or a connection that could be used for a flue-less gas space heater.

(4) Any product installed must be tested to ensure it is correctly installed, is operating correctly, and does not interfere with the normal operation of the door, window, fire place or fan to which it is fixed.

(5) The person undertaking this activity must satisfy the REPS Code mandatory safety training requirements and, if undertaking work in a ceiling space, must hold a construction industry 'White Card'. Registered Plumbers, Gas Fitters, Electricians and Building Work Supervisors are exempt from this requirement.

(6) Any complete replacement of an exhaust fan assembly can only be carried out by a licensed electrical worker under the supervision of a licensed electrical contractor.

(7) Any work that involves installation of a product over a ceiling exhaust fan/heating combination unit must be completed by a licensed electrical worker under the supervision of a licensed electrical contractor.

(8) Any work that requires modification to electrical wiring must be completed by a licensed electrical worker under the supervision of a licensed electrical contractor.

(9) The activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the activity, including any licensing, registration, statutory approval, activity certification, health, safety, environmental or waste disposal requirements.

(10) The undertaking of the activity shall not compromise the condensation management of the building. Reference should be made to the provisions in the Australian Building Codes Board publication "Condensation in buildings – Information handbook".

Chimneys/Fireplaces (additional requirements)

- All fireplace or chimney sealing devices must be installed in accordance with the manufacturer's instructions.
- If the permanent fireplace or chimney sealing device is not designed to be used in an operable fireplace, the fireplace must be sealed such that access to the combustion chamber is also permanently sealed, or if the firebox is not to be sealed, then the fuel burning device must be clearly tagged as having been sealed.
- If the permanent fireplace or chimney sealing device is designed to be used in an operable fireplace, it must be installed in a manner that ensures that the safe operation of the fireplace is not compromised.
- For each removable fireplace or chimney sealing device installed, two photographs (date and location stamped) must be taken: one showing the device in its position, and the other showing an appropriate warning, that is visible to a person seeking to use the fireplace, that the device must be removed prior to operating the chimney.

Wall vents (additional requirements)

- Where a wall vent connects an inside space to the outside via a wall cavity, only the inside face of the wall vent shall be sealed. The wall cavity must remain connected via the opening in the external wall to the outside air.
- Where a wall vent or vents are the only source of ventilation to a room (i.e. no windows or external doors) they shall not be sealed.

6. ACTIVITY REPS CREDITS

The normalised REPS credits from undertaking this activity is equal to:

- For Door sealing:

  Normalised REPS Credits (GJ) = Productivity Factor (as per table below) x Number of doors sealed
- For Window sealing:

  Normalised REPS Credits (GJ) = Productivity Factor (as per table below) x Lineal metres of window perimeter sealed
- For fireplace or chimney sealing:

  Normalised REPS Credits (GJ) = Productivity Factor (as per table below) x Number of chimneys/fireplaces sealed
- For exhaust fan sealing:

  Normalised REPS Credits (GJ) = Productivity Factor (as per table below) x Number of exhaust fans sealed
- For wall vent sealing:

  Normalised REPS Credits (GJ) = Productivity Factor (as per table below) x Number of wall vents sealed

Productivity factors NCC Zones 4 & 5

Activity	**Productivity Factor**
Door Sealing (adhesive fix)	**0.447**
Door Sealing (mechanical fix)	**0.890**
Window Sealing (adhesive fix)	**0.055**
Window Sealing (mechanical fix)	**0.110**
Fireplace or chimney Sealing (permanent)	**13.346**
Fireplace or chimney Sealing (removable)	**6.706**
Exhaust fan sealing	**0.360**
Wall vent sealing	**0.377**

Productivity factors NCC Zone 6

Activity	**Productivity Factor**
Door Sealing (adhesive fix)	**0.560**
Door Sealing (mechanical fix)	**1.113**
Window Sealing (adhesive fix)	**0.067**
Window Sealing (mechanical fix)	**0.133**
Fireplace or chimney Sealing (permanent)	**15.947**
Fireplace or chimney Sealing (removable)	**8.028**
Exhaust fan sealing	**0.442**
Wall vent sealing	**0.462**

5.5 Secondary Glazing Retrofit – BS3B (Residential Only)

Secondary Glazing Retrofit; Residential Only	**Activity No.**
	BS3B

1. ACTIVITY SPECIFIC DEFINITIONS

Habitable Room means any space that can be occupied within a class 1 or class 2 dwelling (as defined by the National Construction Code). This does not include any attached garages, sheds or the like

Secondary Glazing means a removable rigid sheet of glass, acrylic or polycarbonate that is fitted to an existing single glazed window so as to create a still air gap between the sheets. For the purposes of this activity description "secondary glazing" does not include any form of film.

WERS means the Window Energy Rating Scheme managed by the Australian Window Association

System U-Value means the thermal transmittance, in W/m^2K, of a window system including glass, sash and frame, as registered under WERS.

Total Window Area means the area of window replaced in square metres (metres × metres).

Thermally efficient window means a window (including glazing and frame) that meets the requirements of the table below.

Window Type	Minimum WERS Star Rating Heating Mode	Minimum WERS Star Rating Cooling Mode	Maximum System U Value (W/m^2K)
4 star Window	4 stars	1.5 stars	3.1
6 star Window	6 stars	3.5 stars	2.3

2. ACTIVITY DESCRIPTION (SUMMARY)

Retrofit secondary glazing to a pre-existing single glazed window in the external wall of a residential premises.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

- Pre-existing windows to be retrofitted must be single glazed in good condition without rot, or corrosion or other form of material defect and located in an external wall of a habitable room
- The retrofit of secondary glazing must not be otherwise required by law, for example as condition of a development approval under the *Development Act 1993* or the *Planning, Development and Infrastructure Act 2016.*
- The recipient of the activity must cause payment to the installer for the goods and services provided, with the minimum payment being $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

The installed product must:

(1) Be a window product rated by WERS

(2) Be either glass, acrylic or polycarbonate (films are not eligible)

(3) Be simply removable by the home owner so as to permit access to the formed air gap for cleaning/drying purposes.

(4) Comply with the effective version of AS 2047 and AS 1288.

(5) Be either a 4 Star Window, or a 6 Star Window in accordance with the minimum requirements for a thermally efficient window as detailed in the table above

(6) Have a warranty of at least 5 years.

(7) Be fit for the purpose for which it is intended to be used

(8) Comply with any product safety or other product performance requirements in a relevant code of practice or other relevant legislation applying to the activity.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) All products must be installed in accordance with manufacturer's instructions

(2) The window must be installed in compliance with the effective versions of AS 2047 and AS 1288.

(3) The activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the activity, including any licensing, registration, statutory approval, activity certification, health, safety, environmental or waste disposal requirements;

6. ACTIVITY REPS CREDITS

The normalised REPS credits from undertaking this this activity is equal to:

Normalised REPS credits (GJ) = Savings Factor (as per table below) x Total Window Area (m^2)

Activity	**Productivity Factor**
4 Star Window (NCC Zones 4&5)	**0.436**
6 Star Window (NCC Zones 4&5)	**0.770**
4 Star Window (NCC Zones 6)	**0.419**
6 Star Window (NCC Zones 6)	**0.85**

5.6 Install an Efficient New Reverse Cycle Air Conditioner (Non-Ducted) HC2A (Residential Only)

Install an Efficient New Reverse Cycle Air Conditioner (Non-Ducted); Residential Only	Activity No.
	HC2A

1. ACTIVITY SPECIFIC DEFINITIONS

Reverse cycle air conditioner (non-ducted) means a single phase non-ducted air conditioner with both heating and cooling functions that is registered for energy labelling and MEPS under AS/NZS 3823.2 (2013) or GEMS Air Conditioners up to 65kW Determination 2019 as applicable.

Note that there is currently a transition period between the older AS/NZS 3823.2 (2013) standard and the newer GEMS Air Conditioners up to 65kW Determination 2019. Available product may be registered to either standard until April 2025 after which only product registered to the GEMS determination will be legal to purchase.

ACOP means the annual coefficient of performance as defined in GEMS Air Conditioners up to 65kW Determination 2019

AEER means the annual energy efficiency ratio as defined in GEMS Air Conditioners up to 65kW Determination 2019

HSPF means Heating Seasonal Performance Factor as defined in GEMS Air Conditioners up to 65kW Determination 2019

TCSPF means Total Cooling Seasonal Performance Factor as defined in GEMS Air Conditioners up to 65kW Determination 2019

Fixed Resistance Electric Heater means an electric heater that utilizes a resistance electric heating element (ACOP = 1) that is permanently fixed within the building. Portable electric heaters such as fan convectors radiant or oil column heaters that are not permanently fixed do not qualify as **a "fixed resistance electric heater".**

SRI means Star Rating Index (AS/NZS 3823.2 (2013) i.e. based on ACOP or AEER)

Seasonal SRI means Seasonal Star Rating Index (2019 GEMS Determination i.e. based on HSPF or TCSPF)

Priority Group Household means households as defined in the Part 4 of the Electricity (General) Regulations 2012 under the *Electricity Act 1996*, and the Part 4 of the Gas Regulations 2012 under the *Gas Act 1997.*

2. ACTIVITY DESCRIPTION (SUMMARY)

Install an efficient new reverse cycle air conditioner (non-ducted). This can take one of three forms:

HC2A(i) - Replacement (early retirement) of a pre-existing room air-conditioner in working order (Priority group households only)

HC2A(ii) - Replacement of a pre-existing fixed resistance electric heater in working order

HC2A(iii) - Installation of a new reverse cycle air-conditioner (non-ducted) without any pre-condition in relation to type of existing heating equipment (if any). Includes installation of a new air conditioner in a new dwelling.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential household in South Australia where the installed product requirements and minimum installation requirements can be met, notwithstanding that:

Activity HC2A(i) - Replacement (early retirement) of a pre-existing air-conditioner is limited in application to priority group households only.

In relation to activities HC2A(i) and HC2A(ii), all the pre-existing heater/s within the conditioned spaces of the dwelling must be fully decommissioned, removed from the property and disposed of.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

(1) The reverse cycle air conditioner (non-ducted) must achieve the following minimum performance standards under AS/NZS 3823.2 (2013) or GEMS Air Conditioners up to 65kW Determination 2019 as applicable:

- Heating Performance
    - a. AS/NZS 3823.2 (2013), minimum 3.5 stars or minimum ACOP of 4.0
    - b. GEMS Air Conditioners up to 65kW Determination 2019, minimum 2.5 stars or minimum HSPF of 4.0
- Cooling Performance
    - a. AS/NZS 3823.2 (2013), minimum 3.5 stars or minimum AEER of 4.0
    - b. GEMS Air Conditioners up to 65kW Determination 2019, minimum 2.5 stars or minimum TCSPF of 4.0

(2) The reverse cycle air conditioner (non-ducted) shall be single phase and have a rated cooling output not exceeding 15kW.

(3) Multi-split systems are not eligible.

(4) The installed product must have a warranty of at least 2 years.

(5) Water loop heat pump products must be registered for sale under the *Greenhouse and Energy Minimum Standards (GEMS)* Act 2012 and comply with MEPS levels specified in AS/NZS3823.2 or GEMS Air Conditioners up to 65kW Determination 2019 as applicable.

(6) The installed product must have “built-in” demand response capability, in accordance with AS 4755. In either heating or cooling mode, the device must be capable of operating in DR modes 1, plus mode 2 and/or 3 as defined in AS 4755.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) Any reverse cycle air conditioner (non-ducted) installed must comply with AS/NZS 60335.2.40.

(2) Removed pre-existing heaters shall have refrigerants and any other scheduled substances disposed of in accordance with the Australian and New Zealand refrigerant handling code of practice as

established under the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (Cth).

6. ACTIVITY REPS CREDITS

The normalised REPS credits per appliance (GJ) from undertaking this this activity is as per the following six tables.

Separate tables are provided for “NCC climate zone 6” and “other places in SA” and;

Separate tables are provided for each of the three possible sub-activities available under this activity.

Normalised REPS credits are based on the installed products heating star rating or ACOP/HSPF (refer to the options in the red coloured fields down the left hand side of each table) and its cooling star rating or AEER/TCSPF (refer to the options in the blue coloured fields across the top of each table).

Note: In the tables below, “Old Stars” refers to star ratings awarded under AS/NZS 3823.2 (2013) (i.e. a non-seasonal type rating) and “New Stars” refers to star ratings awarded under GEMS Air Conditioners up to 65kW Determination 2019 (i.e. a seasonal type rating).

Normalised REPS credits (GJ) per activity

(NCC climate 6) – HC2A (i) - Replacement (early retirement) of a pre-existing air-conditioner

NCC 6	HC2A(i)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	8.4	9.0	9.5	9.9	10.3	10.7	11.0	11.3	11.6	11.8	12.1	12.3	12.5	12.7
4 to < 4.5		4.25 to < 4.5	10.9	11.5	12.0	12.4	12.8	13.2	13.5	13.8	14.1	14.3	14.6	14.8	15.0	15.2
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	13.2	13.7	14.2	14.7	15.0	15.4	15.7	16.0	16.3	16.6	16.8	17.0	17.2	17.4
5 to < 5.5		4.75 to < 5	15.2	15.7	16.2	16.7	17.1	17.4	17.7	18.0	18.3	18.6	18.8	19.0	19.2	19.4
5.5 to < 6	3.5 to < 4	5 to < 5.25	17.0	17.5	18.0	18.5	18.9	19.2	19.5	19.8	20.1	20.4	20.6	20.8	21.0	21.2
6 to < 6.5		5.25 to < 5.5	18.6	19.2	19.7	20.1	20.5	20.9	21.2	21.5	21.8	22.0	22.3	22.5	22.7	22.9
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	20.1	20.7	21.2	21.6	22.0	22.4	22.7	23.0	23.3	23.5	23.7	24.0	24.2	24.4
7 to < 7.5		5.75 to < 6	21.5	22.0	22.5	23.0	23.4	23.7	24.0	24.3	24.6	24.9	25.1	25.3	25.5	25.7
7.5 to < 8	4.5 to < 5	6 to < 6.25	22.7	23.3	23.8	24.2	24.6	25.0	25.3	25.6	25.9	26.1	26.4	26.6	26.8	27.0
8 to < 8.5		6.25 to < 6.5	23.9	24.4	24.9	25.4	25.8	26.1	26.5	26.8	27.0	27.3	27.5	27.7	27.9	28.1
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	25.0	25.5	26.0	26.4	26.8	27.2	27.5	27.8	28.1	28.4	28.6	28.8	29.0	29.2
9 to < 9.5		6.75 to < 7	26.0	26.5	27.0	27.4	27.8	28.2	28.5	28.8	29.1	29.4	29.6	29.8	30.0	30.2
9.5 to < 10	5.5 or More	7 to < 7.25	26.9	27.4	27.9	28.4	28.8	29.1	29.4	29.7	30.0	30.3	30.5	30.7	30.9	31.1
> 10		7.25 or more	27.7	28.3	28.8	29.2	29.6	30.0	30.3	30.6	30.9	31.1	31.4	31.6	31.8	32.0

(NCC climate 6) – HC2A (ii) - Replacement of a pre-existing fixed resistance electric heater

NCC 6	HC2A(ii)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	127.3	127.8	128.3	128.7	129.1	129.5	129.8	130.1	130.4	130.7	130.9	131.1	131.3	131.5
4 to < 4.5		4.25 to < 4.5	129.8	130.3	130.8	131.2	131.6	132.0	132.3	132.6	132.9	133.2	133.4	133.6	133.8	134.0
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	132.0	132.5	133.0	133.5	133.9	134.2	134.6	134.9	135.1	135.4	135.6	135.8	136.0	136.2
5 to < 5.5		4.75 to < 5	134.0	134.5	135.0	135.5	135.9	136.2	136.6	136.9	137.1	137.4	137.6	137.8	138.0	138.2
5.5 to < 6	3.5 to < 4	5 to < 5.25	135.8	136.4	136.8	137.3	137.7	138.0	138.4	138.7	138.9	139.2	139.4	139.7	139.9	140.0
6 to < 6.5		5.25 to < 5.5	137.4	138.0	138.5	138.9	139.3	139.7	140.0	140.3	140.6	140.8	141.1	141.3	141.5	141.7
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	138.9	139.5	140.0	140.4	140.8	141.2	141.5	141.8	142.1	142.3	142.6	142.8	143.0	143.2
7 to < 7.5		5.75 to < 6	140.3	140.9	141.3	141.8	142.2	142.5	142.9	143.2	143.4	143.7	143.9	144.2	144.4	144.5
7.5 to < 8	4.5 to < 5	6 to < 6.25	141.6	142.1	142.6	143.0	143.4	143.8	144.1	144.4	144.7	145.0	145.2	145.4	145.6	145.8
8 to < 8.5		6.25 to < 6.5	142.7	143.3	143.8	144.2	144.6	145.0	145.3	145.6	145.9	146.1	146.3	146.6	146.8	147.0
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	143.8	144.3	144.8	145.3	145.7	146.0	146.4	146.7	146.9	147.2	147.4	147.6	147.8	148.0
9 to < 9.5		6.75 to < 7	144.8	145.3	145.8	146.3	146.7	147.0	147.3	147.6	147.9	148.2	148.4	148.6	148.8	149.0
9.5 to < 10	5.5 or More	7 to < 7.25	145.7	146.3	146.7	147.2	147.6	147.9	148.3	148.6	148.8	149.1	149.3	149.5	149.8	149.9
> 10		7.25 or more	146.6	147.1	147.6	148.0	148.4	148.8	149.1	149.4	149.7	150.0	150.2	150.4	150.6	150.8

(NCC climate 6) – HC2A (iii) - Installation of a new reverse cycle air-conditioner (non-ducted) without pre-condition

NCC 6	HC2A(iii)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	6.7	7.3	7.8	8.2	8.6	9.0	9.3	9.6	9.9	10.1	10.4	10.6	10.8	11.0
4 to < 4.5		4.25 to < 4.5	9.3	9.8	10.3	10.7	11.1	11.5	11.8	12.1	12.4	12.6	12.9	13.1	13.3	13.5
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	11.5	12.0	12.5	13.0	13.4	13.7	14.0	14.3	14.6	14.9	15.1	15.3	15.5	15.7
5 to < 5.5		4.75 to < 5	13.5	14.0	14.5	15.0	15.4	15.7	16.1	16.4	16.6	16.9	17.1	17.3	17.5	17.7
5.5 to < 6	3.5 to < 4	5 to < 5.25	15.3	15.8	16.3	16.8	17.2	17.5	17.9	18.2	18.4	18.7	18.9	19.1	19.3	19.5
6 to < 6.5		5.25 to < 5.5	16.9	17.5	18.0	18.4	18.8	19.2	19.5	19.8	20.1	20.3	20.6	20.8	21.0	21.2
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	18.4	19.0	19.5	19.9	20.3	20.7	21.0	21.3	21.6	21.8	22.1	22.3	22.5	22.7
7 to < 7.5		5.75 to < 6	19.8	20.3	20.8	21.3	21.7	22.0	22.4	22.7	22.9	23.2	23.4	23.6	23.8	24.0
7.5 to < 8	4.5 to < 5	6 to < 6.25	21.1	21.6	22.1	22.5	22.9	23.3	23.6	23.9	24.2	24.4	24.7	24.9	25.1	25.3
8 to < 8.5		6.25 to < 6.5	22.2	22.8	23.2	23.7	24.1	24.4	24.8	25.1	25.3	25.6	25.8	26.1	26.3	26.4
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	23.3	23.8	24.3	24.8	25.2	25.5	25.8	26.1	26.4	26.7	26.9	27.1	27.3	27.5
9 to < 9.5		6.75 to < 7	24.3	24.8	25.3	25.7	26.1	26.5	26.8	27.1	27.4	27.7	27.9	28.1	28.3	28.5
9.5 to < 10	5.5 or More	7 to < 7.25	25.2	25.7	26.2	26.7	27.1	27.4	27.8	28.1	28.3	28.6	28.8	29.0	29.2	29.4
> 10		7.25 or more	26.1	26.6	27.1	27.5	27.9	28.3	28.6	28.9	29.2	29.4	29.7	29.9	30.1	30.3

(Other Places in SA) – HC2A (i) - Replacement (early retirement) of a pre-existing air-conditioner

NCC 5	HC2A(i)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	10.0	11.9	13.5	15.0	16.3	17.5	18.6	19.6	20.5	21.4	22.2	22.9	23.6	24.2
4 to < 4.5		4.25 to < 4.5	11.2	13.1	14.7	16.2	17.5	18.7	19.8	20.8	21.8	22.6	23.4	24.1	24.8	25.4
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	12.3	14.2	15.8	17.3	18.6	19.8	20.9	21.9	22.9	23.7	24.5	25.2	25.9	26.5
5 to < 5.5		4.75 to < 5	13.3	15.2	16.8	18.3	19.6	20.8	21.9	22.9	23.9	24.7	25.5	26.2	26.9	27.5
5.5 to < 6	3.5 to < 4	5 to < 5.25	14.2	16.1	17.7	19.2	20.5	21.7	22.8	23.8	24.7	25.6	26.4	27.1	27.8	28.4
6 to < 6.5		5.25 to < 5.5	15.0	16.9	18.5	20.0	21.3	22.5	23.6	24.6	25.5	26.4	27.2	27.9	28.6	29.2
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	15.8	17.6	19.2	20.7	22.1	23.3	24.4	25.4	26.3	27.1	27.9	28.7	29.3	30.0
7 to < 7.5		5.75 to < 6	16.4	18.3	19.9	21.4	22.7	23.9	25.0	26.0	27.0	27.8	28.6	29.3	30.0	30.6
7.5 to < 8	4.5 to < 5	6 to < 6.25	17.1	18.9	20.5	22.0	23.3	24.5	25.6	26.7	27.6	28.4	29.2	29.9	30.6	31.3
8 to < 8.5		6.25 to < 6.5	17.6	19.5	21.1	22.6	23.9	25.1	26.2	27.2	28.1	29.0	29.8	30.5	31.2	31.8
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	18.2	20.0	21.6	23.1	24.4	25.6	26.7	27.8	28.7	29.5	30.3	31.0	31.7	32.3
9 to < 9.5		6.75 to < 7	18.6	20.5	22.1	23.6	24.9	26.1	27.2	28.2	29.2	30.0	30.8	31.5	32.2	32.8
9.5 to < 10	5.5 or More	7 to < 7.25	19.1	20.9	22.6	24.1	25.4	26.6	27.7	28.7	29.6	30.5	31.3	32.0	32.7	33.3
> 10		7.25 or more	19.5	21.4	23.0	24.5	25.8	27.0	28.1	29.1	30.0	30.9	31.7	32.4	33.1	33.7

(Other Places in SA) – HC2A (ii) - Replacement of a pre-existing fixed resistance electric heater

NCC 5	HC2A(ii)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	35.2	37.1	38.7	40.2	41.5	42.7	43.8	44.8	45.7	46.6	47.4	48.1	48.8	49.4
4 to < 4.5		4.25 to < 4.5	36.4	38.3	39.9	41.4	42.7	43.9	45.0	46.0	47.0	47.8	48.6	49.3	50.0	50.6
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	37.5	39.4	41.0	42.5	43.8	45.0	46.1	47.1	48.1	48.9	49.7	50.4	51.1	51.7
5 to < 5.5		4.75 to < 5	38.5	40.4	42.0	43.5	44.8	46.0	47.1	48.1	49.1	49.9	50.7	51.4	52.1	52.7
5.5 to < 6	3.5 to < 4	5 to < 5.25	39.4	41.3	42.9	44.4	45.7	46.9	48.0	49.0	49.9	50.8	51.6	52.3	53.0	53.6
6 to < 6.5		5.25 to < 5.5	40.2	42.1	43.7	45.2	46.5	47.7	48.8	49.8	50.7	51.6	52.4	53.1	53.8	54.4
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	41.0	42.8	44.4	45.9	47.3	48.5	49.6	50.6	51.5	52.3	53.1	53.9	54.5	55.2
7 to < 7.5		5.75 to < 6	41.6	43.5	45.1	46.6	47.9	49.1	50.2	51.2	52.2	53.0	53.8	54.5	55.2	55.8
7.5 to < 8	4.5 to < 5	6 to < 6.25	42.3	44.1	45.7	47.2	48.5	49.7	50.8	51.9	52.8	53.6	54.4	55.1	55.8	56.5
8 to < 8.5		6.25 to < 6.5	42.8	44.7	46.3	47.8	49.1	50.3	51.4	52.4	53.3	54.2	55.0	55.7	56.4	57.0
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	43.4	45.2	46.8	48.3	49.6	50.8	51.9	52.9	53.9	54.7	55.5	56.2	56.9	57.5
9 to < 9.5		6.75 to < 7	43.8	45.7	47.3	48.8	50.1	51.3	52.4	53.4	54.4	55.2	56.0	56.7	57.4	58.0
9.5 to < 10	5.5 or More	7 to < 7.25	44.3	46.1	47.8	49.3	50.6	51.8	52.9	53.9	54.8	55.7	56.5	57.2	57.9	58.5
> 10		7.25 or more	44.7	46.6	48.2	49.7	51.0	52.2	53.3	54.3	55.2	56.1	56.9	57.6	58.3	58.9

(Other Places in SA) – HC2A (iii) - Installation of a new reverse cycle air-conditioner (non-ducted) without pre-condition

NCC 5	HC2A(iii)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	8.2	10.1	11.7	13.2	14.5	15.7	16.8	17.8	18.7	19.6	20.4	21.1	21.8	22.4
4 to < 4.5		4.25 to < 4.5	9.5	11.3	12.9	14.4	15.7	17.0	18.1	19.1	20.0	20.8	21.6	22.3	23.0	23.7
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	10.6	12.4	14.0	15.5	16.8	18.1	19.2	20.2	21.1	21.9	22.7	23.4	24.1	24.8
5 to < 5.5		4.75 to < 5	11.5	13.4	15.0	16.5	17.8	19.0	20.1	21.1	22.1	22.9	23.7	24.4	25.1	25.7
5.5 to < 6	3.5 to < 4	5 to < 5.25	12.4	14.3	15.9	17.4	18.7	19.9	21.0	22.0	23.0	23.8	24.6	25.3	26.0	26.6
6 to < 6.5		5.25 to < 5.5	13.2	15.1	16.7	18.2	19.5	20.7	21.8	22.8	23.8	24.6	25.4	26.1	26.8	27.4
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	14.0	15.8	17.5	18.9	20.3	21.5	22.6	23.6	24.5	25.4	26.1	26.9	27.5	28.2
7 to < 7.5		5.75 to < 6	14.7	16.5	18.1	19.6	20.9	22.1	23.2	24.3	25.2	26.0	26.8	27.5	28.2	28.9
7.5 to < 8	4.5 to < 5	6 to < 6.25	15.3	17.1	18.8	20.2	21.6	22.8	23.9	24.9	25.8	26.6	27.4	28.2	28.8	29.5
8 to < 8.5		6.25 to < 6.5	15.8	17.7	19.3	20.8	22.1	23.3	24.4	25.4	26.4	27.2	28.0	28.7	29.4	30.0
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	16.4	18.2	19.9	21.3	22.7	23.9	25.0	26.0	26.9	27.7	28.5	29.3	29.9	30.6
9 to < 9.5		6.75 to < 7	16.9	18.7	20.3	21.8	23.1	24.4	25.4	26.5	27.4	28.2	29.0	29.7	30.4	31.1
9.5 to < 10	5.5 or More	7 to < 7.25	17.3	19.2	20.8	22.3	23.6	24.8	25.9	26.9	27.8	28.7	29.5	30.2	30.9	31.5
> 10		7.25 or more	17.7	19.6	21.2	22.7	24.0	25.2	26.3	27.3	28.3	29.1	29.9	30.6	31.3	31.9

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Persons installing heating/cooling systems should have regard to the "Air Conditioning Residential Best Practice Guideline" (2003) published by the Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH). All reasonable endeavours should be used to recycle removed systems.

Refrigerants and any other scheduled substances must be disposed of in accordance with the Australian and New Zealand refrigerant handling code of practice as established under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* (Cth).

5.7 Install an Efficient New Reverse Cycle Air Conditioner (Ducted or Multi-Split) HC2B (Residential Only)

Install an Efficient New Reverse Cycle Air Conditioner (Ducted or Multi-Split); Residential Only	Activity No.
	HC2B

1. ACTIVITY SPECIFIC DEFINITIONS

Reverse cycle air conditioner (ducted or multi-split) means a ducted or multi-split air conditioner with both heating and cooling functions that is registered for energy labelling and MEPS under AS/NZS 3823.2 (2013) or GEMS Air Conditioners up to 65kW Determination 2019 as applicable.

Note that there is currently a transition period between the older AS/NZS 3823.2 (2013) standard and the newer GEMS Air Conditioners up to 65kW Determination 2019. Available product may be registered to either standard until April 2025 after which only product registered to the GEMS determination will be legal to purchase.

ACOP means the annual coefficient of performance as defined in GEMS Air Conditioners up to 65kW Determination 2019.

AEER means the annual energy efficiency ratio as defined in GEMS Air Conditioners up to 65kW Determination 2019.

HSPF means Heating Seasonal Performance Factor as defined in GEMS Air Conditioners up to 65kW Determination 2019.

TCSPF means Total Cooling Seasonal Performance Factor as defined in GEMS Air Conditioners up to 65kW Determination 2019.

Resistance electric heater – panel type: means a system of electric heaters capable of providing direct heating to all living/bedroom areas and services an area of not less than 100 m^2 and that utilizes a resistance electric heating element (ACOP = 1) all of which are permanently fixed within the building. Portable electric heaters such as fan convectors radiant or oil column heaters that are not permanently fixed do not qualify as a “Resistance electric heater – panel type”.

Resistance electric heater – slab type: means a system of electric heating elements embedded within a dwellings concrete floor system and services an area of not less than 100 m^2.

SRI means Star Rating Index (AS/NZS 3823.2 (2013) i.e. based on ACOP or AEER)

Seasonal SRI means Seasonal Star Rating Index (2019 GEMS Determination i.e. based on HSPF or TCSPF)

2. ACTIVITY DESCRIPTION (SUMMARY)

Install an efficient new reverse cycle air conditioner (ducted). This can take one of three forms:

- HC2B(i) - Replacement of a pre-existing resistance electric heater – panel type in working order.
- HC2B(ii) - Replacement of a pre-existing resistance electric heater – slab type in working order
- HC2B(iii) - Installation of a new reverse cycle air-conditioner (ducted or multi-split) without any pre-condition in relation to type of existing heating equipment (if any).

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential household in South Australia where the installed product requirements and minimum installation requirements can be met. This can include new or replacement systems.

In relation to activity HC2B(i) all the pre-existing heaters within the conditioned spaces of the dwelling must be fully decommissioned, removed from the property and disposed of.

Wherever possible the replacement system should use the same circuit breakers in the switchboard as had been used by the replaced system. Where this is not possible the replaced system must be disconnected at the switchboard by a licenced electrician such that it cannot be re-activated by the householder.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

The reverse cycle air conditioner (ducted or multi-split) must achieve the following minimum performance standards under AS/NZS 3823.2 (2013) or GEMS Air Conditioners up to 65kW Determination 2019 as applicable:

- Heating Performance
    a. AS/NZS 3823.2 (2013), minimum 3.5 stars or minimum ACOP of 4.0
    b. GEMS Air Conditioners up to 65kW Determination 2019, minimum 2.5 stars or minimum HSPF of 4.0
- Cooling Performance
    a. AS/NZS 3823.2 (2013), minimum 3.5 stars or minimum AEER of 4.0
    b. GEMS Air Conditioners up to 65kW Determination 2019, minimum 2.5 stars or minimum TCSPF of 4.0

(1) The installed product must have a warranty of at least 2 years.

(2) Water loop heat pumps products must be registered for sale under the *Greenhouse and Energy Minimum Standards (GEMS) Act 2012* and comply with MEPS levels specified in AS/NZS3823.

(3) The installed product must have “built-in” demand response capability, in accordance with AS 4755. In either heating or cooling mode, the device must be capable of operating in DR modes 1, plus mode 2 and/or 3 as defined in AS 4755.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) Any reverse cycle air conditioner (ducted or multi-split) installed must comply with AS/NZS 60335.2.40.

(2) Where a multi-split system is replacing a pre-existing ducted system that is to be decommissioned, the outlets of that decommissioned system must be effectively sealed at ceiling level.

(3) Removed pre-existing heaters shall have refrigerants and any other scheduled substances disposed of in accordance with the Australian and New Zealand refrigerant handling code of practice as established under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* (Cth).

6. ACTIVITY REPS CREDITS

The normalised REPS credits per appliance (GJ) from undertaking this this activity is as per the following six tables.

Separate tables are provided for “NCC climate zone 6” and “other places in SA” and

Separate tables are provided for each of the three possible sub-activities available under this activity.

Normalised REPS credits are based on the installed products heating star rating or ACOP/HSPF (refer to the options in the red coloured fields down the left hand side of each table) and its cooling star rating or AEER/TCSPF (refer to the options in the blue coloured fields across the top of each table).

Note: In the tables below, “Old Stars” refers to star ratings awarded under AS/NZS 3823.2 (2013) (i.e. a non-seasonal type rating) and “New Stars” refers to star ratings awarded under GEMS Air Conditioners up to 65kW Determination 2019 (i.e. a seasonal type rating).

Normalised REPS credits (GJ) per activity

(NCC climate 6) – HC2B (i) - Replacement of a pre-existing resistance electric heater – panel type

NCC 6	HC2B(i)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	297.9	299.5	300.9	302.3	303.4	304.5	305.5	306.4	307.2	307.9	308.6	309.3	309.9	310.5
4 to < 4.5		4.25 to < 4.5	305.3	306.9	308.4	309.7	310.9	311.9	312.9	313.8	314.6	315.4	316.1	316.7	317.3	317.9
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	311.9	313.6	315.0	316.3	317.5	318.6	319.6	320.5	321.3	322.0	322.7	323.4	324.0	324.5
5 to < 5.5		4.75 to < 5	317.9	319.5	321.0	322.3	323.5	324.5	325.5	326.4	327.2	328.0	328.7	329.3	329.9	330.5
5.5 to < 6	3.5 to < 4	5 to < 5.25	323.3	324.9	326.4	327.7	328.9	329.9	330.9	331.8	332.6	333.4	334.1	334.7	335.3	335.9
6 to < 6.5		5.25 to < 5.5	328.1	329.8	331.2	332.5	333.7	334.8	335.8	336.7	337.5	338.2	338.9	339.6	340.2	340.8
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	332.6	334.2	335.7	337.0	338.2	339.2	340.2	341.1	341.9	342.7	343.4	344.0	344.6	345.2
7 to < 7.5		5.75 to < 6	336.7	338.3	339.7	341.1	342.2	343.3	344.3	345.2	346.0	346.7	347.4	348.1	348.7	349.3
7.5 to < 8	4.5 to < 5	6 to < 6.25	340.4	342.0	343.5	344.8	346.0	347.0	348.0	348.9	349.7	350.5	351.2	351.8	352.4	353.0
8 to < 8.5		6.25 to < 6.5	343.8	345.5	346.9	348.2	349.4	350.5	351.5	352.3	353.2	353.9	354.6	355.3	355.9	356.4
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	347.0	348.6	350.1	351.4	352.6	353.7	354.6	355.5	356.3	357.1	357.8	358.4	359.1	359.6
9 to < 9.5		6.75 to < 7	350.0	351.6	353.0	354.4	355.5	356.6	357.6	358.5	359.3	360.1	360.7	361.4	362.0	362.6
9.5 to < 10	5.5 or More	7 to < 7.25	352.7	354.3	355.8	357.1	358.3	359.4	360.3	361.2	362.0	362.8	363.5	364.1	364.7	365.3
> 10		7.25 or more	355.3	356.9	358.3	359.7	360.8	361.9	362.9	363.8	364.6	365.4	366.0	366.7	367.3	367.9

(NCC climate 6) – HC2B (ii) - Replacement of a pre-existing resistance electric heater – slab type

NCC 6	HC2B(ii)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	412.0	413.7	415.1	416.4	417.6	418.7	419.7	420.6	421.4	422.1	422.8	423.5	424.1	424.6
4 to < 4.5		4.25 to < 4.5	419.5	421.1	422.6	423.9	425.1	426.1	427.1	428.0	428.8	429.6	430.3	430.9	431.5	432.1
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	426.1	427.7	429.2	430.5	431.7	432.8	433.7	434.6	435.5	436.2	436.9	437.6	438.2	438.7
5 to < 5.5		4.75 to < 5	432.1	433.7	435.2	436.5	437.7	438.7	439.7	440.6	441.4	442.2	442.9	443.5	444.1	444.7
5.5 to < 6	3.5 to < 4	5 to < 5.25	437.4	439.1	440.5	441.8	443.0	444.1	445.1	446.0	446.8	447.5	448.2	448.9	449.5	450.1
6 to < 6.5		5.25 to < 5.5	442.3	444.0	445.4	446.7	447.9	449.0	450.0	450.8	451.7	452.4	453.1	453.8	454.4	454.9
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	446.8	448.4	449.9	451.2	452.3	453.4	454.4	455.3	456.1	456.9	457.6	458.2	458.8	459.4
7 to < 7.5		5.75 to < 6	450.8	452.5	453.9	455.2	456.4	457.5	458.5	459.4	460.2	460.9	461.6	462.3	462.9	463.4
7.5 to < 8	4.5 to < 5	6 to < 6.25	454.6	456.2	457.7	459.0	460.1	461.2	462.2	463.1	463.9	464.7	465.4	466.0	466.6	467.2
8 to < 8.5		6.25 to < 6.5	458.0	459.6	461.1	462.4	463.6	464.7	465.6	466.5	467.3	468.1	468.8	469.4	470.0	470.6
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	461.2	462.8	464.3	465.6	466.8	467.8	468.8	469.7	470.5	471.3	472.0	472.6	473.2	473.8
9 to < 9.5		6.75 to < 7	464.1	465.8	467.2	468.5	469.7	470.8	471.8	472.7	473.5	474.2	474.9	475.6	476.2	476.7
9.5 to < 10	5.5 or More	7 to < 7.25	466.9	468.5	470.0	471.3	472.5	473.5	474.5	475.4	476.2	477.0	477.7	478.3	478.9	479.5
> 10		7.25 or more	469.4	471.1	472.5	473.8	475.0	476.1	477.1	478.0	478.8	479.5	480.2	480.9	481.5	482.0

(NCC climate 6) – HC2B (iii) - Installation of a new reverse cycle air-conditioner (ducted or multi-split)

NCC 6	HC2B(iii)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	25.1	26.7	28.2	29.5	30.7	31.7	32.7	33.6	34.4	35.2	35.9	36.5	37.1	37.7
4 to < 4.5		4.25 to < 4.5	32.5	34.2	35.6	36.9	38.1	39.2	40.2	41.1	41.9	42.6	43.3	44.0	44.6	45.1
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	39.2	40.8	42.3	43.6	44.8	45.8	46.8	47.7	48.5	49.3	50.0	50.6	51.2	51.8
5 to < 5.5		4.75 to < 5	45.1	46.8	48.2	49.5	50.7	51.8	52.8	53.7	54.5	55.2	55.9	56.6	57.2	57.7
5.5 to < 6	3.5 to < 4	5 to < 5.25	50.5	52.1	53.6	54.9	56.1	57.2	58.1	59.0	59.8	60.6	61.3	61.9	62.6	63.1
6 to < 6.5		5.25 to < 5.5	55.4	57.0	58.5	59.8	61.0	62.0	63.0	63.9	64.7	65.5	66.2	66.8	67.4	68.0
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	59.8	61.5	62.9	64.2	65.4	66.5	67.5	68.3	69.2	69.9	70.6	71.3	71.9	72.4
7 to < 7.5		5.75 to < 6	63.9	65.5	67.0	68.3	69.5	70.5	71.5	72.4	73.2	74.0	74.7	75.3	75.9	76.5
7.5 to < 8	4.5 to < 5	6 to < 6.25	67.6	69.3	70.7	72.0	73.2	74.3	75.3	76.1	77.0	77.7	78.4	79.1	79.7	80.2
8 to < 8.5		6.25 to < 6.5	71.1	72.7	74.2	75.5	76.6	77.7	78.7	79.6	80.4	81.2	81.9	82.5	83.1	83.7
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	74.2	75.9	77.3	78.6	79.8	80.9	81.9	82.8	83.6	84.3	85.0	85.7	86.3	86.8
9 to < 9.5		6.75 to < 7	77.2	78.8	80.3	81.6	82.8	83.8	84.8	85.7	86.5	87.3	88.0	88.6	89.2	89.8
9.5 to < 10	5.5 or More	7 to < 7.25	79.9	81.6	83.0	84.3	85.5	86.6	87.6	88.5	89.3	90.0	90.7	91.4	92.0	92.5
> 10		7.25 or more	82.5	84.1	85.6	86.9	88.1	89.1	90.1	91.0	91.8	92.6	93.3	93.9	94.5	95.1

(Other Places in SA) – HC2B (i) - Replacement of a pre-existing resistance electric heater – panel type

NCC 5	HC2B(i)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	PS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	65.0	70.5	75.4	79.8	83.7	87.3	90.6	93.6	96.3	98.8	101.2	103.3	105.4	107.2
4 to < 4.5		4.25 to < 4.5	68.7	74.2	79.0	83.4	87.4	91.0	94.2	97.2	100.0	102.5	104.8	107.0	109.0	110.9
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	72.0	77.4	82.3	86.7	90.6	94.2	97.5	100.5	103.2	105.8	108.1	110.3	112.3	114.2
5 to < 5.5		4.75 to < 5	74.9	80.4	85.2	89.6	93.6	97.2	100.4	103.4	106.2	108.7	111.0	113.2	115.2	117.1
5.5 to < 6	3.5 to < 4	5 to < 5.25	77.5	83.0	87.9	92.3	96.2	99.8	103.1	106.1	108.8	111.3	113.7	115.9	117.9	119.8
6 to < 6.5		5.25 to < 5.5	79.9	85.4	90.3	94.7	98.6	102.2	105.5	108.5	111.2	113.7	116.1	118.3	120.3	122.2
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	82.1	87.6	92.5	96.9	100.8	104.4	107.7	110.7	113.4	115.9	118.3	120.4	122.5	124.3
7 to < 7.5		5.75 to < 6	84.1	89.6	94.5	98.9	102.8	106.4	109.7	112.7	115.4	117.9	120.3	122.4	124.5	126.3
7.5 to < 8	4.5 to < 5	6 to < 6.25	86.0	91.4	96.3	100.7	104.7	108.2	111.5	114.5	117.2	119.8	122.1	124.3	126.3	128.2
8 to < 8.5		6.25 to < 6.5	87.7	93.1	98.0	102.4	106.4	109.9	113.2	116.2	118.9	121.5	123.8	126.0	128.0	129.9
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	89.2	94.7	99.6	104.0	107.9	111.5	114.8	117.8	120.5	123.0	125.4	127.5	129.6	131.4
9 to < 9.5		6.75 to < 7	90.7	96.2	101.0	105.4	109.4	113.0	116.2	119.2	122.0	124.5	126.8	129.0	131.0	132.9
9.5 to < 10	5.5 or More	7 to < 7.25	92.0	97.5	102.4	106.8	110.7	114.3	117.6	120.6	123.3	125.8	128.2	130.4	132.4	134.2
> 10		7.25 or more	93.3	98.8	103.7	108.0	112.0	115.6	118.8	121.8	124.6	127.1	129.4	131.6	133.6	135.5

(Other Places in SA) – HC2B (ii) - Replacement of a pre-existing resistance electric heater – slab type

NCC 5	HC2B(ii)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	121.3	126.7	131.6	136.0	140.0	143.5	146.8	149.8	152.5	155.1	157.4	159.6	161.6	163.5
4 to < 4.5		4.25 to < 4.5	124.9	130.4	135.3	139.7	143.6	147.2	150.5	153.5	156.2	158.7	161.1	163.2	165.3	167.1
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	128.2	133.7	138.6	142.9	146.9	150.5	153.7	156.7	159.5	162.0	164.3	166.5	168.5	170.4
5 to < 5.5		4.75 to < 5	131.1	136.6	141.5	145.9	149.8	153.4	156.7	159.7	162.4	164.9	167.3	169.4	171.5	173.3
5.5 to < 6	3.5 to < 4	5 to < 5.25	133.8	139.3	144.1	148.5	152.5	156.1	159.3	162.3	165.1	167.6	169.9	172.1	174.1	176.0
6 to < 6.5		5.25 to < 5.5	136.2	141.7	146.5	150.9	154.9	158.5	161.7	164.7	167.5	170.0	172.3	174.5	176.5	178.4
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	138.4	143.8	148.7	153.1	157.1	160.6	163.9	166.9	169.7	172.2	174.5	176.7	178.7	180.6
7 to < 7.5		5.75 to < 6	140.4	145.8	150.7	155.1	159.1	162.7	165.9	168.9	171.7	174.2	176.5	178.7	180.7	182.6
7.5 to < 8	4.5 to < 5	6 to < 6.25	142.2	147.7	152.6	157.0	160.9	164.5	167.8	170.7	173.5	176.0	178.4	180.5	182.5	184.4
8 to < 8.5		6.25 to < 6.5	143.9	149.4	154.3	158.6	162.6	166.2	169.5	172.4	175.2	177.7	180.1	182.2	184.2	186.1
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	145.5	150.9	155.8	160.2	164.2	167.8	171.0	174.0	176.8	179.3	181.6	183.8	185.8	187.7
9 to < 9.5		6.75 to < 7	146.9	152.4	157.3	161.7	165.6	169.2	172.5	175.5	178.2	180.7	183.1	185.2	187.3	189.1
9.5 to < 10	5.5 or More	7 to < 7.25	148.3	153.8	158.6	163.0	167.0	170.6	173.8	176.8	179.6	182.1	184.4	186.6	188.6	190.5
> 10		7.25 or more	149.5	155.0	159.9	164.3	168.2	171.8	175.1	178.1	180.8	183.3	185.7	187.9	189.9	191.7

(Other Places in SA) – HC2B (iii) - Installation of a new reverse cycle air-conditioner (ducted or multi-split)

NCC 5	HC2B(iii)	Cooling Stars Old>	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 6.5	6.5 to < 7	7 to < 7.5	7.5 to < 8	8 to < 8.5	8.5 to < 9	9 to < 9.5	9.5 to < 10	≥ 10
		Cooling Stars New >	2.5 to < 3		3 to < 3.5		3.5 to < 4		4 to < 4.5		4.5 to < 5		5 to < 5.5		5.5 or More	
		AEER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.5 to < 4.75	4.75 to < 5	5 to < 5.25	5.25 to < 5.5	5.5 to < 5.75	5.75 to < 6	6 to < 6.25	6.25 to < 6.5	6.5 to < 6.75	6.75 to < 7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	ACOP or HSPF	REPS Credit (GJ)													
3.5 to < 4	2.5 to < 3	4 to < 4.25	29.8	35.3	40.1	44.5	48.5	52.1	55.3	58.3	61.1	63.6	65.9	68.1	70.1	72.0
4 to < 4.5		4.25 to < 4.5	33.4	38.9	43.8	48.2	52.1	55.7	59.0	62.0	64.7	67.3	69.6	71.8	73.8	75.7
4.5 to < 5	3 to < 3.5	4.5 to < 4.75	36.7	42.2	47.1	51.5	55.4	59.0	62.3	65.2	68.0	70.5	72.9	75.0	77.0	78.9
5 to < 5.5		4.75 to < 5	39.7	45.1	50.0	54.4	58.3	61.9	65.2	68.2	70.9	73.5	75.8	78.0	80.0	81.9
5.5 to < 6	3.5 to < 4	5 to < 5.25	42.3	47.8	52.7	57.0	61.0	64.6	67.8	70.8	73.6	76.1	78.4	80.6	82.6	84.5
6 to < 6.5		5.25 to < 5.5	44.7	50.2	55.1	59.4	63.4	67.0	70.2	73.2	76.0	78.5	80.8	83.0	85.0	86.9
6.5 to < 7	4 to < 4.5	5.5 to < 5.75	46.9	52.4	57.2	61.6	65.6	69.2	72.4	75.4	78.2	80.7	83.0	85.2	87.2	89.1
7 to < 7.5		5.75 to < 6	48.9	54.4	59.2	63.6	67.6	71.2	74.4	77.4	80.2	82.7	85.0	87.2	89.2	91.1
7.5 to < 8	4.5 to < 5	6 to < 6.25	50.7	56.2	61.1	65.5	69.4	73.0	76.3	79.3	82.0	84.5	86.9	89.0	91.1	92.9
8 to < 8.5		6.25 to < 6.5	52.4	57.9	62.8	67.2	71.1	74.7	78.0	81.0	83.7	86.2	88.6	90.7	92.8	94.6
8.5 to < 9	5 to < 5.5	6.5 to < 6.75	54.0	59.5	64.3	68.7	72.7	76.3	79.5	82.5	85.3	87.8	90.1	92.3	94.3	96.2
9 to < 9.5		6.75 to < 7	55.4	60.9	65.8	70.2	74.1	77.7	81.0	84.0	86.7	89.3	91.6	93.8	95.8	97.7
9.5 to < 10	5.5 or More	7 to < 7.25	56.8	62.3	67.2	71.5	75.5	79.1	82.3	85.3	88.1	90.6	92.9	95.1	97.1	99.0
> 10		7.25 or more	58.1	63.5	68.4	72.8	76.7	80.3	83.6	86.6	89.3	91.9	94.2	96.4	98.4	100.3

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Persons installing heating/cooling systems should have regard to the "Air Conditioning Residential Best Practice Guideline" (2003) published by the Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH). All reasonable endeavours should be used to recycle removed systems.

Where a ducted air-conditioner is not star rated refer to the Air Conditioner CSV file available from http://reg.energyrating.gov.au/comparator/product_types/64/search/ for the ACOP/HSPF and AEER/TCSPF values. Use the data from the AnnualOutputCOP and AnnualOutputEER columns.

Refrigerants and any other scheduled substances must be disposed of in accordance with the Australian and New Zealand refrigerant handling code of practice as established under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* (Cth).

5.8 Replace or Upgrade Water Heater WH1 (Residential Only)

Replace or Upgrade Water Heater; Residential Only	Activity No.
	WH1

1. ACTIVITY SPECIFIC DEFINITIONS

Gas water heater or solar gas means a water heater that has a primary or boost fuel source of natural gas (methane) or LPG.

Class 1 and class 2 dwellings are as defined by the National Construction Code.

2. ACTIVITY DESCRIPTION (SUMMARY)

Install or replace a water heater.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

A new or replacement water heater installed to service a South Australian

- established class 1 dwelling, or
- class 2 dwelling (new or established).

The following is excluded:

- Installation of a water heater undertaken as part of class 1 building work requiring approval under the *Development Act 1993* or the *Planning, Development and Infrastructure Act 2016*. This includes water heaters installed to service a new class 1 dwelling.

The recipient of the approved WH1 must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

(1) Only gas, solar electric, solar gas or heat pump water heaters are included in the specification.

(2) Gas water heaters shall be rated at a minimum of 5 stars in accordance with AS4552 and listed in the Directory of AGA Certified Products.

(3) Solar electric and gas boosted solar systems with a tank size ≤ 220 litres shall earn ≥ 17 STCs for Zone 3.

(4) Solar electric and gas boosted solar systems 220 < tank size ≤ 400 litres shall earn ≥ 27 STCs for Zone 3.

(5) Solar electric and gas boosted solar systems 400 < tank size ≤ 700 litres shall earn ≥ 38 STCs for Zone 3.

(6) Heat pump water heaters shall earn ≥ 27 STCs when assessed under AS/NZS 4234 for Zone 3 and shall earn ≥ 26 STCs when assessed under AS/NZS 4234 for Zone 4.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) The water heater must be installed in accordance with relevant installation standards including, but not limited, to AS/NZS 3500:2003 (plumbing and drainage standards); AS/NZS 3500.4 (Plumbing

and drainage - Heated water services), AS 4552:2005 (gas hot water systems); AS/NZS 60335.2.21:2002 (electric storage water heaters); AS/NZS 60335.2.35:2004 (instantaneous water heaters).

(2) All products shall be installed in accordance with the manufacturers' installation instructions and specifications.

(3) Any replaced water heater must be removed from the premises.

(4) The activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the activity, including any licensing, registration, statutory approval, activity certification, health, safety, environmental or waste disposal requirements.

(5) Where required, a Certificate of Compliance must be provided and retained for verification purposes.

6. ACTIVITY REPS CREDITS

The normalised REPS credits from undertaking this activity is equal to:
Normalised REPS credits (GJ) = Productivity factor, as per the table below:

Activity Description	**Productivity Factor**	
	For a water heater installed to service an established class 1 dwelling that is not connected to a reticulated gas supply or a class 2 dwelling (new or established)	For a water heater installed to service an established class 1 dwelling that is connected to a reticulated gas supply
Install gas water heater with a rating of 5-stars or more	**53**	**0**
Install a gas water heater with a rating of 6-stars or more	**58**	**5**
Install a solar electric water heater	**129**	**50**
Install a solar gas water heater	**146**	**66**
Install a heat pump water heater	**113**	**33**

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

(1) This activity is to encourage households to exceed, where applicable, water heater installation requirements. These requirements are given effect by the South Australian Water Heater Installation Requirements under the National Construction Code Volume Three - Plumbing Code of Australia.

(2) There may be restrictions on the use of roof mounted systems that use ethylene glycol (or other anti-freeze agents) where roof water is collected for human consumption.

(3) Products listed by the Clean Energy Regulator can be found on http://ret.cleanenergyregulator.gov.au/.

(4) All reasonable endeavours should be used to recycle removed water heaters.

(5) Main gas, LPG and other gas systems are permitted under this specification.

(6) AGA Directory, refer to www.aga.asn.au/product_directory.

(7) For the solar water heater calculator, refer to Clean Energy Regulator's web site: www.rec-registry.gov.au/swhCalculatorInit.shtml.

5.9 Replace an Inefficient Showerhead with an Efficient Showerhead WH2 (Residential or Commercial)

Replace an Inefficient Showerhead with an Efficient Showerhead; Residential or Commercial	Activity No.
	WH2

1. ACTIVITY SPECIFIC DEFINITIONS

Inefficient showerhead means a showerhead, in its current use, that has a flow rate greater than 9 litres per minute. (see also section 3 below for details of on-site measurement methods)

Efficient showerhead means a showerhead that achieves a minimum water efficiency rating of 3 stars when assessed and labelled in accordance with AS/NZS 6400

Commercial premises are premises classified under the Building Code of Australia as either Class 3, 5, 6, 7, 8 or 9

2. ACTIVITY DESCRIPTION (SUMMARY)

Remove and dispose of existing inefficient showerhead/s from a residential or commercial premises and replace with efficient showerhead/s.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) Premises subject to this activity must contain at least one operational pre-existing inefficient showerhead.

(2) The flow rate of each pre-existing showerhead shall be measured with a simple bucket test with the hot water tap open fully and the cold water tap set so as to provide a typical showering temperature (approx. 40ºC). Hold a bucket under the running shower for 15 seconds. Measure the quantity of water captured and multiply by 4 to ascertain flow rate in litres per minute. The measured flow rate shall be recorded and retained for verification purposes.

(3) A maximum of 3 showerheads can be replaced per residential premises.

(4) The installation of an efficient showerhead must not be otherwise required by law, for example as condition of a development approval under the *Development Act 1993* or the *Planning, Development and Infrastructure Act 2016* or in compliance with requirements under the *Water Industry Act 2012*.

(5) The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

The installed product must be an efficient showerhead, including flow restrictor and any other components integral to and supplied with the fixture that:

(1) Complies with the requirements of the effective version of AS/NZS 3662; and

(2) Complies with any product safety or other product performance requirements in a relevant code of practice or other relevant legislation applying to the activity.

(3) Comes with a minimum 2 year product warranty.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) An efficient showerhead which is installed must be tested to ensure it is correctly installed, does not leak, and is operating correctly at a typical showering temperature.

(2) An efficient showerhead must not be installed where it would be incompatible with the operation of the hot water service currently installed. Where a replaced showerhead causes the hot water system to no longer operate (i.e. fails to heat water to a standard temperature), the installer must at the request of the householder/business owner install a showerhead of equivalent flow rate and quality of the original showerhead (where available), where such a request is made within 20 business days of the installation of the efficient showerhead.

(3) An inefficient showerhead which is replaced must be removed from the premises.

(4) The person undertaking this activity must satisfy the REPS Code mandatory safety training requirements. Registered Plumbers, Gas Fitters, Electricians and Building Work Supervisors are exempt from this requirement.

(5) The activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the activity, including any licensing, registration, statutory approval, activity certification, health, safety, environmental or waste disposal requirements.

(6) All reasonable endeavours should be used to recycle removed showerheads.

6. ACTIVITY REPS CREDITS

The normalised REPS credits per showerhead replaced from undertaking this this activity is equal to:

Normalised REPS credits (GJ) = Productivity factors, as per the table below:

Where is the activity undertaken: Climate Zone	Activity	**Productivity Factor**	
		Residential	**Commercial**
NCC Zones 4 & 5	From inefficient to efficient (7.5 l/min or less)	**7.69**	**10.25**
	From inefficient to efficient (9 l/min or less)	**7.01**	**9.35**
NCC Zone 6	From inefficient to efficient (7.5 l/min or less)	**8.68**	**11.58**
	From inefficient to efficient (9 l/min or less)	**7.92**	**10.57**

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Efficient showerheads are typically not compatible with gravity-fed water heaters (most already have low flow rates). They may also not be compatible with older instantaneous gas water heaters (reduced flow can interfere with the water heater operations).

5.10 Install an LED General Purpose Lamp L1 (Residential Only)

Install an LED General Purpose Lamp; Residential Only	Activity No.
	L1

1. ACTIVITY SPECIFIC DEFINITIONS

Integral referring to a lamp means that the power supply electronics are integrated into the lamp housing allowing direct connection to the existing power supply (typically using a Bayonet cap or Edison screw fitting).

Standard LED means an integral LED lamp with initial efficacy of not less than 140 lm/W (non-directional lamp) or 115 lm/W (directional lamp)

High Efficiency LED means an integral LED lamp with initial efficacy of not less than 155 lm/W (non-directional lamp) or 130 lm/W (directional lamp)

Directional Lamp: Directional lamps include types PAR, ER, R, RE, XR, YR, ZR or MR 11-16 or any other type that has at least 80 % light output within a cone with an angle of 120°

Non-Directional Lamp: A lamp other than a directional lamp

2. ACTIVITY DESCRIPTION (SUMMARY)

Replace a mains voltage incandescent or halogen lamp (non-directional or directional) with a light emitting diode integral lamp (LED).

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) The number of individual lamp replacements in any one premises shall not exceed 40.

(2) All equipment that is replaced must be in working order immediately prior to removal.

(3) Replaced equipment (lamp) shall have rated power according to Table L1A (non-directional lamps) or Table L1B (directional lamps). Refer column B for tungsten incandescent and column C for halogen lamps. If required, intermediate values of rated power are referenced to the next lower rated power.

(4) Where it can be demonstrated that the lamps being replaced have not previously been installed for the purposes of REPS, Activity L1 can be delivered twice per premises, providing all other aspects of the specification are met.

(5) The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

The installed product shall:

(1) Be installed at the time of removal of the existing equipment.

(2) Have an equivalent light output to that of the replaced lamp.

(3) Have a measured average minimum initial luminous efficacy of 140 lm/W (non-directional lamp) or 115 lm/W (directional lamp).

(4) Be either a “warm white” (rated colour temperature of 2700K to 3500K) or “cool white” (rated colour temperature of 3500K to 4000K) lamp. The installer is required to install either warm white or cool white according to the preference of the home owner, where no preference is provided then warm white shall be installed.

(5) Have a measured average initial luminous flux (for LEDs test procedure as required by the programs described below) of at least the corresponding* value in column D of Table L1A (non-directional lamps) or Table L1B (directional lamps). *Note that this should correspond to the class of replaced lamp.

(6) Provide a minimum 2 years replacement warranty.

(7) Either

    (a) Be approved under the NSW ESS or VEET scheme, or

    (b) demonstrate compliance with either Energy Star Integral LED Lamps V1.4 or Energy Star Lamps V1.0 by providing, where required for verification, current proof of program certification.

(8) For High Efficiency LEDs, demonstrate, where required for verification, through test reports from a NATA or Energy Star recognised laboratory, a minimum initial efficacy of not less than 155 lm/W (non-directional lamp) or 130 lm/W (directional lamp).

5. MINIMUM INSTALLATION REQUIREMENTS

(1) A person or entity undertaking this activity shall use best endeavours to ensure that any replacements are targeted at high usage luminaires in the first instance.

(2) All equipment replaced shall be removed from the premises and not re-used.

(3) Installed equipment shall not be connected to a transformer, dimmer, timer, motion sensor, daylight switch or other automated switch or control (or combination thereof) unless specified by the manufacturer as being compatible with such device or combinations of devices.

(4) If connected to a dimmer, the installer shall test the equipment through its full dimming range to ensure that the equipment works to the satisfaction of the customer.

(5) Where installed equipment causes sub-optimal operation, the installer shall either reinstall equipment equivalent to the original equipment or replace any components of the equipment that are causing the installation not to operate, at no expense to the resident. Such a request for reinstatement must be acted upon if made within 20 business days of the installation of the new equipment.

(6) The person undertaking this activity in a residential customer’s premises must satisfy the REPS Code mandatory safety training requirements. Registered Plumbers, Gas Fitters, Electricians and Building Work Supervisors are exempt from this requirement.

6. ACTIVITY REPS CREDITS

The normalised REPS credits per lamp installed in a residential premises is equal to:

Normalised REPS credits (GJ)= Productivity factor expressed in column E or F of the tables below, as applicable:

Table L1A: Non-Directional Lamps

A	B	C	D	E	F
Class	Removed Lamp: Typical rated incandescent lamp power (W)	Removed Lamp: Typical rated halogen lamp power (W)	Installed Lamp: Minimum luminous flux (lumens)	Standard LED Productivity Factor	High Efficiency LED Productivity Factor
0	25	18	200	0.121	0.130
1	40	28	350	0.196	0.212
2	60	42	650	0.320	0.350
3	75	53	850	0.411	0.450
4	100	70	1150	0.548	0.601
5	150 or higher	105 or higher	1800	0.837	0.920

Table L1B: Directional Lamps

A	B	C	D	E	F
Class	Removed Lamp: Typical rated incandescent lamp power (W)	Removed Lamp: Typical rated halogen lamp power (W)	Installed Lamp: Minimum luminous flux (lumens)	Standard LED Productivity Factor	High Efficiency LED Productivity Factor
0	25	18	150	0.086	0.096
1	40	28	250	0.135	0.151
1a	50	35	350	0.170	0.193
2	60	42	460	0.206	0.236
3	75	53	600	0.260	0.300
4	100	70	810	0.344	0.398
4a	120	84	990	0.414	0.480
5	150 or higher	105 or higher	1260	0.518	0.602

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

All reasonable endeavours should be undertaken to recycle removed equipment.

5.11 Install an LED Down-light Lamp or LED Down-light Luminaire L2 (Residential Only

Install an LED Down-light Lamp or LED Down-light Luminaire; Residential Only L2A – ELV Down-Light Lamp Replacement L2B – ELV Down-Light Luminaire Replacement	**Activity No.** **L2**

1. ACTIVITY SPECIFIC DEFINITIONS

Integral ELV LED lamp means a lamp with power supply electronics integrated into the lamp housing allowing direct connection to existing 12V power supply

Integral MV LED lamp means a lamp with power supply electronics integrated into the lamp housing allowing direct connection to existing mains power supply

Mains voltage (MV) LED down-light luminaire means a mains voltage LED light fixture incorporating light source, power supply electronics and luminaire housing that does not rely on any existing components of the replaced equipment in order to operate

ELV means extra low voltage, which in this context means nominal 12V a.c. or d.c.

Luminaire means apparatus which distributes, filters or transforms the light transmitted from one or more lamps and which includes, except the lamps themselves, all the parts necessary for fixing and protecting the lamps and, where necessary, circuit auxiliaries together with the means for connecting them to the electricity supply

Beam Angle: the angle between the opposing points on the beam axis where the intensity drops to 50% of its maximum

2. ACTIVITY DESCRIPTION (SUMMARY)

L2A Replace ELV halogen lamp with an integral ELV LED lamp.

L2B Replace ELV halogen lamp and transformer with an integral MV LED lamp or MV LED down-light luminaire.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) All equipment that is replaced must be in working order immediately prior to removal.

(2) Where it can be demonstrated that the lamps and transformer being replaced have not previously been installed for the purposes of REPS, activity L2B and L2C can be delivered twice per premises, providing that all other aspects of the specification are met.

(3) The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

(1) Be installed at the time of removal of the existing equipment.

(2) Be either a “warm white” (rated colour temperature of 2700K to 3500K) or “cool white” (rated colour temperature of 3500K to 4000K) lamp. The installer is required to install either warm white or cool white according to the preference of the home owner, where no preference is provided then warm white shall be installed.

(3) Have a measured average initial luminous flux (verified by test report - test procedure as required by one of the programs described below) of at least 400 lumens.

(4) Have a measured average minimum initial luminous efficacy of 115 Lumens/Watt.

(5) Have a minimum beam angle of 40 degrees.

(6) Either:

  (a) Be approved under the NSW ESS or VEET scheme or

  (b) meet Energy Star specifications (Integral LED Lamps V1.4 or Energy Star Lamps V1.0) by providing, where required for verification, current proof of program certification.

(7) Provide a minimum 2 years replacement warranty.

(8) For High Efficiency LEDs, demonstrate, where required for verification, through test reports from a NATA or Energy Star recognised laboratory, a minimum initial efficacy of not less than 130 lm/W.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) A person or entity undertaking this activity shall use best endeavours to ensure that any replacements are targeted at high usage luminaires in the first instance.

(2) All equipment replaced shall be removed from the premises and not re-used.

(3) Installed equipment shall not be connected to a transformer, dimmer, timer, motion sensor, daylight switch or other automated switch or control (or combination thereof) unless specified by the manufacturer as being compatible with such device or combinations of devices.

(4) If connected to a dimmer, the installer shall test the equipment through its full dimming range to ensure that the equipment works to the satisfaction of the customer.

(5) Where installed equipment causes sub-optimal operation, the installer shall either reinstall equipment equivalent to the original equipment or replace any components of the equipment that are causing the installation not to operate, at no expense to the resident. Such a request for reinstatement must be acted upon if made within 20 business days of the installation of the new equipment.

(6) The activity must be performed by a licensed electrical worker under the supervision of a licensed electrical contractor.

(7) An Electrical Certificate of Compliance must be provided and retained for verification purposes.

6. ACTIVITY REPS CREDITS

The normalised REPS credits per activity is equal to:

Normalised REPS credits (GJ) = The relevant Productivity factor in the tables below:

A	B	C
Activity	**Standard LED Productivity Factor**	**High Efficiency LED Productivity Factor**
L2A - Lamp only replacement	0.239	0.278
L2B - Lamp and transformer replacement	0.246	0.284

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

All reasonable endeavours should be undertaken to recycle removed equipment.

5.12 Replace Halogen Floodlight Luminaire L3 (Residential Only)

Replace Halogen Floodlight Luminaire; Residential Only	Activity No.
	L3

1. ACTIVITY SPECIFIC DEFINITIONS

Luminaire means apparatus which distributes, filters or transforms the light transmitted from one or more lamps and which includes, except the lamps themselves, all the parts necessary for fixing and protecting the lamps and, where necessary, circuit auxiliaries together with the means for connecting them to the electric supply

Standard LED means an integral LED floodlight with initial efficacy of not less than 150 lm/W

High Efficiency LED means an integral LED floodlight with initial efficacy of not less than 170 lm/W

2. ACTIVITY DESCRIPTION (SUMMARY)

Replace a halogen floodlight luminaire with an LED luminaire. Note that lamp-only replacements and modifications to existing luminaires are not included.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) All equipment that is replaced must be in working order immediately prior to removal.

(2) Replaced equipment must be a linear halogen floodlight.

(3) Replaced equipment must not be a portable floodlight - it shall be hard-wired into the premises.

(4) Replaced equipment (lamp) must be rated > 100W.

(5) The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

The installed product shall:

(1) Be installed at the time of removal of the existing equipment.

(2) Have a measured average initial luminous flux of at least the corresponding* value in column 2 of the table below (verified by test report utilising test procedures as required by one of the programs below). *Note that this should correspond to the class of replaced luminaire.

(3) Have a measured average minimum initial luminous efficacy of 150 lm/W.

(4) Provide a minimum 2 years replacement warranty.

(5) Either

  (a) Be approved by the NSW ESS scheme; or

  (b) meet either the US Energy Star specification for luminaires V1.2 or Designlights Technical Requirements Table v2.1 by providing current proof of program certification.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) A person or entity undertaking this activity shall use best endeavours to ensure that any replacements are targeted at high usage luminaires in the first instance.

(2) All equipment replaced shall be removed from the premises and not re-used.

(3) Installed equipment shall not be connected to a transformer, dimmer, timer, motion sensor, daylight switch or other automated switch or control (or combination thereof) unless specified by the manufacturer as being compatible with such device or combinations of devices.

(4) If connected to a dimmer, the installer shall test the equipment through its full dimming range to ensure that the equipment works to the satisfaction of the customer.

(5) Where installed equipment causes sub-optimal operation, the installer shall either reinstall equipment equivalent to the original equipment or replace any components of the equipment that are causing the installation not to operate, at no expense to the resident. Such a request for reinstatement must be acted upon if made within 20 business days of the installation of the new equipment.

(6) The Activity must be performed by a licensed electrical worker under the supervision of a licensed electrical contractor.

6. ACTIVITY REPS CREDITS

The normalised REPS credits per unit installed is equal to:

Normalised REPS credits (GJ) = The relevant Productivity factor in the table below:

P = power of existing luminaire (W)	Min. Luminaire Light Output (lm)	Standard LED Productivity Factor	High Efficiency LED Productivity Factor
100 < P < 150W	1500	1.019	1.097
150 ≤ P < 200W	2500	1.564	1.694
200 ≤ P < 300W	3500	2.109	2.291
300 ≤ P < 500W	5700	3.226	3.523
500 ≤ P	10000	5.448	5.969

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

All reasonable endeavours should be undertaken to recycle removed equipment.

Designlights requirements are available at:

www.designlights.org/Content/QPL/ProductSubmit/CategorySpecifications

5.13 Commercial Lighting Upgrade CL1 (Commercial Only)

Commercial Lighting Upgrade; Commercial Only	Activity No.
	CL1

1. ACTIVITY SPECIFIC DEFINITIONS

Commercial Lighting is defined as lighting equipment in use in South Australia for the purpose of:

- lighting for roads and public spaces
- traffic signals
- lighting for commercial or industrial premises classified under the Building Code of Australia as either Class 3, 5, 6, 7, 8, 9, 10 or the Common Areas of Class 2

Upgrade means the replacement and/or modification of Existing Lighting Equipment with New Lighting Equipment resulting in a reduction in the consumption of electricity compared to what would have otherwise been consumed

Existing Lighting Equipment means the equipment that provides lighting services that was already installed and in working order at the time of implementation of the activity, including luminaires and/or lamps, control gear, and control systems

New Lighting Equipment means the equipment that provides lighting services that is installed as a result of the Upgrade for the purpose of the Activity, including luminaires and/or lamps, Control Gear, and control systems

Control Gear means the lighting ballast, transformer or driver.

ELV means extra low voltage, not exceeding 50 volts alternating current (AC) or 120 volts ripple free direct current (DC), as defined in AS/NZS 3000 Wiring rules

Small Energy Consuming Customer means a customer consuming less than 160MWh of electricity per National Meter Identifier in the 12 months prior to the upgrade

Large Energy Consuming Customer means a customer consuming more than 160MWh of electricity per National Meter Identifier in the 12 months prior to the upgrade

2. ACTIVITY DESCRIPTION (SUMMARY)

The Activity involves an upgrade to the energy performance of Commercial Lighting that results in REPS credits as calculated in accordance with this specification.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) The existing lighting equipment must be in working order at time of the upgrade.

(2) The following Activities are excluded:

- New lighting installations undertaken as part of new work or refurbishments that require development approval under the *Development Act 1993* or the *Planning, Development and Infrastructure Act 2016.*
- Task lighting installations such as portable lighting or desk lamps.
- Installing T5 adaptor kits or installing new lamps into existing T5 adaptor kit fittings.

(3) Where it can be demonstrated that the lamps being replaced have not previously been installed for the purposes of REPS, Activity CL1 can be delivered twice per premises, providing all other aspects of the specification are met.

Additional requirements where recipient of the activity is a small energy consuming customer

The recipient of the activity must cause payment to the installer for the goods and services provided, with the minimum payment being $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

Additional requirements where recipient of the activity is a large energy consuming customer

The recipient of the activity must cause payment to the installer for the goods and services provided, with the minimum payment requirement being $1.70 (including GST) per normalised REPS credits as calculated in accordance with this specification.

4. INSTALLED PRODUCT REQUIREMENTS

(1) The new lighting equipment must come with a minimum 2 years replacement warranty, and new High Bay lighting with a minimum 5 years replacement warranty.

(2) At the time of installation, the new lighting equipment must:

- be on the list of products accepted for installation under the NSW 'Energy Savings Scheme' (ESS), as published by the ESS Administrator, or
- be an LED linear tube product that is listed on the Victorian Energy Efficiency Target Scheme Product Register and complies with all relevant requirements of AS/NZS60598.2.1:2014, including amendments.

(3) Control gear for linear fluorescent lamps manufactured in or imported into Australia must comply with the requirements in AS/NZS 4783.2-2002.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) The Activity must be performed by a licensed electrical worker under the supervision of a licensed electrical contractor.

(2) The Activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the Activity, including any licensing, registration, statutory approval, Activity certification, health, safety, environmental or waste disposal requirements.

(3) Where relevant, the Activity must achieve the relevant requirements of:

- AS 2293 Emergency escape lighting and exit signs for buildings
- AS/NZS 1158 Lighting for roads and Public Spaces
- AS 2144 traffic signal lanterns

(4) Where linear florescent luminaires are modified to accept linear LED tubes, an Electrical Certificate of Compliance must be provided and retained for verification purposes. The Certificate of Compliance must define the modification work for each type of linear fluorescent luminaire, specify that the modification work include electrical isolation of the legacy ballast (and capacitor if one was present), and specify that the work was performed in accordance with the safety requirements of AS/NZS60598.2.1:2014, including amendments.

(5) All removed lighting and equipment must be removed in accordance with the Environment Protection (Waste to Resources) Policy 2010 under the *Environment Protection Act 1993*. No fluorescent lighting or any other lighting that contains mercury is to be disposed of to landfill.

(6) Where linear LED tubes are installed in accordance with the instructions provided with the LED tube, but without removal of legacy ballasts and/or capacitors, installers must:

- Measure and assess the true power factor of the upgraded lighting circuit, with the aim to show the upgrade should not have a detrimental impact on the customer's compliance with:
    - Section 6.5.3 of SA Power Networks Service and Installation Rules, 2016. This requirement can be met by any reasonably verifiable and technically sound means proposed by the installer, and
    - AS/NZS 3000 wiring rules.
- Obtain ESCOSA approval for the proposed power factor measurement and assessment methodology prior to proceeding with the installation. Once approved, a methodology can be used across multiple installations, providing the methodology does not change. Evidence that a methodology is approved by the Essential Services Commission of Victoria for the purposes of the Victorian Energy Efficiency Target Scheme will be sufficient to meet this installation requirement.

(7) Each space, after implementation of the Lighting Upgrade must achieve:

- the relevant requirements of AS/NZS 1680.
- the requirements of the NCC section F4.4, Artificial Lighting.
- an Illumination Power Density that equals or is less than the maximum Illumination Power Density for each space, as defined in Part J6 of the NCC.

Additional requirements where recipient of the activity is a small energy consuming customer:

(8) Where the new lighting installed equipment causes sub-optimal operation, or has not been completed to the demonstrated satisfaction of the recipient with regards to the colour temperature, colour rendering and the illumination levels of the new lighting, the installer shall either reinstall equipment equivalent to the original equipment or replace any components of the equipment that are causing the installation not to operate, at no expense to the recipient. Such a request for reinstatement must be acted upon if made within 20 business days of the installation of the new equipment.

(9) The installer must make best endeavours to avoid compromising lighting service levels, and lux levels must be maintained at least at the levels prior to the Activity.

6. REPORTING REQUIREMENTS

For verification purposes, the following records will be retained in relation to the Activity:

(1) Site Name.

(2) Site Address.

(3) The classification of the commercial premises in accordance with Australian and New Zealand Standard Industrial Classification (ANZSIC) codes at the divisional level.

(4) Date of Activity.

(5) REPS credits calculated in accordance with the REPS credits requirements in this specification.

(6) An output report from the ESS Commercial Lighting Calculation Tool (www.ess.nsw.gov.au/Methods_for_calculating_energy_savings/Commercial_Lighting) - produced using the version of the Calculation Tool current at the time the Activity is undertaken.

(7) All evidence requirements specified by ESCOSA including those required by ESCOSA REES Bulletin No. 20 'REES Commercial Lighting Activities'.

(8) Proof that all removed lighting equipment (including lamps and control gear) has been properly decommissioned including proof of correct recycling or disposal.

(9) For linear LED tubes installed without removal of legacy ballasts and/or capacitors, evidence of the true power factor measurement and assessment approach used, and the result of the measurement made.

(10) Where linear florescent luminaires are modified to accept linear LED tubes, written evidence that the recipient has received, and acknowledged receipt of, written information that the modification work will likely void the original luminaire manufacturer's warranty.

(11) Evidence that each space, after implementation of the Lighting Upgrade achieves:

- the relevant requirements of AS/NZS 1680.
- the requirements of the NCC section F4.4, Artificial Lighting.
- an Illumination Power Density that equals or is less than the maximum Illumination Power Density for each space, as defined in Part J6 of the NCC.

Additional requirements where recipient of the activity is a small energy consuming customer:

(12) Evidence that the recipient has received, and acknowledges receipt of, written information on:

(a) the details of the new lighting equipment, including colour temperature, colour rendering and illumination levels, and

(b) the steps the recipient can take should the new lighting equipment be sub-optimal or unsatisfactory.

Additional requirements where recipient of the activity is a large energy consuming customer:

(13) A valid tax invoice, clearly showing the completion date, the address, the name and contact details of the person billed for the installation, and the amount charged for the installation.

7. ACTIVITY REPS CREDITS

The normalised energy saving from undertaking this Activity is equal to:

Normalised REPS credits (GJ) = output from the ESS Commercial Lighting Calculation Tool as expressed in 'saved MWh' x 3.6 x Productivity Factor (up to a maximum of 1,800 GJ).

Where the productivity Factor = **1.207**

With the exception of lamp only replacements of fluorescent tubes with LED tube products, REPS credits for this Activity will be calculated using the deemed energy savings method from Clause 9.4 of the NSW 'Energy Savings Scheme Rule of 2009, Effective from 28 April 2017', or a current rule that supersedes this.

Calculations will use the factors and values from Schedule A – Default Factors and Classifications of the NSW 'Energy Savings Scheme Rule of 2009, Effective from 28 April 2017', or a current rule that supersedes this.

For lamp only replacements of fluorescent tubes with LED tube products REPS credits will be calculated using the ESS Commercial Lighting Calculation Tool using the lighting category ‘LED Lamp Only 240V – Self Ballasted’.

Where linear florescent luminaires are modified to accept linear LED tubes, REPS credits will be calculated using the ESS Commercial Lighting Calculation Tool using the lighting category ‘Modified Luminaire (LED Linear Lamp)’.

8. GUIDANCE NOTES

Eligible products under the NSW Energy Savings scheme include products of a class listed in the following:

NSW – ‘Energy Savings Scheme Rule of 2009, Effective from 28 April 2017’ - Schedule A – Table A9.1 ‘Standards Equipment Classes for Lighting Upgrades’, or a current rule that supersedes this, or

NSW ‘Energy Savings Scheme Rule of 2009, Effective from 28 April 2017’– Table A9.3 ‘Other Equipment Classes for Lighting Upgrades’, or a current rule that supersedes this - Schedule A, or

Products listed under NSW Energy Saving Scheme “Public List of Accepted Emerging Lighting Technologies”:

https://www.ess.nsw.gov.au/Home/About-ESS/Lighting-equipment-requirements/Commercial-lighting-requirements

5.14 Install Standby Power Controllers – Audio Visual (AV) SPC1 (Residential Only)

Install Standby Power Controllers – Audio Visual (AV); Residential Only	Activity No.
	SPC1

1. ACTIVITY SPECIFIC DEFINITIONS

Approved laboratory test is a test approved by the Essential Services Commission of South Australia (the Commission), and in the absence of the Commission specifying an approved laboratory test is a test that meets the Essential Services Commission of Victoria published testing requirements. The Essential Services Commission of Victoria laboratory testing requirements are provided in the document "Explanatory Note-Laboratory Tests for Standby Power Controllers", Version 1.2 – 8 October 2012, as amended from time to time, available at: www.veet.vic.gov.au/Public/Public.aspx?id=Publications

Mains power switching device means a relay or other device that switches the power to the controlled appliances on or off

Master/slave arrangement means an arrangement where the standby power controller is connected to an uncontrolled master appliance, which's current or power is solely used to control the electrical input to controlled appliances connected to the standby power controller

Advanced SPC means a product that meets the installed product requirements; and does not operate solely on the basis of a master/slave arrangement; and has been subjected to a field trial approved by the Essential Services Commission of Victoria

Simple SPC means a product that meets the installed product requirements

2. ACTIVITY DESCRIPTION (SUMMARY)

Install a standby power controller to automatically reduce the standby energy consumption of residential audio-visual equipment.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

This Activity can be undertaken in any residential household in South Australia where the minimum installation requirements can be met.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

The standby power controller (AV) must meet the requirements of any applicable Australian Standard in force in respect of standby power controllers. In the absence of any applicable Australian Standard the standby power controller (AV) must, when tested in accordance with an approved laboratory test, be determined to be suitable for use in an audio-visual environment and demonstrated to:

(1) Be capable of controlling the power of at least 4 appliances (whether directly or indirectly)

(2) Be fitted with a mains power switching device that is rated to a minimum of 50,000 switching cycles

(3) Have an electric power consumption of not more than 1 watt when tested in accordance with the laboratory test

(4) Automatically disconnect mains power from controlled appliances: (a) In the case of a product that relies on a master/slave arrangement – when the master appliance is turned off; (b) In the case of a product that relies on sensing infra-red signals from the remote controls of controlled appliances – after a period of time specified in the laboratory test when the product does not detect infra-red signals from those remote controls that are triggered by a user

(5) Automatically reconnect mains power to the controlled appliances only when: (a) in the case of a product that relies on a master/slave arrangement – when the master appliance is turned on; (b) in the case of a product that relies on sensing infra-red signals from the remote controls of controlled appliances – when any of the controlled appliances are operated by a user

(6) Be able, at the time of installation, to disconnect mains power from or reconnect mains power to controlled appliances without having to be set up to have those functions assigned to the operation of an existing appliance remote control and

(7) Not require manual setting of a current or power threshold.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) The standby power controller must be connected to at least 2 controlled appliances at the time of installation.

(2) The total number of standby powers controllers (IT and AV) installed at a premises must not exceed three.

(3) Where it can be demonstrated that the occupants have changed at premises where standby power controllers were installed for the purposes of REPS, a maximum of 3 further standby power controllers (IT and AV) may be installed at that premises.

(4) The Commission must approve the manner of installation, and the form and manner of training (including on-going support) that must be provided to the residential customer, prior to the activity being undertaken.

(5) A person or entity undertaking this activity shall use best endeavours to ensure any installations are targeted at high usage applications in the first instance.

6. ACTIVITY REPS CREDITS

The normalised REPS credits from this activity per unit installed is equal to:

Normalised REPS credits (GJ) = The relevant Productivity factor in the table below:

Activity Description – type installed	**Productivity Factor**
Advanced SPC	**1.7**
Simple SPC	**0.85**

5.15 Install Standby Power Controllers – Information Technology (IT) SPC2 (Residential Only)

Install Standby Power Controllers – Information Technology (IT); Residential Only	Activity No.
	SPC2

1. ACTIVITY SPECIFIC DEFINITIONS

Approved laboratory test is a test approved by the Essential Services Commission of South Australia (the Commission), and in the absence of the Commission specifying an approved laboratory test a test that meets the Essential Services Commission of Victoria published testing requirements. The Essential Services Commission of Victoria laboratory testing requirements are provided in the document "Explanatory Note-Laboratory Tests for Standby Power Controllers", Version 1.2 – 8 October 2012, as amended from time to time, available at: www.veet.vic.gov.au/Public/Public.aspx?id=Publications

Mains power switching device means a relay or other device that switches the power to the controlled appliances on or off

Master/slave arrangement means an arrangement where the standby power controller is connected to an uncontrolled master appliance, who's current or power is solely used to control the electrical input to controlled appliances connected to the standby power controller

Active state in relation to a computer, means a state in which the computer is carrying out useful work in response to prior or concurrent (a) user input; or (b) Instruction over a network

Off mode in relation to a computer, means a low power state that the computer is capable of entering automatically after a period of inactivity or by manual selection

Advanced SPC means a product that meets the installed product requirements; and is capable of automatically disconnecting mains power to controlled appliances when the master computer enters Sleep Mode; and has been subjected to a field trial approved by the Essential Services Commission of Victoria

Simple SPC means a product that meets the installed product requirements

2. ACTIVITY DESCRIPTION (SUMMARY)

Install a standby power controller to automatically reduce the standby energy consumption of residential information technology equipment (standby power controller (IT)).

3. ACTIVITY ELIGIBILITY REQUIREMENTS

This Activity can be undertaken in any residential household in South Australia where the minimum installation requirements can be met.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

The standby power controller (IT) must meet the requirements of any applicable Australian Standard in force in respect of standby power controllers. In the absence of any applicable Australian Standard the standby power controller (IT) must, when tested in accordance with an approved laboratory test, be determined to be suitable for use in an information technology environment and demonstrated to:

(1) Be suitable for use with desktop and notebook computers that are not more than 2 years old

(2) Be capable of controlling the power of at least 4 appliances (whether directly or indirectly)

(3) Be fitted with a mains power switching device that is rated to a minimum of 50,000 switching cycles

(4) Have an electric power consumption of not more than 1 watt when tested in accordance with the laboratory test

(5) Automatically disconnect mains power from controlled appliances when the master computer is switched to Off Mode

(6) Automatically reconnect mains power to the controlled appliances when the master computer enters Active State

(7) Not be reliant on a universal serial bus connection to determine the operating mode of the computer

(8) Be able, at the time of installation, to disconnect mains power from or reconnect mains power to controlled appliances without having to be set up to have those functions assigned to the operation of an existing appliance remote control and

(9) Not require manual setting of a current or power threshold.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) The standby power controller must be connected to at least 2 controlled appliances at the time of installation.

(2) The total number of standby powers controllers (IT and AV) installed at a premises must not exceed three.

(3) Where it can be demonstrated that the occupants have changed at premises where standby power controllers were installed for the purposes of REPS, a maximum of 3 further standby power controllers (IT and AV) may be installed at that premises.

(4) The Commission must approve the manner of installation, and the form and manner of training (including on-going support) that must be provided to the residential customer, prior to the activity being undertaken.

(5) A person or entity undertaking this activity shall use best endeavours to ensure any installations are targeted at high usage applications in the first instance.

6. ACTIVITY REPS CREDITS

The normalised REPS credits from this activity per unit installed is equal to:

Normalised REPS credits (GJ)= The relevant Productivity factor in the table below:

Activity Description – type installed	**Productivity Factor**
Advanced SPC	**1.82**
Simple SPC installed on any equipment type	**0.91**

5.16 Purchase a High Efficiency New Refrigerator or Refrigerator-Freezer APP1A (Residential or Commercial)

Purchase High Efficiency New Refrigerator or Refrigerator-Freezer; Residential or Commercial	Activity No.
	APP1A

1. ACTIVITY SPECIFIC DEFINITIONS

Refrigerator means a refrigerating appliance registered for energy labelling and MEPS under standard AS/NZS 4474.2:2009 or AS/NZS4474:2018 classified as Group 1, 4, 5T, 5B or 5S

Gross volume is the total gross volume of all compartments as determined in accordance with AS/NZS 4474.1 or AS/NZS IEC 62552.3 in litres

2. ACTIVITY DESCRIPTION (SUMMARY)

Purchase an efficient new refrigerator or refrigerator-freezer.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any compliant product sold in a retail outlet in South Australia for use in a residential or commercial premises in South Australia.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. PRODUCT REQUIREMENTS

(1) A Group 1 product shall have a total gross volume in the size range 100 to 500 litres and shall achieve a star rating index of not less than 3.5 in accordance with AS/NZS 4474.2 or AS/NZS4474:2018.

(2) A Group 4, 5T, 5B or 5S product shall have a total gross volume in the size range 100 to 700 litres and shall achieve a star rating index of not less than 3.5 in accordance with AS/NZS 4474.2 or AS/NZS4474:2018.

(3) The product shall have a valid registration with the GEMS regulator at the time of sale.

(4) The refrigerating appliance shall not have a designation of cooled appliance under AS/NZS 4474.1 or AS/NZS IEC 62552.1.

(5) The refrigerating appliance shall not be a wine storage appliance or have any compartment that is intended exclusively for wine or beverage storage.

5. MINIMUM INSTALLATION REQUIREMENTS

None.

6. ACTIVITY REPS CREDITS

The normalised REPS credits per appliance purchased is equal to:

Normalised REPS credits (GJ) = The relevant Productivity factor in the tables below. **Group 1**	**Star Rating**									
Gross Volume	**3.5 to < 4 Stars**	**4 to < 4.5 Stars**	**4.5 to < 5 Stars**	**5 to < 5.5 Stars**	**5.5 to < 6 Stars**	**6 to < 7 Stars**	**7 to < 8 Stars**	**8 to < 9 Stars**	**9 to < 10 Stars**	**10 Stars**
100 to < 150 L	3.1	4.0	4.7	5.4	6.0	6.5	7.4	8.1	8.6	8.9
150 to < 200 L	3.3	4.3	5.1	5.9	6.5	7.1	8.0	8.8	9.3	9.6
200 to < 250 L	3.6	4.6	5.5	6.3	7.0	7.6	8.6	9.4	10.0	10.3
250 to < 300 L	3.8	4.9	5.8	6.7	7.4	8.1	9.1	10.0	10.6	11.0
300 to < 350 L	4.0	5.1	6.2	7.0	7.8	8.5	9.6	10.5	11.2	11.6
350 to < 400 L	4.2	5.4	6.5	7.4	8.2	8.9	10.1	11.0	11.7	12.1
400 to < 450 L	4.4	5.6	6.8	7.7	8.6	9.3	10.6	11.5	12.3	12.7
450 to 500 L	4.6	5.9	7.0	8.0	8.9	9.7	11.0	12.0	12.8	13.2

Group 4, 5T,5B and 5S	Star Rating									
Gross Volume	3.5 to < 4 Stars	4 to < 4.5 Stars	4.5 to < 5 Stars	5 to < 5.5 Stars	5.5 to < 6 Stars	6 to < 7 Stars	7 to < 8 Stars	8 to < 9 Stars	9 to < 10 Stars	10 Stars
100 to < 150 L	1.5	2.7	3.7	4.6	5.4	6.1	7.3	8.1	8.8	9.2
150 to < 200 L	1.7	3.1	4.3	5.3	6.3	7.1	8.4	9.4	10.2	10.7
200 to < 250 L	1.9	3.5	4.8	6.0	7.0	7.9	9.4	10.6	11.5	12.0
250 to < 300 L	2.1	3.8	5.3	6.6	7.8	8.8	10.4	11.7	12.7	13.2
300 to < 350 L	2.3	4.2	5.8	7.2	8.4	9.5	11.3	12.7	13.8	14.4
350 to < 400 L	2.5	4.5	6.2	7.7	9.1	10.3	12.2	13.7	14.8	15.5
400 to < 450 L	2.7	4.8	6.6	8.3	9.7	10.9	13.0	14.6	15.8	16.6
450 to < 500 L	2.8	5.1	7.0	8.8	10.3	11.6	13.8	15.5	16.8	17.6
500 to < 550 L	3.0	5.4	7.4	9.3	10.9	12.3	14.6	16.4	17.7	18.6
550 to < 600 L	3.1	5.6	7.8	9.7	11.4	12.9	15.3	17.2	18.6	19.5
600 to < 650 L	3.3	5.9	8.2	10.2	12.0	13.5	16.1	18.0	19.5	20.4
650 to 700 L	3.4	6.2	8.5	10.6	12.5	14.1	16.8	18.8	20.4	21.3

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

(1) This activity may be undertaken in conjunction with activity APP2, in which case credits for both this activity and activity APP2 may be claimed. Note, this only applies in cases where activity APP2 relates to removal and disposal of a main (primary) appliance and not in relation to a "secondary" appliance as defined under activity APP2.

(2) Information on registration data for current models can be obtained from: http://reg.energyrating.gov.au/comparator/product_types/28/search/.

A description of refrigerator and freezer Groups (called "Type" in the above noted website) is provided at, www.energyrating.gov.au/products-themes/refrigeration/domestic-refrigeration/meps/

(3) Cooled appliance has the meaning as in AS/NZS 4474.1 or AS/NZS 4474, being an appliance which cannot be classified as a refrigerator, refrigerator/freezer or freezer.

5.17 Purchase a High Efficiency New Freezer APP1B (Residential or Commercial)

Purchase High Efficiency New Freezer; Residential or Commercial	Activity No.
	APP1B

1. ACTIVITY SPECIFIC DEFINITIONS

Freezer means a refrigerating appliance registered for energy labelling and MEPS under standard AS/NZS 4474.2:2009 or AS/NZS4474:2018 classified as Group 6C, 6U or 7

CEC is the Comparative Energy Consumption shown on the energy label and entered in the product registration in kWh/year

Gross volume is the total gross volume of all compartments as determined in accordance with AS/NZS 4474.1 or AS/NZS IEC 62552.3 in litres

Adjusted volume is the adjusted volume determined in accordance with AS/NZS 4474.2:2009 or AS/NZS IEC 62552.3 and entered in the product registration in litres

2. ACTIVITY DESCRIPTION (SUMMARY)

Purchase an efficient new (separate) freezer.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any compliant product sold in a retail outlet in South Australia for use in a residential or commercial premises in South Australia.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

A Group 6C product shall have a total gross volume in the size range 100 to 700 litres and shall achieve a star rating index of not less than 3.5 in accordance with AS/NZS 4474.2 or AS/NZS4474:2018.

A Group 6U or 7 product shall have a total gross volume in the size range 100 to 400 litres and shall achieve a star rating index of not less than 3.1 in accordance with AS/NZS 4474.2 or AS/NZS4474:2018.

The product shall have a valid registration with GEMS regulator at the time of sale.

The refrigerating appliance shall not have a designation of cooled appliance under AS/NZS 4474.1 or AS/NZS 4474.

The refrigerating appliance shall not be a wine storage appliance or have any compartment that is intended exclusively for wine or beverage storage.

5. MINIMUM INSTALLATION REQUIREMENTS

None.

6. ACTIVITY REPS CREDITS

The normalised REPS credits per appliance purchased is equal to:

Normalised REPS credits (GJ) = The relevant Productivity factor in the tables below.

Group 6C	**Star Rating**									
Gross Volume	**3.5 to < 4 Stars**	**4 to < 4.5 Stars**	**4.5 to < 5 Stars**	**5 to < 5.5 Stars**	**5.5 to < 6 Stars**	**6 to < 7 Stars**	**7 to < 8 Stars**	**8 to < 9 Stars**	**9 to < 10 Stars**	**10 Stars**
100 to < 150 L	1.7	2.9	3.9	4.7	5.5	6.2	7.3	8.1	8.8	9.2
150 to < 200 L	2.0	3.3	4.5	5.5	6.4	7.2	8.5	9.5	10.2	10.7
200 to < 250 L	2.2	3.7	5.0	6.2	7.2	8.1	9.5	10.6	11.5	12.0
250 to < 300 L	2.5	4.1	5.6	6.8	7.9	8.9	10.5	11.7	12.7	13.3
300 to < 350 L	2.7	4.5	6.1	7.4	8.6	9.7	11.4	12.8	13.8	14.4
350 to < 400 L	2.9	4.8	6.5	8.0	9.3	10.4	12.3	13.8	14.9	15.5
400 to < 450 L	3.1	5.2	7.0	8.5	9.9	11.2	13.2	14.7	15.9	16.6
450 to < 500 L	3.3	5.5	7.4	9.1	10.6	11.8	14.0	15.6	16.9	17.6
500 to < 550 L	3.5	5.8	7.8	9.6	11.1	12.5	14.8	16.5	17.8	18.6
550 to < 600 L	3.7	6.1	8.2	10.1	11.7	13.2	15.5	17.3	18.8	19.6
600 to < 650 L	3.8	6.4	8.6	10.6	12.3	13.8	16.3	18.2	19.6	20.5
650 to 700 L	4.0	6.7	9.0	11.0	12.8	14.4	17.0	19.0	20.5	21.4

Group 6u & 7	Star Rating										
Gross Volume	3.1 to < 3.5 Stars	3.5 to < 4 Stars	4 to < 4.5 Stars	4.5 to < 5 Stars	5 to < 5.5 Stars	5.5 to < 6 Stars	6 to < 7 Stars	7 to < 8 Stars	8 to < 9 Stars	9 to < 10 Stars	10 Stars
100 to < 150 L	1.6	2.6	3.8	4.8	5.6	6.4	7.1	8.2	9.0	9.7	10.1
150 to < 200 L	1.9	3.0	4.4	5.5	6.5	7.4	8.2	9.5	10.5	11.3	11.7
200 to < 250 L	2.1	3.4	4.9	6.2	7.4	8.4	9.2	10.7	11.8	12.7	13.2
250 to < 300 L	2.3	3.8	5.4	6.9	8.1	9.2	10.2	11.8	13.0	14.0	14.6
300 to < 350 L	2.5	4.1	5.9	7.5	8.8	10.0	11.1	12.8	14.2	15.2	15.8
350 to < 400 L	2.7	4.4	6.3	8.0	9.5	10.8	12.0	13.8	15.3	16.4	17.1

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Information on registration data for current models can be obtained from the Downloadable CSV file available at: http://reg.energyrating.gov.au/comparator/product_types/28/search/. Adjusted volume and CEC are obtained from the “Adjusted volume” and “CEC” columns of the CSV file.

Cooled appliance has the meaning as in AS/NZS 4474.1 or AS/NZS 4474., being an appliance which cannot be classified as a refrigerator, refrigerator/freezer or freezer.

5.18 Purchase a High Efficiency New Clothes Dryer APP1D (Residential or Commercial)

Purchase a High Efficiency New Clothes Dryer; Residential or Commercial	Activity No.
	APP1D

1. ACTIVITY SPECIFIC DEFINITIONS

Electric clothes dryer means a rotary clothes dryer (tumble dryer) or the dryer part of a combination washer dryer registered for energy labelling under standard AS/NZS 2442.2 and classified as a vented or condensing type

Star Rating is the Star rating shown on the energy label and entered in the product registration

Rated capacity is the rated capacity of the appliance as determined in accordance with AS/NZS 2442.1 and entered in the product registration in kg

2. ACTIVITY DESCRIPTION (SUMMARY)

Purchase a high efficiency new electric clothes dryer or washer dryer.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any compliant product sold in a retail outlet in South Australia for use in a residential or commercial premises in South Australia.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

(1) An electric clothes dryer shall achieve a star rating index of not less than 5.5 in accordance with AS/NZS 2442.2. In the case of a combination washer dryer, the minimum star rating index shall be 5.5 in accordance with AS/NZS 2442.2.

(2) The electric clothes dryer shall have a rated capacity of not less than 3.0 kg in accordance with AS/NZS 2442.1.

(3) The product shall have a valid registration with an Australian or New Zealand energy regulator at the time of sale.

5. MINIMUM INSTALLATION REQUIREMENTS

None.

6. ACTIVITY REPS CREDITS

The normalised REPS credits per appliance purchased is equal to:

Normalised REPS credits (GJ)= The relevant Productivity factor in the table below.

Rated Capacity	Star Rating						
		5.5 to < 6 Stars	6 to < 7 Stars	7 to < 8 Stars	8 to < 9 Stars	9 to < 10 Stars	10 Stars
3 to < 3.5 Kg		3.07	3.67	4.36	5.0	5.5	5.7
3.5 to < 4 Kg		3.5	4.2	5.0	5.7	6.3	6.5
4 to < 4.5 Kg		4.0	4.8	5.7	6.5	7.1	7.4
4.5 to < 5 Kg		4.5	5.4	6.4	7.2	8.0	8.3
5 to < 5.5 Kg		5.0	5.9	7.0	8.0	8.8	9.2
5.5 to < 6 Kg		5.4	6.5	7.7	8.8	9.6	10.0
6 to < 6.5 Kg		5.9	7.1	8.4	9.5	10.5	10.9
6.5 to < 7 Kg		6.4	7.6	9.1	10.3	11.3	11.8
7 to < 7.5 Kg		6.8	8.2	9.7	11.0	12.1	12.6
7.5 to < 8 Kg		7.3	8.7	10.4	11.8	13.0	13.5
8 to < 8.5 Kg		7.8	9.3	11.1	12.6	13.8	14.4
8.5 to < 9 Kg		8.3	9.9	11.7	13.3	14.7	15.3
9 to < 9.5 Kg		8.7	10.4	12.4	14.1	15.5	16.1
9.5 to < 10 Kg		9.2	11.0	13.1	14.8	16.3	17.0
10 Kg or more		9.68	11.57	13.75	15.61	17.19	17.88

Note: The dryer component of an eligible washer dryer must achieve a star rating of not less than 5.5.

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Information on registration data for current models can be obtained from:
http://reg.energyrating.gov.au/comparator/product_types/35/search/.

5.19 Remove and Dispose of an Unwanted Refrigerator or Freezer APP2 (Residential or Commercial)

Remove and Dispose of an Unwanted Refrigerator or Freezer; Residential or Commercial	Activity No.
	APP2

1. ACTIVITY SPECIFIC DEFINITIONS

Single Door Refrigerator means a refrigerating appliance that could be classified as Group 1, 2, 3, under standard AS/NZS 4474.2 (or under AS1430)

Two Door Refrigerator/Freezer means a refrigerating appliance that could be classified as Group 4, 5T, 5B or 5S under standard AS/NZS 4474.2 (or under AS1430). (Note: This includes products with more than 2 doors)

Freezer only means a refrigerating appliance that could be classified as Group 6C, 6U or 7 under standard AS/NZS 4474.2 (or under AS1430)

Secondary single door refrigerator means, after the removal of the target appliance, a main single door refrigerator or two door refrigerator/freezer remains installed and operating

Secondary two door refrigerator/Freezer means, after the removal of the target appliance, a main single door refrigerator or a two door refrigerator/freezer remains installed and operating

Secondary freezer only means, after the removal of the target appliance, a main freezer remains installed and operating

Height means the measured external height of the refrigerating appliance from the lowest part of the cabinet wall or door (excluding any clearance or air gap to the floor) to the top of the appliance in metres

Priority Group Household means households as defined in the Part 4 of the Electricity (General) Regulations 2012 under the *Electricity Act 1996*, and the Part 4 of the Gas Regulations 2012 under the *Gas Act 1997.*

2. ACTIVITY DESCRIPTION (SUMMARY)

Remove and dispose of an existing single door refrigerator, two door refrigerator/freezer or freezer only from a residential or commercial premises.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential or commercial premises in South Australia where the installed product requirements can be met. More than one secondary single door refrigerator, two door refrigerator/freezer or freezer only, may be removed.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. PRODUCT REQUIREMENTS

(1) The target appliance must be in working order.

(2) The appliance shall operate on single phase mains power (nominally 230V, 50Hz).

(3) The appliance shall be a household type of refrigeration appliance that could be classified under AS/NZS 4474 or AS 1430.

(4) The refrigerating appliance shall use the vapour compression cycle (absorption and piezoelectric types are not eligible).

(5) The refrigerating appliance shall not be a wine storage appliance.

(6) Portable appliances, camping appliances or appliances installed in caravans are not eligible.

5. MINIMUM REMOVAL REQUIREMENTS

(1) The single door refrigerator, two door refrigerator/freezer or freezer only must be removed from the premises and decommissioned.

(2) Removed single door refrigerator, two door refrigerator/freezer or freezer only shall have refrigerants and any other scheduled substances disposed of in accordance with the Australian and New Zealand refrigerant handling code of practice as established under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* (Cth).

(3) Removed single door refrigerator, two door refrigerator/freezer or freezer only shall be disposed of in accordance with the Environment Protection (Waste to Resources) Policy 2010, which bans whitegoods from disposal to landfill in South Australia.

(4) Where possible, the type of refrigerant used in the product shall be established from markings on the product and recorded in the activity schedule. A product with CFC R12 refrigerant is deemed to have a year of manufacture of before 1996.

(5) For verification purposes, the following records will be retained for each appliance removed:

- A photograph of the target appliance in its location prior to removal (date and location stamped).
- A record of the measured height for a single door refrigerator.
- A record of the type of refrigerant used in the appliance, where known, as established from markings on the appliance or compressor.
- Proof that the appliance has been properly disposed of, such as recycling receipts and invoices.
- Proof that the appliance has been degassed by technicians licensed under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* (Cth).
- Activity reference number being claimed from the tables below.

6. ACTIVITY REPS CREDITS

Normalised REPS credits (GJ) = The relevant Productivity factor in the tables below.

Commercial and Non-Priority Group Households

Activity Reference Number	Type of Refrigerator/ Freezer	Year of Manufacture	Refrigerator/Freezer Configuration	Normalised REPS Credits (GJ)
APP2 (1)	Main (Primary)	Pre 1996 (R12)	Single Door of ≥ 1150mm Height	11.00
APP2 (2)	Main (Primary)	Pre 1996 (R12)	Single Door of < 1150mm height	4.23
APP2 (3)	Main (Primary)	Pre 1996 (R12)	Two door Refrigerator/Freezer	12.78
APP2 (4)	Main (Primary)	Pre 1996 (R12)	Freezer only	7.29
APP2 (5)	Main (Primary)	≥ 1996, or unknown	Single Door of ≥ 1150mm Height	5.99
APP2 (6)	Main (Primary)	≥ 1996, or unknown	Single Door of < 1150mm Height	1.84
APP2 (7)	Main (Primary)	≥ 1996, or unknown	Two door Refrigerator/Freezer	8.28
APP2 (8)	Main (Primary)	≥ 1996, or unknown	Freezer only	5.25
APP2 (9)	Secondary	Pre 1996 (R12)	Single Door of ≥ 1150mm Height	18.64
APP2 (10)	Secondary	Pre 1996 (R12)	Single Door of < 1150mm Height	7.17
APP2 (11)	Secondary	Pre 1996 (R12)	Two door Refrigerator/Freezer	21.65
APP2 (12)	Secondary	Pre 1996 (R12)	Freezer only	12.35
APP2 (13)	Secondary	≥ 1996, or unknown	Single Door of ≥ 1150mm Height	11.28
APP2 (14)	Secondary	≥ 1996, or unknown	Single Door of < 1150mm Height	3.47
APP2 (15)	Secondary	≥ 1996, or unknown	Two door Refrigerator/Freezer	15.59
APP2 (16)	Secondary	≥ 1996, or unknown	Freezer only	9.89

Priority Group Households Only

Activity Reference Number	Type of Refrigerator/ Freezer	Year of Manufacture	Refrigerator/Freezer Configuration	Normalised REPS Credits (GJ)
APP2 (17)	Main (Primary)	Any	Single Door of ≥ 1150mm Height	11.00
APP2 (18)	Main (Primary)	Any	Single Door of < 1150mm Height	4.23
APP2 (19)	Main (Primary)	Any	Two door Refrigerator/Freezer	12.78
APP2 (20)	Main (Primary)	Any	Freezer only	7.29

Activity Reference Number	Type of Refrigerator/ Freezer	Year of Manufacture	Refrigerator/Freezer Configuration	Normalised REPS Credits (GJ)
APP2 (21)	Secondary	Any	Single Door of ≥ 1150mm Height	18.64
APP2 (22)	Secondary	Any	Single Door of < 1150mm Height	7.17
APP2 (23)	Secondary	Any	Two door Refrigerator/Freezer	21.65
APP2 (24)	Secondary	Any	Freezer only	12.35

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

(1) There is no size restriction on eligible products. All reasonable endeavours should be used to recycle other components of removed appliances.

(2) For non-priority group households and commercial premises, if the refrigerant cannot be established as R12 or where the year of manufacture cannot be established, the year of manufacture shall be deemed as 1996 or later.

(3) This activity in relation to the removal and disposal of a main (primary) appliance may be undertaken in conjunction with activity APP1A in which case credits for both this activity and activity APP1A may be claimed.

5.20 Install a High Efficiency Pool Pump APP 3 (Residential Only)

Install a High Efficiency Pool Pump; Residential Only	Activity No.
	APP3

1. ACTIVITY SPECIFIC DEFINITIONS

Pool pump means a circulating pump for use with a residential pool or spa

Rated flow rate (Q) means the maximum rated flow rated in litres per minute that the pump can achieve under AS5102

2. ACTIVITY DESCRIPTION (SUMMARY)

Installation of a high efficiency pool pump.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential household in South Australia where the installed product requirements and minimum installation requirements can be met.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. INSTALLED PRODUCT REQUIREMENTS

(1) The pool pump shall be listed as part of the Equipment Energy Efficiency Program's pool pump labelling scheme and shall achieve a star rating of not less than 4 stars.

(2) The pool pumps shall be tested and rated in accordance with AS5102.1 and AS5012.2.

(3) The pool pump shall operate on single phase mains power.

(4) The pool pump shall have an input rating of not less than 100W and not more than 1500W.

(5) As a proclaimed product in South Australia, any pool pump shall meet the safety requirements of AS/NZS 60335.2.41:2004.

(6) Pool pumps shall be fitted with demand response controllers in accordance with AS/NZS 4755.3.2:2012 Demand response capabilities and supporting technologies for electrical products - Interaction of demand response enabling devices and electrical products - Operational instructions and connections for devices controlling swimming pool pump-units.

5. MINIMUM INSTALLATION REQUIREMENTS

Where required, an Electrical Certificate of Compliance must be provided and retained for verification purposes.

6. ACTIVITY REPS CREDITS

The normalised REPS credits per appliances purchased is equal to:

Normalised REPS credits GJ = Q x 0.000092 x [1298 – CEC]

Q is the rated flow rated in litres per minute (measured as per AS5102)

1298 is the 4 star CEC under the energy labelling scheme AS5102 in kWh/year

CEC is the comparative energy consumption of the product under the voluntary labelling scheme in kWh/year

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Details of the Equipment Energy Efficiency Program's pool pump labelling scheme are available at: www.energyrating.gov.au/products-themes/other/swimming-pool-pumps/voluntary-labelling/.

5.21 Install a High Efficiency Refrigerated Display Cabinet RDC1 (Commercial Only)

Install a High Efficiency Refrigerated Display Cabinet: Commercial Only	Activity No.
	RDC1

1. ACTIVITY SPECIFIC DEFINITIONS

Refrigerated Display Cabinet – A cabinet cooled by a refrigerating system which enables chilled and frozen foodstuffs placed therein for display to be maintained within prescribed temperature limits as defined within the scope of the standard AS 1731

Total display Area - Total visible product storage area, including visible area through the glazing, defined by the sum of horizontal and vertical projected surface areas of the net volume as defined in AS 1731.14, Appendix D and as listed in the eligible product GEMS registration - refer also to the guidance note below

M-package temperature class - Classification of M-package temperature according to temperatures to warmest and coldest M-packages during the temperature test defined in AS 1731.5 - refer also to the guidance note below

2. ACTIVITY DESCRIPTION (SUMMARY)

Installing a refrigerated display cabinet that is rated as 'high efficiency' within the meaning of the AS 1731 series of standards.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any commercial site in South Australia where the installed product requirements and minimum installation requirements can be met.

The recipient of the activity must cause payment to the installer for the goods and services provided, with the payment being a minimum of $33 (including GST). The minimum co-payment must be evidenced by a tax invoice and sales ledger, and other evidence as required by ESCOSA. The minimum co-payment must not be reimbursed, credited by a third party, or made by in-kind payment. This minimum co-payment requirement does not apply to priority group recipients.

4. PRODUCT REQUIREMENTS

(1) The RDC must be rated as 'high efficiency' within the meaning of the AS 1731 series of standards when tested in accordance with the AS 1731 series of standards as applicable and

(2) The RDC must be listed on the GEMS register of currently approved products and must be classified as “High Efficiency” in the GEMS registration and

(3) This activity applies only to M-package temperature classes M1, M2, L1 and L2 (as applicable) as defined in the AS 1731 series of standards and

(4) The activity does not cover the retrofitting of existing refrigeration equipment.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) Installation must be undertaken in strict accordance with the manufacturer’s instructions.

(2) If electrical work is required to be undertaken then this must be performed by a licensed electrical worker under the supervision of a licensed electrical contractor.

(3) If gassing or de-gassing is required to be undertaken then this must be carried out by technicians licensed under the Ozone Protection and *Synthetic Greenhouse Gas Management Act 1989* (Cth).

6. ACTIVITY REPS CREDITS

Normalised REPS credits (GJ) = TDA x Productivity Factor

Where:

TDA = The total display area of the refrigerated Display Cabinet as defined in the AS1731 series of standards and as listed in the eligible product GEMS registration.

Productivity Factor = The value as noted in the table below for the particular type of Refrigerated Display Cabinet supplied.

SELF-CONTAINED TYPE CABINETS

Activity Reference Number	Type of Refrigerated Display Cabinet (as defined in AS1731)	Productivity Factor
1	HC1	26.51
2	HC4	36.23
3	VC1	76.44
4	VC2	60.97
5	VC4 - solid door	87.92
6	VC4 - glass door	57.88
7	HF4	61.86
8	HF6	18.56
9	VF4 - solid door	96.76
10	VF4 - glass door	96.76

REMOTE TYPE CABINETS

Activity Reference Number	Type of Refrigerated Display Cabinet (as defined in AS1731)	Productivity Factor
11	RS 1 - Unlit shelves	36.94
12	RS 1 - Lit shelves	62.74
13	RS 2 - Unlit shelves	37.47
14	RS 2 - Lit shelves	50.01
15	RS 3 - Unlit shelves	39.94
16	RS 3 - Lit shelves	54.17
17	RS 4 - Glass door	26.16
18	RS 6 - Gravity coil	38.26
19	RS 6 - Fan coil	38.09
20	RS 7 - Fan coil	43.56
21	RS 8 - Gravity coil	32.96
22	RS 8 - Fan coil	35.52
23	RS 9 - Fan coil	35.61
24	RS 10 - Low	50.19
25	RS 11	102.59
26	RS 12	178.41
27	RS 13 - Solid sided	57.35

Activity Reference Number	Type of Refrigerated Display Cabinet (as defined in AS1731)	Productivity Factor
28	RS 13 - Glass sided	52.67
29	RS 14 - Solid sided	35.70
30	RS 14 - Glass sided	214.02
31	RS 15 - Glass door	85.45
32	RS 16 - Glass door	93.49
33	RS 18	78.03
34	RS 19	58.14

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Information on registration data for current models can be obtained at: http://reg.energyrating.gov.au/comparator/product_types/37/search/. Download the CSV file:

Total display area can be found under the column heading “total_dis”

M package temperature class can be found under the column heading “Temp_Class”

High Efficiency Status class can be found under the column heading “High Efficiency”

5.22 Switching Electric (Heat Pump or Resistance) Storage Water Heater to Off-Peak Controlled Load (OPCL) Tariff (Solar Sponge) WH3 (Residential or Small Business Only)

Switching Electric (Heat Pump or Resistance) Storage Water Heater to Off-Peak Controlled Load (OPCL) Tariff (Solar Sponge); Residential or Small Business Only	**Activity No.**
	WH3

1. ACTIVITY SPECIFIC DEFINITIONS

Off-Peak Controlled Load (OPCL) Tariff (Solar Sponge) means the companion electricity tariff for residential or small business electricity consumers, band 3 "Usage Solar Sponge" as defined in Table 17A-3, in section 17.4.2 of the South Australian Power Networks (SAPN) *2020-25 Tariff Structure Statement Part A* (June 2020)'; OR another tariff approved by the Minister.

2. ACTIVITY DESCRIPTION (SUMMARY)

Switch the metering and control of an electric (resistance) or electric (heat pump) storage water heater to the SAPN off-peak controlled load (OPCL) tariff (solar sponge) tariff, or another tariff approved by the Minister.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential or small business premises in South Australia where the installed product requirements and minimum installation requirements can be met.

Premises must have an electric (heat pump or resistance) storage water heater with a storage capacity of at least 125 litres.

Activity WH3 has must not have previously been implemented for the electricity customer at the same premises.

4. INSTALLED PRODUCT REQUIREMENTS

Electricity metering for the premises and the electric (heat pump or resistance) storage water heater must use a type 4 electricity meter, or an equivalent smart meter approved by the Minister.

5. MINIMUM INSTALLATION REQUIREMENTS

The customer must switch their electric (heat pump or resistance) storage water heater to the OPCL tariff (solar Sponge), as defined by SAPN, or anther tariff, approved by the Minister.

Customers must fulfil the requirements of the energy retailer and SAPN for utilisation of the off-peak controlled load tariff.

The electricity retailer tariff must fully pass through the SAPN OPCL (solar sponge) tariff.

6. ACTIVITY REPS CREDITS

The normalised REPS Credit from undertaking this activity is equal to:

Normalised REPS Credit (GJ) = Productivity factor, as per the table below:

Activity Description	Productivity Factor
Move Electric Heat Pump Water Heater to OPCL Tariff (Solar Sponge)	**15.65**
Move Electric Resistance Water Heater to OPCL Tariff (Solar Sponge)	**22.02**

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

The SAPN Off-Peak Controlled Load (OPCL) Tariff (Solar Sponge) tariff is based on usage from 9:30am to 3:30pm (Central Standard Time) with randomised start time of at least one hour. Charging is at 25% of the single rate price per kilowatt hour (kWh). The time clock is managed through the meter by the retailer and the metering coordinator.

The South Australian Power Networks (SAPN) *2020-25 Tariff Structure Statement Part A* (June 2020) can be found at: https://www.sapowernetworks.com.au/public/download.jsp?id=9508

This activity is deemed for 10 years.

5.23 Switch Household Electricity Plan from Single Rate Tariff to Time of Use (ToU) Tariff TOU1 (Residential Only)

Switch Household Electricity Plan from Single Rate tariff to Time of Use (ToU) Tariff; Residential Only	Activity No.
	TOU1

1. ACTIVITY SPECIFIC DEFINITIONS

Time of Use (ToU) pricing is a system of pricing where energy or demand charges are higher in periods of peak utilisation of the network and usually lower during times of low utilisation. This includes both Residential Time of Use and Residential Prosumer tariffs as defined by SA Power Networks.

Household electricity plan means the contract with a licensed electricity retailer servicing residential households.

2. ACTIVITY DESCRIPTION (SUMMARY)

This activity incentivises residential consumers to switch from a single rate electricity tariff plan to a Time of Use or Prosumer electricity tariff plan with their chosen retailer or supplier.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) Included in this program are South Australian residential households.

(2) Utility eligibility requirements also need to be fulfilled prior to commencement of the contract.

(3) At the commencement of the contract, the electricity for the household plan must be metered using a Type 4 electricity meter or an equivalent smart meter approved by the Minister.

(4) Activity WH3 has must not have previously been implemented for the electricity customer at the same premises.

4. ACTIVITY REQUIREMENTS

(1) The electricity tariff must be either the SAPN defined Residential Time of Use or Residential Prosumer tariff or an equivalent approved by the Minister.

(2) Contract requirements as specified by the chosen retailer or supplier.

5. ACTIVITY REPS CREDITS

The normalised REPS Credits from undertaking this activity is equal to:

Normalised REPS Credits (GJ) = Productivity factor, as per the table below:

Activity Description	Productivity Factor
Switch from single rate tariff to Time of Use (ToU) tariff.	**5.18**

6. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Tariffs are described in Table 17A-2 of the SAPN Tariff Structure Statement (Part A).SA Power Networks 2020-25 Tariff Structure Statement Part A can be found at the following link: https://www.sapowernetworks.com.au/public/download.jsp?id=9508

This activity is deemed for 10 years.

5.24 Connecting a New or Existing Battery to an Approved Virtual Power Plant VPP1 (Residential or Small Business Only)

Connecting a New or Existing Battery to an Approved Virtual Power Plant; Residential or Small Business Only	Activity No.
	VPP1

1. ACTIVITY SPECIFIC DEFINITIONS

Virtual power plant (VPP) means an aggregated set of multiple home solar photovoltaic (PV) systems and home battery systems that are operated together to generate, store energy, and supply electricity into the grid.

Approved Virtual Power Plant (VPP) is a VPP approved by the Minister

Battery means a battery storage systems (BESS) that is installed in accordance with and covered under the scope of AS/NZS 5139:2019 (Electrical installations - Safety of battery systems for use with power conversion equipment) as well as any additional product requirements of the Approved VPP

2. ACTIVITY DESCRIPTION (SUMMARY)

Connect an existing Battery or new Battery to an Approved Virtual Power Plant (VPP).

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential or small business premises in South Australia where the installed product requirements and minimum installation requirements can be met, and this activity has not already been implemented.

Any additional eligibility requirements of the chosen Approved VPP

The activity can be implemented at the same premises on the renewal of a contract with a VPP with the customer providing explicit consent, provided that previous contract period was no shorter than three years.

4. INSTALLED PRODUCT REQUIREMENTS

(1) Batteries shall comply with the Battery Safety Guide (*Best Practice Guide: Battery Storage Equipment –Electrical Safety Requirements, Version 1.0, Published 06 July 2018*) if installed after and during January 2019. Batteries installed prior to January 2019 must comply with the VPP requirements.

(2) Batteries must have a capacity greater than, or equal to, 2 kWh.

(3) The system must support remote monitoring and remote changes to firmware and operational settings by the VPP operator.

(4) The system shall respond to remotely provided commands from authorised parties to:

   a. Charge/discharge battery.

   b. Perform mandatory demand response modes required under AS/NZS 4755.3.5.

(5) The system shall be designed such that it is protected to a suitable standard against electronic intrusion and tampering by unauthorised parties.

(6) Systems shall be provided with the following minimum warranties at time of installation:

a. Battery Energy Storage Systems (BESS) or Battery System (BS): 7 years under daily cycling operation.

b. Any inverter: 5 years.

c. Balance of system (e.g. enclosures): 5 years.

d. Workmanship: 5 years.

e. Whole of system: 5 years.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) The activity connection must be installed and maintained in a manner consistent with the equipment, orchestration, and contractual requirements the Approved VPP

(2) System must be designed, or have been designed, and installed by CEC-accredited designed/installer.

(3) System shall be installed, or must have been installed, per CEC *Battery Install Guidelines for Accredited Installers*.

(4) System uses equipment supplied and installed in accordance with all relevant Australian and State Laws and regulations and all relevant Australian and International Standards, including, without limitation:

a. AS/NZS 4777 – Grid connection of energy systems via Inverters.

b. AS/NZS 3000 – Electrical installations for all the classes and types of construction in all buildings.

c. AS/NZS 4509 – Stand-alone power systems.

d. AS/NZS 3011 – Secondary batteries installed in buildings.

e. AS/NZS 5033 – Installation and safety requirements for photovoltaic (PV) arrays.

f. AS 2676 – Guide to the installation, maintenance, testing and replacement of secondary batteries in buildings.

g. AS 4086 – Secondary batteries for use with stand-alone power systems.

h. AS/NZS IEC 60947 – Low-voltage switchgear and control gear.

i. IEC 60947-3:2015 (ED. 3.2) – Low voltage switchgear and control gear –Switches, disconnectors, switch-disconnectors and fuse-combination units

j. AS/NZS 61439.2 – Low-Voltage switchgear and control gear assemblies –Power switchgear and control gear assemblies.

6. ACTIVITY REPS CREDITS

The normalised REPS Credits from undertaking this activity is equal to:

Normalised REPS Credits (GJ) = Productivity factor, as per the table below:

Battery Size (kWh)	Normalised REPS Credits (GJ)
2 ≤ Battery size < 4	17.2
4 ≤ Battery size < 6	34.5
6 ≤ Battery size < 8	51.7
8 ≤ Battery size < 10	68.9
10 ≤ Battery size < 12	86.2
12 ≤ Battery size < 14	103.4
14 ≤ Battery size < 16	120.6
16 ≤ Battery size < 18	137.8
18 ≤ Battery size < 20	155.1
20 ≤ Battery size < 22	172.3
22 ≤ Battery size < 24	189.5
24 ≤ Battery size < 26	206.8
26 ≤ Battery size < 28	224.0
28 ≤ Battery size	241.2

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Productivity factors assume a 10-year contract term with the VPP and that every day of the year the VPP will ensure the premises sources electricity from the full capacity of the battery, before relying on grid energy between 6 AM – 10 AM and 3 PM – 1 AM, and that the battery will be fully recharged from the grid or on site solar PV between 1 AM and 6AM and again between 10 AM and 3 PM.

In approving an Approved VPP, the Minister may consider requirements including but not limited to the VPP's:

- Customer contract length, terms and conditions;
- Demonstrated commercial capacity and capability, intent and practice to orchestrate battery operation for the duration and frequency required;
- Control hardware, software and communications connections and operational capacity and capability for VPP orchestration;
- Product and installation quality and safety provisions; and
- Consumer protection provisions.

The Minister may approve VPPs either directly or delegate Approval to an Approved VPP Panel or Program, that has the appropriate approval, monitoring, audit, and compliance enforcement processes and capabilities.

All demand response and VPP activities (APP4, EV1, VPP1, HC2C & WH4) are **not** mutually exclusive.

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5.25 Connecting a New or Existing Pool Pump to an Approved DR Aggregator APP4 (Residential Only)

Connecting a New or Existing Pool Pump to an Approved DR Aggregator; Residential Only	Activity No.
	APP4

1. ACTIVITY SPECIFIC DEFINITIONS

Pool pump means a circulating pump for use with a residential pool or spa.

Demand response enabling device (DRED) means an electrical product which meets the (a) Minimum physical requirements for a DRED and (b) Minimum levels of functionality for a DRED to comply with AS/NZS 4755.1:2017 (Demand response capabilities and supporting technologies for electrical products Demand response framework and requirements for demand response enabling devices (DREDs)).

Demand Response (DR) Aggregator means an entity that commercially orchestrates electricity demand response services by aggregating the electricity demand of multiple demand response enabling devices (DREDs) for which it has both AS/NZS 4755.1:2017 compliant communication connections, and the contractual rights with the owners of the DRED fitted equipment to operate in this way.

Approved DR Aggregator means a **DR Aggregator** approved by the Minister.

2. ACTIVITY DESCRIPTION (SUMMARY)

Connect a new or existing Pool Pump to an Approved DR Aggregator.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential or small business premises in South Australia where the installed product requirements and minimum installation requirements can be met.

Activity APP4 has must not have previously been implemented for the Pool Pump.

4. INSTALLED PRODUCT REQUIREMENTS

The pool pump shall operate on single or three phase mains power.

The pool pump shall have an input rating of not less than 100W and not more than 1500W.

As a proclaimed product in South Australia, any pool pump shall meet the safety requirements of AS/NZS 60335.2.41:2004

The pool pump shall be fitted with demand response controllers in accordance with AS/NZS 4755.3.2:2012 Demand response capabilities and supporting technologies for electrical products - Interaction of demand response enabling devices and electrical products - Operational instructions and connections for devices controlling swimming pool pump-units

The connected Pool Pump must comply with any additional installed product requirements placed, as a condition of approval, on the Approved DR Aggregator.

5. MINIMUM INSTALLATION REQUIREMENTS

The connection of the Pool Pump must comply with the Minimum requirements of:

- AS/NZS 4755.3.2:2012 Demand response capabilities and supporting technologies for electrical products - Interaction of demand response enabling devices and electrical

products - Operational instructions and connections for devices controlling swimming pool pump-units;

- Additional installation requirements placed, as a condition of approval, on the Approved DR Aggregator, including but not limited to requirements for installation, maintenance, DR orchestration, contractual conditions and consumer protection.; and

- AS/NZS 3000 (2018) wiring regulations, with a certificate of compliance by a licenced electrician.

6. ACTIVITY REPS CREDITS

The normalised REPS Credits saved per appliances connected is equal to:

[Normalised REPS Credits GJ = 1.94]

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Details of the Equipment Energy Efficiency Program's pool pump labelling scheme are available at: www.energyrating.gov.au/products-themes/other/swimming-pool-pumps/voluntary-labelling/

Productivity factors assume the pool pump remains connected to the aggregator for 8 years and that 100% of maximum DRED load will be shifted between 3pm – 1 AM on the 5 highest demand days of the year, utilising the DRM1 signal.

In approving an Approved Demand Response Aggregator, the Minister may consider requirements including but not limited to the DR Aggregator's:

- Customer contract length, terms and conditions;
- Demonstrated commercial capacity and capability, intent and practice to dispatch aggregated DR capacity for the duration and frequency required;
- DRED control hardware, software and communications connections and operational capacity and capability for DR orchestration;
- DRED product and installation quality and safety provisions; and
- Consumer protection provisions.

The Minister may approve Demand Response Aggregators either directly Or delegate Approval to an Approved DR Aggregator Panel or Program, that has the appropriate approval, monitoring, audit, and compliance enforcement processes and capabilities.

All demand response and VPP activities (APP4, EV1, VPP1, HC2C & WH4) are **not** mutually exclusive.

5.26 Connecting a New or Existing HVAC to an Approved DR Aggregator (Ducted and Non-Ducted) HC2C (Residential Only)

Connecting a New or Existing HVAC to an Approved DR Aggregator (Ducted and Non-Ducted); Residential Only	Activity No.
	HC2C

1. ACTIVITY SPECIFIC DEFINITIONS

Reverse cycle air conditioner (ducted or multi-split) means a ducted or multi-split air conditioner with both heating and cooling functions that is registered for energy labelling and MEPS under AS/NZS 3823.2 (2013) or GEMS Air Conditioners up to 65kW Determination 2019 as applicable.

Reverse cycle air conditioner (non-ducted) means a single phase non-ducted air conditioner with both heating and cooling functions that is registered for energy labelling and MEPS under AS/NZS 3823.2 (2013) or GEMS Air Conditioners up to 65kW Determination 2019 as applicable.

Note that there is currently a transition period between the older AS/NZS 3823.2 (2013) standard and the newer GEMS Air Conditioners up to 65kW Determination 2019. Available product may be registered to either standard until April 2025 after which only product registered to the GEMS determination will be legal to purchase.

Demand response enabling device (DRED) means an electrical product which meets the (a) Minimum physical requirements for a DRED and (b) Minimum levels of functionality for a DRED to comply with AS/NZS 4755.1:2017 (Demand response capabilities and supporting technologies for electrical products Demand response framework and requirements for demand response enabling devices (DREDs)).

Demand Response (DR) Aggregator means an entity that commercially orchestrates electricity demand response services by aggregating the electricity demand of multiple demand response enabling devices (DREDs) for which it has both AS/NZS 4755.1:2017 compliant communication connections, and the contractual rights with the owners of the DRED fitted equipment to operate in this way.

Approved DR Aggregator means a **DR Aggregator** approved by the Minister.

Class 1 and class 2 dwellings are as defined by the National Construction Code.

2. ACTIVITY DESCRIPTION (SUMMARY)

Connect a new or existing air conditioning (ducted and non-ducted) unit to an Approved DR Aggregator.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential class 1 and class 2 dwellings in South Australia where the installed product requirements and minimum installation requirements can be met.

Activity HC2C has must not have previously been implemented for the specific new or existing air conditioning (ducted and non-ducted).

4. INSTALLED PRODUCT REQUIREMENTS

Any reverse cycle air conditioner (ducted, multi-split or non-ducted) installed shall be fitted with demand response controllers in accordance with AS/NZS 4755.3.1:2014 (Demand response capabilities and supporting technologies for electrical products Interaction of demand response enabling devices and electrical products - Operational instructions and connections for air conditioners)

The reverse cycle air conditioner must comply with any additional installed product requirements placed, as a condition of approval, on the Approved DR Aggregator

5. MINIMUM INSTALLATION REQUIREMENTS

Any reverse cycle air conditioner (ducted, multi-split or non-ducted) installed must comply with the Minimum requirements of:

- AS/NZS 4755.3.1:2014 (Demand response capabilities and supporting technologies for electrical products Interaction of demand response enabling devices and electrical products - Operational instructions and connections for air conditioners);
- AS/NZS 60335.2.40: 2019 (Household and similar electrical appliances - Safety Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers);
- Additional installation requirements placed, as a condition of approval, on the Approved DR Aggregator, including but not limited to requirements for installation, maintenance, DR orchestration, contractual conditions and consumer protection; and
- AS/NZS 3000 (2018) wiring regulations, with a certificate of compliance by a licenced electrician

6. ACTIVITY REPS CREDITS

Separate values are provided for “NCC climate zone 6” and “other places in SA”.

The normalised REPS credit from undertaking this activity is equal to:

Normalised REPS Credit (GJ) = Productivity factor, as per the table below:

Activity Description	Productivity Factor
Connect existing HVAC (non-ducted) to demand response aggregator – NCC climate zone 6	**2.58**
Connect existing HVAC (ducted) to demand response aggregator – NCC climate zone 6	**7.09**
Connect existing HVAC (non-ducted) to demand response aggregator – other places in SA	**8.17**
Connect existing HVAC (ducted) to demand response aggregator – other places in SA	**22.43**

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Productivity factors assume HVAC unit will remain connected to an Approved DR Aggregator for 8 years and 50% of maximum DRED load (DRM2) will be shifted between 3pm – 1 AM on at least 15 days per year, including the 5 highest demand days of the year.

In approving an Approved Demand Response Aggregator, the Minister may consider requirements including but not limited to the DR Aggregator’s:

- Customer contract length, terms and conditions;
- Demonstrated commercial capacity and capability, intent and practice to dispatch aggregated DR capacity for the duration and frequency required;
- DRED control hardware, software and communications connections and operational capacity and capability for DR orchestration;
- DRED product and installation quality and safety provisions; and
- Consumer protection provisions.

The Minister may approve Demand Response Aggregators either directly Or delegate Approval to an Approved DR Aggregator Panel or Program, that has the appropriate approval, monitoring, audit, and compliance enforcement processes and capabilities.

All demand response and VPP activities (APP4, EV1, VPP1, HC2C & WH4) are **not** mutually exclusive.

5.27 Connecting a New or Existing EV Charger to an Approved DR Aggregator EV1 (Residential or Small Business Only)

Connecting a New or Existing EV Charger to an Approved DR Aggregator; Residential or Small Business Only	Activity No.
	EV1

1. ACTIVITY SPECIFIC DEFINITIONS

EV Charger means a device designed to charge an Electric Vehicles (EV's) battery. The charger must comply with AS/NZS 62196.2 (2014).

Demand response enabling device (DRED) means an electrical product which meets the (a) Minimum physical requirements for a DRED and (b) Minimum levels of functionality for a DRED to comply with AS/NZS 4755.1:2017 (Demand response capabilities and supporting technologies for electrical products Demand response framework and requirements for demand response enabling devices (DREDs)).

Demand Response (DR) Aggregator means an entity that commercially orchestrates electricity demand response services by aggregating the electricity demand of multiple demand response enabling devices (DREDs) for which it has both AS/NZS 4755.1:2017 compliant communication connections, and the contractual rights with the owners of the DRED fitted equipment to operate in this way.

Approved DR Aggregator means a **DR Aggregator** approved by the Minister.

2. ACTIVITY DESCRIPTION (SUMMARY)

Connect a new or existing EV Charger to an Approved DR Aggregator.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential or small business premises in South Australia where the installed product requirements and minimum installation requirements can be met.

Activity EV1 has must not have previously been implemented for the EV Charger.

4. INSTALLED PRODUCT REQUIREMENTS

The connected EV Charger must comply with the Minimum requirements of:

- AS/NZS 4755.1:2017 (Demand response capabilities and supporting technologies for electrical products Demand response framework and requirements for demand response enabling devices (DREDs);
- Any additional installed product requirements placed, as a condition of approval, on the Approved DR Aggregator.

5. MINIMUM INSTALLATION REQUIREMENTS

The connection of the EV Charger must comply with the Minimum requirements of:

- AS/NZS 4755.1:2017 (Demand response capabilities and supporting technologies for electrical products Demand response framework and requirements for demand response enabling devices (DREDs);
- Additional installation requirements placed, as a condition of approval, on the Approved DR Aggregator, including but not limited to requirements for installation, maintenance, DR orchestration, contractual conditions and consumer protection.; and

- with AS/NZS 3000 (2018) wiring regulations, with a certificate of compliance by a licenced electrician.

6. ACTIVITY REPS CREDITS

The normalised REPS Credits from undertaking this activity is equal to:

Normalised REPS Credits (GJ) = Productivity factor, as per the table below:

Activity Description	Productivity Factor
Connecting EV charger to DR aggregator	**5.27**

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Productivity factors assume the EV charger will remain connected to an Approved DR aggregator for on average at least 8 years and that 100% of maximum DRED load will be shifted between 3pm – 1 AM on the 5 highest demand days of the year. The DRM1 signal is utilised.

In approving an Approved Demand Response Aggregator, the Minister may consider requirements including but not limited to the DR Aggregator's:

- Customer contract length, terms and conditions;
- Demonstrated commercial capacity and capability, intent and practice to dispatch aggregated DR capacity for the duration and frequency required;
- DRED control hardware, software and communications connections and operational capacity and capability for DR orchestration;
- DRED product and installation quality and safety provisions; and
- Consumer protection provisions.

The Minister may approve Demand Response Aggregators either directly Or delegate Approval to an Approved DR Aggregator Panel or Program, that has the appropriate approval, monitoring, audit, and compliance enforcement processes and capabilities.

All demand response and VPP activities (APP4, EV1, VPP1, HC2C & WH4) are **not** mutually exclusive.

5.28 Connecting a New or Existing Electric Heat Pump Water Heater to an Approved DR Aggregator WH4 (Residential Only)

Connecting a New or Existing Electric Heat Pump Water Heater to an Approved DR Aggregator; Residential Only	Activity No.
	WH4

1. ACTIVITY SPECIFIC DEFINITIONS

Demand response enabling device (DRED) means an electrical product which meets the (a) Minimum physical requirements for a DRED and (b) Minimum levels of functionality for a DRED to comply with AS/NZS 4755.1:2017 (Demand response capabilities and supporting technologies for electrical products Demand response framework and requirements for demand response enabling devices (DREDs)).

Demand Response (DR) Aggregator means an entity that commercially orchestrates electricity demand response services by aggregating the electricity demand of multiple which it has both AS/NZS 4755.1:2017 compliant communication connections, and the contractual rights with equipment owners to operate in this way.

Approved DR Aggregator means a **DR Aggregator** approved by the Minister.

Water heater means an Electric Heat Pump Water Heater as defined under AS/NZS 4234:2008 (Heated water systems - Calculation of energy consumption).

2. ACTIVITY DESCRIPTION (SUMMARY)

Connect a new or existing Electric Heat Pump Water Heater to an Approved DR Aggregator.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

Any residential class 1 and class 2 dwellings in South Australia where the installed product requirements and minimum installation requirements can be met.

Activity HW4 has must not have previously been implemented for the specific new or existing water heater.

4. INSTALLED PRODUCT REQUIREMENTS

The Water Heater shall be fitted with demand response controllers in accordance with AS/NZS 4755.3.3:2014 (Demand response capabilities and supporting technologies for electrical products Interaction of demand response enabling devices and electrical products - Operational instructions and connections for electric storage and electric-boosted storage water heaters)

The connected Water Heater must comply with any additional installed product requirements placed, as a condition of approval, on the Approved DR Aggregator.

5. MINIMUM INSTALLATION REQUIREMENTS

Any electric water heater connected to an Approved DR Aggregator must comply with the Minimum requirements of:

- 4755.3.3:2014 (Demand response capabilities and supporting technologies for electrical products Interaction of demand response enabling devices and electrical products - Operational instructions and connections for electric storage and electric-boosted storage water heaters);

- Additional installation requirements placed, as a condition of approval, on the Approved DR Aggregator, including but not limited to requirements for installation, maintenance, DR orchestration, contractual conditions and consumer protection.; and

- AS/NZS 3000 (2018) wiring regulations, with a certificate of compliance by a licenced electrician.

6. ACTIVITY REPS CREDITS

The normalised REPS Credit from undertaking this activity is equal to:

Normalised REPS Credit (GJ) = Productivity factor, as per the table below:

Activity Description	**Productivity Factor**
Connect Electric Heat Pump Water Heater to DR Aggregator	**2.73**

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Productivity factors assume a 8-year contract term and that 100% of maximum DRED load will be shifted between 3 PM – 1 AM on at least the 5 highest demand days of the year. This system would utilise the DRM1 signal.

In approving an Approved Demand Response Aggregator, the Minister may consider requirements including but not limited to the DR Aggregator's:

- Customer contract length, terms and conditions;
- Demonstrated commercial capacity and capability, intent and practice to dispatch aggregated DR capacity for the duration and frequency required;
- DRED control hardware, software and communications connections and operational capacity and capability for DR orchestration;
- DRED product and installation quality and safety provisions; and
- Consumer protection provisions.

The Minister may approve Demand Response Aggregators either directly Or delegate Approval to an Approved DR Aggregator Panel or Program, that has the appropriate approval, monitoring, audit, and compliance enforcement processes and capabilities.

All demand response and VPP activities (APP4, EV1, VPP1, HC2C & WH4) are **not** mutually exclusive.

5.29 NABERS Building Demand Savings NB1 (Commercial and NABERS Rated Residential Buildings Only)

NABERS Building Demand Savings; Commercial and NABERS Rated Residential Buildings Only	Activity No.
	NB1

1. ACTIVITY SPECIFIC DEFINITIONS

NABERS Building means a building that has obtained a NABERS Rating.

NABERS Rating means a rating issued by the NABERS National Administrator excluding any GreenPower

Historical Baseline NABERS Rating means a previous NABERS Rating for the same NABERS building

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

Current Rating Year is the year for which normalised energy savings will be calculated, and is the year that the Rating Period ended for the NABERS Rating

Baseline Rating Year is the year that the Rating Period ended for the Historical Baseline NABERS Rating

NABERS Electricity means the electricity purchased or imported from the electricity network and accounted for in the NABERS Rating, including electricity purchased as GreenPower

NABERS Gas is the total of the gas accounted for in the NABERS Rating.

On-site Unaccounted Electricity is electricity generated on-site from energy sources which have not been accounted for in the NABERS Rating, including electricity generated from photovoltaic cells or gas generators fed from on-site biogas sources, but excluding gas generators where the imported gas has been accounted for in the NABERS Rating

Benchmark Electricity Consumption is the electricity consumption that would be required for the NABERS Building to achieve the Benchmark NABERS Rating over the Rating Period, assuming the same breakdown of energy consumption.

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

NABERS Reverse Calculator means the tool provided by the NABERS National Administrator

Counted Energy Savings means the total electricity and/or gas savings that have previously been calculated using this method , and the total annualised electricity and/or gas savings that have previously been calculated using any other REPS method for the NABERS building

Upgrade means the replacement and/or modification of Existing Energy using Equipment with New equivalent Equipment resulting in a reduction in the consumption of electricity compared to what would have otherwise been consumed.

2. ACTIVITY DESCRIPTION (SUMMARY)

The Activity involves an upgrade to the energy efficiency of a NABERS building that results in energy savings as calculated in accordance with this specification.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) The existing energy using equipment must be in working order at time of the upgrade.

(2) The NABERS building must have a NABERS rating issued by the NABERS National Administrator.

(3) The "Benchmark NABERS Rating Index" calculation method:

- the NABERS Rating must be the first rating for the building
- the NABERS Rating must exceed by at least 0.5 stars the Benchmark NABERS Rating listed in the version of NSW Energy Savings Scheme Rule that is in force on the date of the Current year rating.

(4) For Activities using the "Historical Baseline NABERS Rating" calculation method:

- the Historical Baseline NABERS Rating must meet the "similar configuration" criteria listed in the Energy Savings Scheme NABERS Method Guide, and
- the Historical Baseline NABERS Rating must have been calculated within the timeframes set in the Energy Savings Scheme, and
- the NABERS Rating must exceed the Historical Baseline NABERS Rating by at least 0.5 stars.

(5) For forward creation:

- The Maximum Time Period for Forward Creation is 3 years
- The Rating Period for the Historical Baseline NABERS Rating must end no more than 15 months before the end of the Rating Period for the NABERS Rating

4. INSTALLED PRODUCT REQUIREMENTS

(1) At the time of installation, any new equipment installed as part of the Activity must comply with relevant Australian standards and the National Construction Code as applicable.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) Any electrical upgrades conducted as part of the Activity must be performed by a licensed electrical worker under the supervision of a licensed electrical contractor. Any electric wiring must comply with the latest AS/NZS 3000 wiring rules.

(2) The Activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the Activity, including any licensing, registration, statutory approval, Activity certification, health, safety, environmental or waste disposal requirements

(3) All removed equipment must be removed in accordance with the Environment Protection (Waste to Resources) Policy 2010 under the *Environment Protection Act 1993*. No dangerous materials can be disposed of in a landfill, instead it must be disposed of responsively.

6. REPORTING REQUIREMENTS

For verification purposes, the following records will be retained in relation to the Activity:

(1) Site Name

(2) Site Address

(3) The classification of the commercial premises in accordance with Australian and New Zealand Standard Industrial Classification (ANZSIC) codes at the divisional level

(4) Description and Date(s) of the demand saving activity/activities were implemented, and supporting engineering project documentation on detailing activity/activities

(5) NABERS Rating issued by the NABERS National Administrator

(6) Where relevant, proof that all removed equipment has been properly decommissioned including proof of correct recycling or disposal

7. ACTIVITY REPS CREDITS

The normalised REPS Credits from undertaking this Activity is equal to:
Step 1: Calculate measured energy consumption:

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

Measured Gas Consumption (MWh) = NABERS Gas

Step 2: Calculate Benchmark NABERS Rating using either:

a) the Benchmark NABERS Rating Index method:

Look up the Benchmark NABERS Rating in Table A20 of Schedule A of the Energy Savings Scheme Rule which corresponds to the relevant Current Rating Year and NABERS Rating;

b) the Historical Baseline NABERS Rating method

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

Where Annual Rating Adjustment is the amount by which average NABERS Ratings increase each year and is the value in Table A21 of Schedule A of the Energy Savings Scheme Rule which corresponds to the relevant Current Rating Year and NABERS Rating

Step 3 – Calculate Benchmark Electricity Consumption and Benchmark Gas Consumption

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

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

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

Step 4 – Calculate Energy Savings using either:

a) Calculate Energy Savings with forward creation:

Electricity Saving (MWh) = (Benchmark Electricity Consumption – Measured Electricity Consumption) x Maximum Time Period for Forward Creation

Gas Saving (MWh) = (Benchmark Gas Consumption – Measured Gas Consumption) x Maximum Time Period for Forward Creation

b) calculate Energy Savings top up or annual creation:

Electricity Savings (MWh) = (Benchmark Electricity Consumption – Measured Electricity Consumption) – Counted Energy Savings

Gas Saving (MWh) = (Benchmark Electricity Consumption – Measured Electricity Consumption) – Counted Energy Savings

Step 5 – Calculate Normalised REPS Credits (GJ)

Normalised REPS Credits (GJ) = Electricity Saving (MWh) x 3.6 x Productivity Factor + Gas Saving (MWh) x 3.6 x Gas Normalisation Factor

Where,:

- the productivity Factor = **1.207; and**
- the *Gas Normalisation Factor* = 0.4

5.30 Commercial and Industrial Demand Savings (PIAM&V DM) CD1 (Commercial or Industrial Only)

Commercial and Industrial Demand Savings (PIAM&V DM); Commercial or Industrial Only	Activity No.
	CD1

1. ACTIVITY SPECIFIC DEFINITIONS

Commercial energy demand is defined as energy which is consumed in South Australia in commercial or industrial premises classified under the Building Code of Australia as either Class 3, 5, 6, 7, 8, 9, 10 or Common Areas of Class 2.

PIAM&V stands for Project Impact Assessment with Measurement & Verification, it is a method for calculating and verifying energy efficiency savings resulting from upgrades and improvements.

Baseline Energy Model is either an Estimate of the Mean or a Regression Analysis that estimates the electricity or gas consumption that would occur if the Activity was not conducted

Operating Energy Model is either an Estimate of the Mean or a Regression Analysis that estimates the electricity or gas consumption that occurs after the Activity is conducted

Estimate of the Mean is based on energy consumption measurements, Independent Variables and Site Constants where the Coefficient of Variation of the energy consumption over the Measurement Period is less than 15%

Regression Analysis is a mathematical function for approximating the relationship between energy consumption, Independent Variables and Site Constants, and where the number of independent observations is at least six times the number of Independent Variables in the energy model, and includes, but is not limited to, linear regression and mixed models.

Independent Variable means a parameter that varies over time, can be measured, and affects the energy consumption of the Equipment

Site Constant means a parameter that does not vary over time under normal operating conditions and affects the energy consumption of the Equipment

Effective Range means the range over which values of Independent Variables for which the Baseline Energy Model or Operating Energy model is valid

Coefficient of Variation is the sample standard deviation expressed as a percentage of the sample mean

Measurement and Verification Professional is a person accredited under a framework approved by the Minister

Normal Year is the values for all Independent Variables and Site Constants over a typical year for operation of the equipment

Measurement Procedures are the procedures for measurements that are deemed suitable for the Activity by a Measurement and Verification Professional, including, but not limited to, start and end dates, frequency, the equipment and energy uses included (measurement boundary), equipment used, accuracy and calibration of that equipment, applicability of the period of measurement to the Activity

Measurement Period means the duration of time over which measurement of energy consumption will be taken for the purposes of calculating Energy Savings

Persistence Model means a model that estimates the expected lifetime of Activity equipment in years, and the Decay Factor for each year.

Decay Factor means a number between 0 and 1 which quantifies the decay of energy savings due to equipment degradation over time

Upgrade means the replacement and/or modification of Existing Energy using Equipment with New equivalent Equipment resulting in a reduction in the consumption of energy compared to what would have otherwise been consumed.

2. ACTIVITY DESCRIPTION (SUMMARY)

The Activity involves an upgrade to the energy efficiency of Commercial or Industrial equipment that results in energy savings as calculated in accordance with this specification.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

(1) The existing equipment must be in working order at time of the upgrade.

(2) All calculations, including the procedures used, be deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided, including, but not limited to, the Baseline Energy Model, Operating Energy Model, Independent Variables, Site Constants, Measurement Procedures, Effective Range, Accuracy Factor, Normal Year, Decay Factors, and (if used) Persistence Model.

(3) The Baseline Energy Model must:

- Be dependent on Independent Variables and Site Constants (where relevant) that are established by measurements taken under normal operating conditions
- Be no more than 3 years earlier than the end date of the Measurement Period.
- Have an end date that occurs before the Activity is implemented
- Be deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.

(4) The Operating Energy Model must:

- Be dependent on Independent Variables and Site Constants (where relevant) that are established by measurements taken under normal operating conditions
- Estimate annual energy consumption based on a Normal Year
- Have a start date that occurs after the Activity is implemented

(5) For savings calculated using the Measured Energy Savings method, the measured annual energy consumption must have a start date that occurs on or after the date that the Activity is implemented, and an end date that is the day before the anniversary of the start date (such that the Measurement Period is for a full year).

(6) The maximum time period for forward creation is either:

- if a Persistence Model is used, a period not exceeding the expected lifetime of the Equipment in whole years, as determined by that Persistence Model; and
- not more than 10 years after the Implementation Date.

(7) The calculations used to determine Normalised Energy Savings must be recorded using a calculator approved by ESCOSA that allows for data retention and calculation validation

4. INSTALLED PRODUCT REQUIREMENTS

(1) The new equipment must come with a minimum 2 years replacement warranty.

(2) At the time of installation, the new equipment must:

- be on the list of products accepted for installation under the NSW 'Energy Savings Scheme' (ESS), as published by the ESS Administrator, or
- comply with the applicable Australian standards.

5. MINIMUM INSTALLATION REQUIREMENTS

(1) Any electrical installations related to the Activity must be performed by a licensed electrical worker under the supervision of a licensed electrical contractor. Any electric wiring must comply with the latest AS/NZS 3000 wiring rules.

(2) The Activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the Activity, including any licensing, registration, statutory approval, Activity certification, health, safety, environmental or waste disposal requirements

(3) All removed equipment must be removed in accordance with the Environment Protection (Waste to Resources) Policy 2010 under the *Environment Protection Act 1993*. No dangerous materials can be disposed of in a landfill, instead it must be disposed of responsively.

6. REPORTING REQUIREMENTS

For verification purposes, the following records will be retained in relation to the Activity:

(1) Site Name

(2) Site Address

(3) The classification of the premises in accordance with Australian and New Zealand Standard Industrial Classification (ANZSIC) codes at the divisional level

(4) Date of Activity

(5) Explanatory reasoning by a Measurement and Verification Professional that confirms that the measurement and verification approach taken to calculate Normalised Energy Savings for the Activity is appropriate, in accordance with the requirements of the Activity Eligibility Requirements in this specification

(6) A measurement and verification plan for the Activity developed prior to the Date of Activity.

(7) Energy saved calculated in accordance with the activity energy saving requirements in this specification, including a copy of data and assumptions used, and where relevant, a completed version of the ESCOSA approved calculator used.

7. ACTIVITY REPS CREDITS

The Normalised REPS Credits (GJ) from undertaking this Activity is equal to either:

a) Normal Year Energy Savings:

Normalised Energy Saving (GJ) = $\sum_i$ (Normal Year Electricity Savings × Accuracy Factor × Decay Factor$_i$) × 3.6 × Productivity Factor + $\sum_i$ (Normal Year Gas Savings × Accuracy Factor × Decay Factor$_i$ × Gas Normalisation Factor)× 3.6 – Counted Energy Savings

For all years *i* over the Maximum Time Period for Forward Creation.

Or

b) Measured Energy Savings:

Normalised Energy Saving (GJ) = (Measured Electricity Savings × Accuracy Factor) × 3.6 × Productivity Factor + (Measured Gas Savings × Accuracy Factor × Gas Normalisation Factor) × 3.6 – Counted Energy Savings

Where:

- the Productivity Factor = **1.207**
- Normal Year Electricity or Gas Savings is the electricity (or gas) consumption in MWh estimated using the Baseline Energy Model minus the electricity (or gas) consumption in MWh estimated using the Operating Energy Model for the Normal Year
- Measured Electricity or Gas Savings is the electricity (or gas) consumption in MWh estimated using the Baseline Energy Model minus the measured annual electricity (or gas) consumption in MWh
- Accuracy Factor is the value corresponding to the energy model type and relative precision of the energy savings estimate at a 90% confidence level, listed in Table A23 of the Version of the Energy Savings Scheme Rule which is in force on the date the project is implemented.
- Decay Factor is equal to 1 if the Normal Year Electricity (and/or Gas) Savings are negative, and either the value set by a Persistence Model for each year or the value corresponding to the relevant year since the Date of the Activity specified in Table A16 of Schedule A of the Energy Savings Scheme Rule
- Counted Energy Savings is the total Normalised Energy Savings that have been credited in previous years for any equipment within the measurement boundary of the Activity.
- the *Gas Normalisation Factor* = 0.4

8. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

An example of the type of tool for calculating Normalised Energy is the Project Impact Assessment with Measurement and Verification tool maintained by the NSW Government for the Energy Savings Scheme.

Examples of the Measurement and Verification Professional accreditation frameworks which could be considered by the Minister include those by the NSW Energy Savings Scheme Administrator or the Victorian Energy Upgrades Regulator as a Measurement and Verification Professional.