

SUPPLEMENTARY GAZETTE



**THE SOUTH AUSTRALIAN
GOVERNMENT GAZETTE**

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All instruments appearing in this gazette are to be considered official, and obeyed as such

STATE GOVERNMENT INSTRUMENTS

ELECTRICITY ACT 1996
GAS ACT 1997

RETAILER ENERGY PRODUCTIVITY SCHEME

*Ministerial Notice—
Threshold of Obligation for 2021, 2022, 2023, 2024 and 2025*

Pursuant to Regulation 22(2) of the *Electricity (General) Regulations 2012* under the *Electricity Act 1996*, I set the following thresholds:

- 5000 residential customers for the purposes of paragraph (a) of Regulation 22(1)
- 20,000 MWh of electricity for the purposes of paragraph (b) of Regulation 22(1)

Pursuant to Regulation 16(2) of the *Gas Regulations 2012* under the *Gas Act 1997*, I set the following thresholds:

- 5000 residential customers for the purposes of paragraph (a) of Regulation 16(1)
- 133,000 GJ of gas for the purposes of paragraph (b) of Regulation 16(1)

These thresholds will apply for 2021, 2022, 2023, 2024 and 2025.

Dated: 21 December 2020

DAN VAN HOLST PELLEKAAN
Minister for Energy and Mining

ELECTRICITY ACT 1996
GAS ACT 1997

RETAILER ENERGY PRODUCTIVITY SCHEME

*Ministerial Notice—
Annual Targets for 2021, 2022, 2023, 2024 and 2025*

Pursuant to Regulations 24 and 25(2) of the *Electricity (General) Regulations 2012* under the *Electricity Act 1996*, and Regulations 18 and 19(2) of the *Gas Regulations 2012* under the *Gas Act 1997*, I set the following for the purposes of Part 4 of the *Electricity (General) Regulations 2012* and Part 4 of the *Gas Regulations 2012*:

- annual energy productivity targets
- the amount of each annual productivity target that is to be achieved by the provision of energy productivity activities to priority group households
- the amount of each annual productivity target that is to be achieved by the provision of energy productivity activities to residential households

The targets (normalised gigajoules) are set for 2021, 2022, 2023, 2024 and 2025 as follows:

Year	Annual energy productivity targets	The amount of each annual productivity target that is to be achieved by the provision of energy productivity activities to priority group households	The amount of each annual productivity target that is to be achieved by the provision of energy productivity activities to residential customers
2021	2,500,000	500,000	500,000
2022	2,812,500	500,000	500,000
2023	3,125,000	500,000	500,000
2024	3,437,500	500,000	500,000
2025	3,750,000	500,000	500,000

Dated: 21 December 2020

DAN VAN HOLST PELLEKAAN
Minister for Energy and Mining

ELECTRICITY ACT 1996
GAS ACT 1997

RETAILER ENERGY PRODUCTIVITY SCHEME

Ministerial Notice—Apportioning of Targets

Pursuant to Regulation 24(3) of the *Electricity (General) Regulations 2012* under the *Electricity Act 1996*, I require that the annual energy productivity target (EPT) for a calendar year for a relevant electricity retailer is to be calculated using the following formula:

$$A \times (B \times N_e) \div ((C \times N_e) + (D \times N_g))$$

Where:

A is the annual energy productivity target for the calendar year set under Regulation 24(1) of the *Electricity (General) Regulations 2012*. This value is expressed in gigajoules of energy.

B is the relevant electricity retailer's electricity purchases for retailing to customers within South Australia, for the preceding financial year, excluding designated electricity purchases. This value is expressed in gigajoules of energy purchased.

C is the sum of the electricity purchases made by each relevant electricity retailer for retailing to customers within South Australia, for the preceding financial year, excluding designated electricity purchases. This value is expressed in gigajoules of energy purchased.

D is the sum of the gas purchases made by each relevant gas retailer for retailing to customers within South Australia, for the preceding financial year, excluding designated gas purchases. This value is expressed in gigajoules of energy purchased.

N_e is the REPS electricity normalisation factor and has a value of 1.00.

N_g is the REPS gas normalisation factor and has a value of 0.4.

Relevant electricity retailer has the same meaning as in Regulation 23 of the *Electricity (General) Regulations 2012*.

Designated electricity purchases has the same meaning as in Regulation 22(4) of the *Electricity (General) Regulations 2012*.

Relevant gas retailer has the same meaning as in Regulation 17 of the *Gas Regulations 2012*.

Designated gas purchase has the same meaning as in Regulation 16(4) of the *Gas Regulations 2012*.

Pursuant to Regulation 18(3) of the *Gas Regulations 2012* under the *Gas Act 1997*, I require that the annual energy productivity target (EPT) for a calendar year for a relevant gas retailer is to be calculated using the following formula:

$$A \times (B \times N_g) \div ((C \times N_e) + (D \times N_g))$$

Where:

A is the annual energy productivity target for the calendar year set under Regulation 18(1) of the *Gas Regulations 2012*. This value is expressed in gigajoules of energy.

B is the relevant gas retailer's gas purchases for retailing to customers within South Australia, for the preceding financial year, excluding designated gas purchases. This value is expressed in gigajoules of energy purchased.

C is the sum of the electricity purchases made by each relevant electricity retailer for retailing to customers within South Australia, for the preceding financial year, excluding designated electricity purchases. This value is expressed in gigajoules of energy purchased.

D is the sum of the gas purchases made by each relevant gas retailer for retailing to customers within South Australia, for the preceding financial year, excluding designated gas purchases. This value is expressed in gigajoules of energy purchased.

N_e is the REPS electricity normalisation factor and has a value of 1.00.

N_g is the REPS gas normalisation factor and has a value of 0.4.

Relevant gas retailer has the same meaning as in Regulation 17 of the *Gas Regulations 2012*.

Designated gas purchase has the same meaning as in Regulation 16(4) of the *Gas Regulations 2012*.

Relevant electricity retailer has the same meaning as in Regulation 23 of the *Electricity (General) Regulations 2012*.

Designated electricity purchases has the same meaning as in Regulation 22 (4) of the *Electricity (General) Regulations 2012*.

Pursuant to Regulation 25(4)(a) of the *Electricity (General) Regulations 2012* under the *Electricity Act 1996*, I require that the priority group energy productivity target (PGEPT) for a calendar year for a relevant electricity retailer is to be calculated using the following formula:

$$(A \times B) \div (C + D)$$

Where:

A is the specified amount of the annual energy productivity target for the calendar year to be achieved by the provision of energy productivity activities to priority group households, as set under Regulation 25(1) of the *Electricity (General) Regulations 2012*. This value is expressed in gigajoules of energy.

B is the number of residential customers within South Australia, as at 30 June in the preceding year, to whom the relevant electricity retailer sold electricity as a retailer to. This value is expressed in number of customers.

C is the sum of the number of residential customers within South Australia, as at 30 June in the preceding year, to whom each relevant electricity retailer sold electricity as a retailer to. This value is expressed in number of customers.

D is the sum of the number of residential customers within South Australia, as at 30 June in the preceding year, to whom each relevant gas retailer sold gas as a retailer to. This value is expressed in number of customers.

Relevant gas retailer has the same meaning as in Regulation 17 of the *Gas Regulations 2012*.

Relevant electricity retailer has the same meaning as in Regulation 23 of the *Electricity (General) Regulations 2012*.

Pursuant to Regulation 19(4)(a) of the *Gas Regulations 2012* under the *Gas Act 1997*, I require that the priority group energy productivity target (PGEPT) for a calendar year for a relevant gas retailer is to be calculated using the following formula:

$$(A \times B) \div (C + D)$$

Where:

A is the specified amount of the annual energy productivity target for the calendar year to be achieved by the provision of energy productivity activities to priority group households, as set under Regulation 19(1) of the *Gas Regulations 2012*. This value is expressed in gigajoules of energy.

B is the number of residential customers within South Australia, as at 30 June in the preceding year, to whom the relevant gas retailer sold gas as a retailer to. This value is expressed in number of customers.

C is the sum of the number of residential customers within South Australia, as at 30 June in the preceding year, to whom each relevant electricity retailer sold electricity as a retailer to. This value is expressed in number of customers.

D is the sum of the number of residential customers within South Australia, as at 30 June in the preceding year, to whom each relevant gas retailer sold gas as a retailer to. This value is expressed in number of customers.

Relevant gas retailer has the same meaning as in Regulation 17 of the *Gas Regulations 2012*.

Relevant electricity retailer has the same meaning as in Regulation 23 of the *Electricity (General) Regulations 2012*.

Pursuant to Regulation 25(4)(a) of the *Electricity (General) Regulations 2012* under the *Electricity Act 1996*, I require that the household energy productivity target (HEPT) for a calendar year for a relevant electricity retailer is to be calculated using the following formula:

$$(A \times B) \div (C + D)$$

Where:

A is the specified amount of the annual energy productivity target for the calendar year to be achieved by the provision of energy productivity activities to residential customers, as set under Regulation 25(1) of the *Electricity (General) Regulations 2012*. This value is expressed in gigajoules of energy.

B is the number of residential customers within South Australia, as at 30 June in the preceding year, to whom the relevant electricity retailer sold electricity as a retailer to. This value is expressed in number of customers.

C is the sum of the number of residential customers within South Australia, as at 30 June in the preceding year, to whom each relevant electricity retailer sold electricity as a retailer to. This value is expressed in number of customers.

D is the sum of the number of residential customers within South Australia, as at 30 June in the preceding year, to whom each relevant gas retailer sold gas as a retailer to. This value is expressed in number of customers.

Relevant gas retailer has the same meaning as in Regulation 17 of the *Gas Regulations 2012*.

Relevant electricity retailer has the same meaning as in Regulation 23 of the *Electricity (General) Regulations 2012*.

Pursuant to Regulation 19(4)(a) of the *Gas Regulations 2012* under the *Gas Act 1997*, I require that the household energy productivity target (HEPT) for a calendar year for a relevant gas retailer is to be calculated using the following formula:

$$(A \times B) \div (C + D)$$

Where:

A is the specified amount of the annual energy productivity target for the calendar year to be achieved by the provision of energy productivity activities to residential customers, as set under Regulation 19(1) of the *Gas Regulations 2012*. This value is expressed in gigajoules of energy.

B is the number of residential customers within South Australia, as at 30 June in the preceding year, to whom the relevant gas retailer sold gas as a retailer to. This value is expressed in number of customers.

C is the sum of the number of residential customers within South Australia, as at 30 June in the preceding year, to whom each relevant electricity retailer sold electricity as a retailer to. This value is expressed in number of customers.

D is the sum of the number of residential customers within South Australia, as at 30 June in the preceding year, to whom each relevant gas retailer sold gas as a retailer to. This value is expressed in number of customers.

Relevant gas retailer has the same meaning as in Regulation 17 of the *Gas Regulations 2012*.

Relevant electricity retailer has the same meaning as in Regulation 23 of the *Electricity (General) Regulations 2012*.

Dated: 21 December 2020

DAN VAN HOLST PELLEKAAN
Minister for Energy and Mining

ELECTRICITY ACT 1996
GAS ACT 1997

RETAILER ENERGY PRODUCTIVITY SCHEME

Ministerial Notice—Maximum Credit Accruals

Pursuant to Regulations 30(7) and 30(8) of the *Electricity (General) Regulations 2012* under the *Electricity Act 1996*, and Regulations 24(7) and 24(8) of the *Gas Regulations 2012* under the *Gas Act 1997*, I set the following maximum energy credit that a retailer may apply to have taken into account in determining whether the retailer has met a target that applies to the retailer in the subsequent year.

2022—20 per cent of the retailer's 2021 Energy Productivity Target

2023—20 per cent of the retailer's 2022 Energy Productivity Target

2024—10 per cent of the retailer's 2023 Energy Productivity Target

2025—Zero (0) per cent of the retailer's 2024 Energy Productivity Target

Dated: 21 December 2020

DAN VAN HOLST PELLEKAAN
Minister for Energy and Mining

ELECTRICITY ACT 1996
GAS ACT 1997

RETAILER ENERGY PRODUCTIVITY SCHEME

Ministerial Notice—Priority Group Membership

Pursuant to Regulation 23(1) of the *Electricity (General) Regulations 2012* and Regulation 17(1) of the *Gas Regulations 2012*, I define a priority group household as residential premises in which a person resides who:

- holds a Commonwealth Government pensioner concession card
- holds a TPI Gold Repatriation Health Card
- holds a War Widows Gold Repatriation Health Card
- holds a Gold Repatriation Health Card (EDA)
- holds a Health Care Card (including a Low-Income Health Care Card)
- receives the South Australian government energy bill concession
- has a residential tenancy agreement with the landlord of the premises and the rent for the premises is \$400 or less per week
- is actively participating in an energy retailer hardship program
- is actively participating in an energy retailer's payment plan (offered and applied as per section 50 of the National Energy Retail Law)
- has received a referral from a registered member of the South Australian Financial Counsellors Association (SAFCA)

Dated: 21 December 2020

DAN VAN HOLST PELLEKAAN
Minister for Energy and Mining

ELECTRICITY ACT 1996
GAS ACT 1997

RETAILER ENERGY PRODUCTIVITY SCHEME

Ministerial Notice—Minimum Specifications for Energy Productivity Activities

Pursuant to Regulation 28 of the *Electricity (General) Regulations 2012* and Regulation 22 of the *Gas Regulations 2012*, I determine the activities within the following document to be energy productivity activities for the purposes of Part 4 of the *Electricity (General) Regulations 2012* and Part 4 of the *Gas Regulations 2012* from 1 January 2021.

This notice will take effect on 1 January 2021.

Dated: 21 December 2020

DAN VAN HOLST PELLEKAAN
Minister for Energy and Mining

RETAILER ENERGY PRODUCTIVITY SCHEME (REPS) ACTIVITIES GENERAL SPECIFICATIONS

For all activities

The description and specifications for activities contained within this document are minimum requirements that obligated 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 specifications set out in this document, 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.

The term "Priority Group Household" where used in this specification means: households in which a person of a class determined by the Minister for the purposes of the REPS Regulations resides.

The term "Small Energy Consuming Customer" (SECC) means: a non-residential customer consuming less than 160MWh of electricity per National Meter Identifier in the 12 months prior to any upgrade works credited under this specification.

The term "Large Energy Consuming Customer" (SECC) means: a non-residential customer consuming more than 160MWh of electricity per National Meter Identifier in the 12 months prior to any upgrade works credited under this specification.

The recipient of REPS activities 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 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. The co-payment will apply once per premise regardless of the number of activities delivered. The requirement for a co-payment resets after the first five-year period of the REPS. This minimum co-payment requirement does not apply to priority group recipients. A co-payment is not required if a household only receives one or more of the following activities: APP2, WH3, TOU1, VPP1, APP4, HC2C, EV1, WH4.

Any reference to gas within these specifications refers to gas as defined in the *Gas Act 1997*, unless otherwise specified.

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.

Obligated retailers must be satisfied with the fitness and propriety of any person providing energy productivity activities in a customer's premises as per the requirements of a REPS Code published by the Essential Services Commission of South Australia.

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.

The Minister may delegate the power to grant approvals under one or more of the specifications to a person or to any person from time to time holding, occupying, or performing the duties of, a specified office or position. Where such a delegation has been made, references in the specifications to approvals by the Minister shall include approvals by their delegate.

Install Insulation in an Uninsulated Ceiling Space; (Residential and Small Energy Consuming Customers Only)	Activity No.
	BS1A

1. ACTIVITY SPECIFIC DEFINITIONS

Habitable Room means any space that can be occupied within a building. This does not include any attached garages, sheds or the like in class 1 or 2 buildings or storage spaces or similar within commercial buildings that are not space conditioned.

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 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 or small energy consuming customers premises subject to this activity must contain at least 20m² 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) 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.
- (5) The following activities are excluded:
 - Use of reflective foil laminate sheeting
 - Use of blow in cellulosic-based products

4. INSTALLED PRODUCT REQUIREMENTS

The installed product must:

- (1) Comply with the performance requirements of the effective version of AS/NZS 4859.1:2018
- (2) Achieve a minimum winter R value, when measured in accordance with the effective version of AS/NZS 4859.1:2018 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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved from undertaking this activity is equal to:

Normalised REPS GJs = Productivity Factor (as per table below) x Insulation Area (m²*) x REPS Transition Factor (as per table below)

ACTIVITY BS1A - PRODUCTIVITY FACTORS

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 gigajoules.

Install Top Up Insulation in a Ceiling Space (Residential and Small Energy Consuming Customers Only)	Activity No.
	BS1B

1. ACTIVITY SPECIFIC DEFINITIONS

Habitable Room means any space that can be occupied within a building. This does not include any attached garages, sheds or the like in class 1 or 2 buildings or storage spaces or similar within commercial buildings that are not space conditioned.

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 or small energy consuming customers 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 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 4859.1:2018
- (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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = Productivity Factor (as per table below) x Insulation Area (m²*) x REPS Transition Factor (as per table below).

ACTIVITY BS1B - PRODUCTIVITY FACTORS

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 gigajoules.

ACTIVITY BS1B – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	5
2022	4
2023	3
2024	2
2025 onwards	1

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.

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities.

Building Sealing Activities (Various); (Residential and Small Energy Consuming Customers Only)	Activity No.
	BS2

1. ACTIVITY SPECIFIC DEFINITIONS

Habitable Room means any space that can be occupied within a building. This does not include any attached garages, sheds or the like in class 1 or 2 buildings or storage spaces or similar within commercial buildings that are not space conditioned.

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 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 premises. All eligible doors at a 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 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 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 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 cm² open to the outside air. External wall openings to underfloor spaces must not be sealed. All eligible wall vents at a premises must be draught proofed, where practical.

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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved from undertaking this activity is equal to:

- For Door sealing:
Normalised REPS Gigajoules = Productivity Factor (as per table below) x Number of doors sealed
- For Window sealing:
Normalised REPS Gigajoules = Productivity Factor (as per table below) x Lineal metres of window perimeter sealed
- For fireplace or chimney sealing:
Normalised REPS Gigajoules = Productivity Factor (as per table below) x Number of chimneys/fireplaces sealed
- For exhaust fan sealing:
Normalised REPS Gigajoules = Productivity Factor (as per table below) x Number of exhaust fans sealed
- For wall vent sealing:
Normalised REPS Gigajoules = 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

Secondary Glazing Retrofit; (Residential and Small Energy Consuming Customers Only)	Activity No.
	BS3B

1. ACTIVITY SPECIFIC DEFINITIONS

Habitable Room means any space that can be occupied within a building. This does not include any attached garages, sheds or the like in class 1 or 2 buildings or storage spaces or similar within commercial buildings that are not space conditioned.

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 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*.

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 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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = Productivity Factor (as per table below) x Total Window Area (m²) x REPS Transition Factor (as per table below).

ACTIVITY BS3B – PRODUCTIVITY FACTORS

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

ACTIVITY BS3B – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	5
2022	4
2023	3
2024	2
2025 onwards	1

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities

Install an Efficient New Reverse Cycle Air Conditioner (Non-Ducted); (Residential and Small Energy Consuming Customers 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)

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 building or Small Energy Consuming Customers 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 premises must be fully decommissioned, removed from the property and disposed of.

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 include demand response capability, in accordance with AS/NZS 4755.3.1:2014, or AS/NZS 4755.2 (when published), or the equivalent of the superseded AS/NZS 4755.3.1:2012. 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 the above noted standards.

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/coolers 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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = REPS Gigajoules (as per the first six tables below) x **REPS Transition Factor** (as per the final table below).

Separate REPS Gigajoules tables are provided for "NCC climate zone 6" and "other places in SA" and;

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

REPS Gigajoules 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 REPS Gigajoules 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).

REPS Gigajoules

{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
		ACOP or HSPF>	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	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
		ACOP or HSPF>	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	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	
		AER 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
		ACOP or HSPF	REPS Credit (GJ)													
Heating Stars Old	Heating Stars New		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
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	
		AER 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
		ACOP or HSPF	REPS Credit (GJ)													
Heating Stars Old	Heating Stars New		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
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	
		AER 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
		ACOP or HSPF	REPS Credit (GJ)													
Heating Stars Old	Heating Stars New		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
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	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	
		AEER or TCSP>	4 to < 4.25	4.25 to < 4.5	4.75	5	5.25	5.5	5.75	6	6.25	6.5	6.75	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		

ACTIVITY HC2A – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factors		
	HC2A(i)	HC2A(ii)	HC2A(iii)
2021	5	1	5
2022	4	1	4
2023	3	1	3
2024	2	1	2
2025 onwards	1	1	1

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).

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities

Install an Efficient New Reverse Cycle Air Conditioner (Ducted or Multi-Split); Residential and Small Energy Consuming Customers 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 an area of not less than 100 m² 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 premises concrete floor system and services an area of not less than 100 m².

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 building or Small Energy Consuming Customers 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.

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 include demand response capability, in accordance with AS/NZS 4755.3.1:2014, or AS/NZS 4755.2 (when published), or the equivalent of the superseded AS/NZS 4755.3.1:2012. 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 the above noted standards.

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).

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		
		AER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.75	5	5.25	5.5	5.75	6	6.25	6.5	6.75	7	7 to < 7.25	7.25 or more	
RePS Credit (Gt)																	
Heating Stars Old	Heating Stars New	ACOP or HSPF	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
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 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		
		AEE or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.75	5	5.25	5.5	5.75	6	6.25	6.5	6.75	7	7 to < 7.25	7.25 or more	
REPS Credit (GJ)																	
Heating Stars Old	Heating Stars New	ACOP or HSPF	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	
3.5 to < 4	2.5 to < 3	4 to < 4.25															
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	91.9	92.6	93.2	93.9	94.5	95.1	

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		
		AER or TCSPF>	4 to < 4.25	4.25 to < 4.5	4.75	5	5.25	5.5	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	P5 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	

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
		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	
		AER or TCSPF	4 to < 4.25	4.25 to < 4.5	4.75	5	5.25	5.5	5.75 to < 6	6	6.25	6.5	6.75 to < 7	7	7 to < 7.25	7.25 or more
		REPS Credit (GJ)														
Heating Stars Old	Heating Stars New	ACOP or HSPF	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
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	144.5	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 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	4.75	5	5.25	5.5	5.75	6	6.25	6.5	6.75	7	7 to < 7.25	7.25 or more
		ACOP or HSPF	4 to < 4.25	4.25 to < 4.5	4.75	5	5.25	5.5	5.75	6	6.25	6.5	6.75	7	7 to < 7.25	7.25 or more
Heating Stars Old	Heating Stars New	REPS Credit (GJ)	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
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).

Replace or Upgrade Water Heater; Residential and Small Energy Consuming Customers 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), or
- Small energy consuming customer

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.

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 $220 < \text{tank size} \leq 400$ litres shall earn ≥ 27 STCs for Zone 3.
- (5) Solar electric and gas boosted solar systems $400 < \text{tank size} \leq 700$ 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 3500:2018 (plumbing and drainage standards); AS/NZS 3500.4:2018 (Plumbing and drainage - Heated water services), AS 4552:2010 (gas hot water systems); AS/NZS 60335.2.21:2013 (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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = 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) or a Small energy consuming customer	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 and small energy consuming customers 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://www.cleanenergyregulator.gov.au/>
- (4) All reasonable endeavours should be used to recycle removed water heaters.
- (5) Main gas, LPG and other gas systems as included in this specification 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: <https://www.rec-registry.gov.au/rec-registry/app/calculators/sw-h-stc-calculator>

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. 40°C). 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*.

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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved (per showerhead) from undertaking this activity is equal to:

Normalised REPS Gigajoules = 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).

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).

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 per cent 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.

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 90 lm/W
- (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 Victorian VEU 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.

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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved (per lamp installed) from undertaking this activity is equal to:

Normalised REPS Gigajoules= Productivity factor (as per table below) x REPS Transition Factor (as per table below).

Table L1A: Non-Directional Lamps – Productivity Factors

A	B	C	D	Replacement Lamp Efficacy Range					
				90 – 99 Lm/W	100-109 Lm/W	110-119 Lm/W	120-129 Lm/W	130-139 Lm/W	140 + Lm/W
Class	Removed Lamp: Typical rated incandescent lamp power (W)	Removed Lamp: Typical rated halogen lamp power (W)	Installed Lamp: Minimum luminous flux (lumens)						
0	25	18	200	0.068	0.083	0.095	0.105	0.114	0.121
1	40	28	350	0.104	0.130	0.151	0.169	0.184	0.196
2	60	42	650	0.149	0.197	0.236	0.269	0.297	0.320
3	75	53	850	0.186	0.249	0.301	0.343	0.380	0.411
4	100	70	1150	0.245	0.330	0.399	0.457	0.506	0.548
5	150 or higher	105 or higher	1800	0.363	0.496	0.604	0.695	0.772	0.837

Table L1B: Directional Lamps – Productivity Factors

A	B	C	D	Replacement Lamp Efficacy Range					
				90 – 99 Lm/W	100-109 Lm/W	110-119 Lm/W	120-129 Lm/W	130-139 Lm/W	140 + Lm/W
Class	Removed Lamp: Typical rated incandescent lamp power (W)	Removed Lamp: Typical rated halogen lamp power (W)	Installed Lamp: Minimum luminous flux (lumens)						
0	25	18	150	0.062	0.073	0.082	0.090	0.096	0.102
1	40	28	250	0.094	0.113	0.128	0.141	0.151	0.160
1a	50	35	350	0.114	0.140	0.161	0.178	0.193	0.206
2	60	42	460	0.132	0.166	0.193	0.217	0.236	0.253
3	75	53	600	0.164	0.208	0.244	0.275	0.300	0.322
4	100	70	810	0.214	0.274	0.323	0.364	0.398	0.428
4a	120	84	990	0.255	0.328	0.388	0.438	0.480	0.516
5	150 or higher	105 or higher	1260	0.316	0.409	0.485	0.549	0.602	0.648

ACTIVITY L1 – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	2
2022	1.5
2023	1
2024	1
2025 onwards	1

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

All reasonable endeavours should be undertaken to recycle removed equipment.

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities

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 per cent 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.

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 90 Lumens/Watt.
- (5) Have a minimum beam angle of 40 degrees.
- (6) Either:

- (a) Be approved under the NSW ESS or Victorian VEU 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.

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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved (per unit installed) from undertaking this activity is equal to:

Normalised REPS Gigajoules = The relevant Productivity factor (as per table below) x REPS Transition Factor (as per table below).

ACTIVITY L2 – PRODUCTIVITY FACTORS

A	Replacement Lamp Efficacy Range					
Activity	90 – 99 Lm/W	100-109 Lm/W	110-119 Lm/W	120-129 Lm/W	130-139 Lm/W	140 + Lm/W
L2A - Lamp only replacement	0.147	0.189	0.224	0.253	0.278	0.299
L2B - Lamp and transformer replacement	0.155	0.197	0.231	0.260	0.284	0.304

ACTIVITY L2 – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	2.5
2022	1.25
2023	1
2024	1
2025 onwards	1

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

All reasonable endeavours should be undertaken to recycle removed equipment

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities

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

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.

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 70 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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved (per unit installed) from undertaking this activity is equal to:

Normalised REPS Gigajoules = The relevant Productivity factor (as per table below) x REPS Transition Factor (as per table below).

ACTIVITY L3 – PRODUCTIVITY FACTORS

P = power of existing luminaire (W)	Min. Luminaire Light Output (lm)	Replacement Luminaire Efficacy Range					
		70-89 Lm/W	90-109 Lm/W	110-129 Lm/W	130-149 Lm/W	150-169 Lm/W	170 + Lm/W
100 < P < 150W	1500	0.260	0.576	0.778	0.917	1.019	1.097
150 ≤ P < 200W	2500	0.299	0.826	1.161	1.394	1.564	1.694
200 ≤ P < 300W	3500	0.337	1.075	1.545	1.870	2.109	2.291
300 ≤ P < 500W	5700	0.341	1.543	2.308	2.838	3.226	3.523
500 ≤ P	10000	0.386	2.495	3.837	4.766	5.448	5.969

ACTIVITY L3 – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	2
2022	1.5
2023	1
2024	1
2025 onwards	1

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

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities

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 National construction 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

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 gigajoules 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 the 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 Upgrades Program 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 2293:2018 Emergency escape lighting and exit signs for buildings
 - AS/NZS 1158:2020 Lighting for roads and Public Spaces
 - AS 2144:2014 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, 2020. This requirement can be met by any reasonably verifiable and technically sound means proposed by the installer, and
- AS/NZS 3000:2018 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 Upgrades program 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 1680:2017.
- 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 gigajoules calculated in accordance with the REPS gigajoules 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' or any relevant equivalent successor REPS bulletin.
- (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 1680:2017.
 - 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. NORMALISED REPS GIGAJOULES

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

Normalised REPS Gigajoules = output from the ESS Commercial Lighting Calculation Tool as expressed in 'saved MWh' x 3.6 x Productivity Factor (up to a maximum of 20,000 GJ).

Where the productivity Factor = **1.207**

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

Where linear fluorescent luminaires are modified to accept linear LED tubes, REPS gigajoules 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>

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).

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.

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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved (per unit installed) from undertaking this activity is equal to:

Normalised REPS Gigajoules = The relevant Productivity factor (as per table below) x REPS Transition Factor (as per table below)

ACTIVITY SPC1- PRODUCTIVITY FACTORS

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

ACTIVITY SPC1 – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	2
2022	1
2023	1
2024	1
2025 onwards	1

7. GUIDANCE NOTES

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities

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).

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.

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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved (per unit installed) from undertaking this activity is equal to:

Normalised REPS Gigajoules = The relevant Productivity factor (as per table below) x REPS Transition Factor (as per table below).

ACTIVITY SPC2- PRODUCTIVITY FACTORS

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

ACTIVITY SPC2 – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	2
2022	1
2023	1

2024	1
2025 onwards	1

7. GUIDANCE NOTES

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities.

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.

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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved (per appliance) from undertaking this activity is equal to:

Normalised REPS Gigajoules = Productivity Factor (as per table below) x REPS Transition Factor (as per table below).

ACTIVITY APP1A – REPS PRODUCTIVITY FACTORS – GROUP 1

Gigajoules 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

ACTIVITY APP1A – REPS PRODUCTIVITY FACTORS – GROUP 5T, 5B AND 5S

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

ACTIVITY APP1A – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	4
2022	4
2023	3
2024	2
2025 onwards	1

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

- (1) This activity may be undertaken in conjunction with activity APP2, in which case gigajoules 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.
- (4) Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities

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 62552.3:2018 in litres

Adjusted volume is the adjusted volume determined in accordance with AS/NZS 4474:2018 or AS/NZS IEC 62552.3:2018 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.

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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules per appliance purchased is equal to:

Normalised REPS Gigajoules = Productivity Factor (as per table below) x REPS Transition Factor (as per table below).

ACTIVITY APP1B – REPS PRODUCTIVITY FACTORS – GROUP 6C

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

ACTIVITY APP1B – REPS PRODUCTIVITY FACTORS – GROUP 6U & 7

Group	Star Rating										
6u & 7											
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

ACTIVITY APP1B – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	4
2022	4
2023	3
2024	2
2025 onwards	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.

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities

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.

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. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules per appliance purchased is equal to:

Normalised REPS Gigajoules= The relevant Productivity factor (as per table below) x REPS Transition Factor (as per table below).

ACTIVITY APP1D – REPS PRODUCTIVITY FACTORS

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.

ACTIVITY APP1D – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	4
2022	4
2023	3
2024	2
2025 onwards	1

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/.

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities

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

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.

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. NORMALISED REPS GIGAJOULES

Normalised REPS Gigajoules = 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 Gigajoules
APP2 (1)	Main (Primary)	Pre 1996 (R12)	Single Door of \geq 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)	\geq 1996, or unknown	Single Door of \geq 1150mm Height	5.99
APP2 (6)	Main (Primary)	\geq 1996, or unknown	Single Door of < 1150mm Height	1.84
APP2 (7)	Main (Primary)	\geq 1996, or unknown	Two door Refrigerator/Freezer	8.28

Activity Reference Number	Type of Refrigerator/ Freezer	Year of Manufacture	Refrigerator/Freezer Configuration	Normalised REPS Gigajoules
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 Gigajoules
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
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 gigajoules for both this activity and activity APP1A may be claimed.

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.

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 7 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 2500W.
- (5) As a proclaimed product in South Australia, any pool pump shall meet the safety requirements of AS/NZS 60335.2.41:2013.
- (6) The installed product must include demand response capability, in accordance with AS/NZS 4755.3.2:2014, 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 or AS/NZS 4755.2 (when published).

5. MINIMUM INSTALLATION REQUIREMENTS

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

6. NORMALISED REPS GIGAJOULES

The normalised REPS credits per appliances purchased is equal to:

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

APP3 REPS PRODUCTIVITY FACTORS (PER PUMP)

GEMS Star Rating	Productivity Factor
7 Star	16.99
8 Star	19.86
9 Star	22.16
10 Star	23.99

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/.

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

1. ACTIVITY SPECIFIC DEFINITIONS

Refrigerated Display Cabinet (Also called a Refrigerated Cabinet in The Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020) – 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:

- AS 1731 as referenced by: Greenhouse and Energy Minimum Standards (Refrigerated Display Cabinets) Determination 2012 (up until 30 April 2021) or;
- The Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020 (1 May 2021 onwards)

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 or the Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020 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 or the Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020- 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 or within the meaning of The Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

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

4. PRODUCT REQUIREMENTS

- (1) For products registered to the AS1731 Standard, the RDC must be rated as 'high efficiency' within the meaning of the AS1731 series of standards when tested in accordance with the AS1731 series of standards as applicable. For products registered to the Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020 the refrigerated display cabinet must have an Energy Efficiency Index (EEI) of less than 77 as calculated within the terms defined in ISO 23953-2 and
- (2) The RDC must be registered and listed on the GEMS register of currently approved products and
- (3) For products registered to the AS1731 Standard, 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. NORMALISED REPS GIGAJOULES

FOR PRODUCTS REGISTERED TO:

AS 1731 AS REFERENCED BY: GREENHOUSE AND ENERGY MINIMUM STANDARDS (REFRIGERATED DISPLAY CABINETS) DETERMINATION 2012 (UP UNTIL 30 APRIL 2021)

Normalised REPS Gigajoules = 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 – PRODUCTIVITY FACTORS

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 – PRODUCTIVITY FACTORS

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

Activity Reference Number	Type of Refrigerated Display Cabinet (as defined in AS1731)	Productivity Factor
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
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

FOR PRODUCTS REGISTERED TO: THE GREENHOUSE AND ENERGY MINIMUM STANDARDS (REFRIGERATED CABINETS) DETERMINATION 2020 (1 MAY 2021 ONWARDS)

Normalised REPS Gigajoules = (Baseline Efficiency x TDA-TEC) x 8.8385*

Where:

TEC, in kWh/day, is the daily Total Energy Consumption of the new RDC model as determined using GEMS 2020 Section 2 and recorded in the GEMS Registry;

Baseline Efficiency, in kWh/day/m², is the corresponding figure for the type of the new RDC model, as determined by Section 25 of the GEMS 2020 Determination and recorded in the GEMS Registry

TDA, in m², is the Total Display Area of the new RDC model as determined using AS1731.14 and recorded in the GEMS Registry;

* 365 (days) x 8 (Years Lifetime) x 3.6 (convert to MJ) x 0.8 (additionality factor) x 1.051 (productivity factor) / 1000 (convert to GJ)

Refrigerated Cabinet Product Class (product code)	Baseline efficiency (kWh/day/m2)
Class 1 (IRH)	5.54
Class 2 (IFH)	10.78
Class 3 (SRH)	5.93
Class 4 (SFH)	8.72
Class 5 (IFH-5)	4.93
Class 6 (GSC or ISC)	31.42
Class 7 (IRV)	14.01
Class 8 (IFV)	15.94
Class 9 (SRV)	2.67
Class 10 (SFV)	6.22
Class 11 (IRV-4)	5.13
Class 12 (RRH)	5.54
Class 13 (RFH)	10.78
Class 14 (RRV or RRV-2)	14.01
Class 15 (RFV)	15.94

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"

Switch Electric (HP or resistance) water heater to tariff with solar sponge and off-peak blocks; Residential or Small Energy Consuming Customer (SECC) 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 or their delegate.

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 or their delegate.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

- (1) Any residential or small energy consuming customer premises in South Australia where the installed product requirements and minimum installation requirements can be met.
- (2) Existing electricity metering for the premises and the electric (heat pump or resistance) storage water heater must use a type 6 electricity meter, or an equivalent meter approved by the Minister or their delegate.
- (3) Activity WH3 has must not have previously been implemented for the electricity customer at the same premises.
- (4) Premises is not eligible if it is mandatorily assigned to a controlled load time of use tariff in accordance with SA Power Networks tariff structure statement or the Electricity (General) Regulations 2012.
- (5) Residential consumers moving from OPCL tariff to a whole of house residential ToU or Residential Prosumer are eligible. However, evidence must be retained that that the hot water electricity consumption is managed within off-peak and solar sponge periods as defined in the SAPN Tariff Structure Statement. Consumers would remain eligible for the TOU1 activity.

4. INSTALLED PRODUCT REQUIREMENTS

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

5. MINIMUM INSTALLATION REQUIREMENTS

- (1) The customer must switch their electric (heat pump or resistance) storage water heater to the OPCL tariff (solar sponge), as defined by SAPN, or another tariff, approved by the Minister or their delegate.
- (2) Customers must fulfil the requirements of the energy retailer and SAPN for utilisation of the off-peak controlled load tariff.
- (3) The electricity retailer tariff must fully pass through the SAPN OPCL (solar sponge) tariff.

6. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules achieved from undertaking this activity is equal to:

Normalised REPS gigajoules = Productivity Factor (as per table below) x number of eligible appliances

ACTIVITY WH3 – PRODUCTIVITY FACTORS

Activity	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 per cent 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.

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 or their delegate.
- (4) Activity WH3 has must not have previously been implemented for the electricity customer at the same premises.
- (5) Premises is not eligible if it is mandatorily assigned to a controlled load time of use tariff in accordance with SA Power Networks tariff structure statement or the Electricity (General) Regulations 2012 or mandatorily assigned to a retailer's time of use standing offer under Section 22 of the *National Energy Retail Law (South Australia) Act 2011*.

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

5. NORMALISED REPS GIGAJOULES

The normalised REPS Gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = Productivity factor (as per table below) x number of eligible appliances

ACTIVITY TOU1 – PRODUCTIVITY FACTOR

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.

Connecting a New or Existing Battery to an Approved Virtual Power Plant; Residential or Small Energy Consuming Customer (SECC) Only	Activity No.
	VPP1

1. ACTIVITY SPECIFIC DEFINITIONS

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

Approved Virtual Power Plant (VPP) is a VPP approved by the Minister or their delegate.

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

- (1) Any residential or energy consuming customer premises in South Australia where the installed product requirements and minimum installation requirements can be met, and this activity has not already been implemented.
- (2) Any additional eligibility requirements of the chosen Approved VPP
- (3) 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
- (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. NORMALISED REPS GIGAJOULES

The normalised REPS Gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = Productivity factor (as per table below) x number of eligible appliances

ACTIVITY VPP1 – PRODUCTIVITY FACTORS

Battery Size (kWh)	Productivity Factor
2 ≤ Battery size < 4	17.2
4 ≤ Battery size < 6	34.5
6 ≤ Battery size < 8	51.7
8 ≤ Battery size < 10	68.9

Battery Size (kWh)	Productivity Factor
$10 \leq \text{Battery size} < 12$	86.2
$12 \leq \text{Battery size} < 14$	103.4
$14 \leq \text{Battery size} < 16$	120.6
$16 \leq \text{Battery size} < 18$	137.8
$18 \leq \text{Battery size} < 20$	155.1
$20 \leq \text{Battery size} < 22$	172.3
$22 \leq \text{Battery size} < 24$	189.5
$24 \leq \text{Battery size} < 26$	206.8
$26 \leq \text{Battery size} < 28$	224.0
$28 \leq \text{Battery size}$	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 or their appointed delegate may approve VPPs.

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

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.

Smart control device means an electrical device which meets the minimum levels of functionality to comply with AS/NZS 4755 or is otherwise approved by the Minister or their delegate

Demand Response (DR) Aggregator means an entity that commercially orchestrates electricity demand response services by aggregating electricity demand using smart control devices fitted to equipment, and exercising contractual rights to control the equipment

Approved DR Aggregator means a **DR Aggregator** approved by the Minister or their delegate

2. ACTIVITY DESCRIPTION (SUMMARY)

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

3. ACTIVITY ELIGIBILITY REQUIREMENTS

- (1) Any residential household in South Australia where the installed product requirements and minimum installation requirements can be met.
- (2) Activity APP4 has must not have previously been implemented for the Pool Pump.

4. INSTALLED PRODUCT REQUIREMENTS

- (1) The pool pump shall operate on single or three phase mains power.
- (2) The pool pump shall have an input rating of not less than 100W and not more than 1500W.
- (3) As a proclaimed product in South Australia, any pool pump shall meet the safety requirements of AS/NZS 60335.2.41:2004
- (4) The pool pump shall be fitted with a smart control device.
- (5) 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:

- (1) 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
- (2) AS/NZS 3000 (2018) wiring regulations, with a certificate of compliance by a licenced electrician.

6. NORMALISED REPS GIGAJOULES

The normalised REPS Gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = Productivity factor (as per table below) x number of eligible appliances x REPS Transition Factor (RTF)

ACTIVITY APP4 – PRODUCTIVITY FACTOR

Activity	Productivity Factor
Connecting a New or Existing Pool Pump to an Approved DR Aggregator	1.94

ACTIVITY APP4 – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	4
2022	4
2023	3
2024	3
2025	2
2026 onwards	1

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 per cent of maximum 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
- Consumer value proposition
- Demonstrated commercial capacity and capability, intent and practice to dispatch aggregated DR capacity for the duration and frequency required
- Smart control hardware, software and communications connections and operational capacity and capability for DR orchestration
- Smart control device product and installation quality and safety provisions
- Consumer protection provisions.

The Minister or their appointed delegate may approve demand response aggregators.

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

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities.

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.

Smart control device means an electrical device which meets the minimum levels of functionality to comply with AS/NZS 4755 or is otherwise approved by the Minister or their delegate.

Demand Response (DR) Aggregator means an entity that commercially orchestrates electricity demand response services by aggregating electricity demand using smart control devices fitted to equipment, and exercising contractual rights to control the equipment

Approved DR Aggregator means a **DR Aggregator** approved by the Minister or their delegate.

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

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

- (1) Any reverse cycle air conditioner (ducted, multi-split or non-ducted) installed shall be fitted with a smart control device.
- (2) 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:

- (1) AS/NZS 60335.2.40: 2019 (Household and similar electrical appliances - Safety Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers);

- (2) 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
- (3) AS/NZS 3000 (2018) wiring regulations, with a certificate of compliance by a licenced electrician

6. NORMALISED REPS GIGAJOULES

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

The normalised REPS gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = Productivity Factor (as per table below) x number of eligible appliances x REPS Transition Factor (RTF)

ACTIVITY HC2C – PRODUCTIVITY FACTORS

Activity	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

ACTIVITY HC2C – REPS TRANSITION FACTORS

Year of Installation	REPS Transition Factor
2021	4
2022	4
2023	3
2024	3
2025	2
2026 onwards	1

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 per cent of maximum 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;
- Consumer value proposition;

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

The Minister or their appointed delegate may approve demand response aggregators.

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

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities.

Connecting a New or Existing EV Charger to an Approved DR Aggregator; Residential or Small Energy Consuming Customer (SECC) 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).

Smart control device means an electrical device which meets the minimum levels of functionality to comply with AS/NZS 4755 or is otherwise approved by the Minister or their delegate.

Demand Response (DR) Aggregator means an entity that commercially orchestrates electricity demand response services by aggregating the electricity demand using smart control devices fitted to equipment and exercising contractual rights to control the equipment.

Approved DR Aggregator means a **DR Aggregator** approved by the Minister or their delegate.

2. ACTIVITY DESCRIPTION (SUMMARY)

Connect a new or existing EV Charger to an Approved DR Aggregator.

3. ACTIVITY ELIGIBILITY REQUIREMENTS

- (1) Any residential or small energy consuming customer premises in South Australia where the installed product requirements and minimum installation requirements can be met.
- (2) Activity EV1 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:

- (1) Any EV charger installed shall be fitted with a smart control device.
- (2) 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:

- (1) 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
- (2) with AS/NZS 3000 (2018) wiring regulations, with a certificate of compliance by a licenced electrician.

6. NORMALISED REPS GIGAJOULES

The normalised REPS Gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = Productivity Factor (as per table below) x number of eligible appliances x REPS Transition Factor (RTF)

ACTIVITY EV1 – PRODUCTIVITY FACTOR

Activity	Productivity Factor
Connecting EV charger to DR aggregator	5.27

ACTIVITY EV1 – REPS TRANSITION FACTORS

Year of installation	Transition Factor
2021	4
2022	4
2023	3
2024	3
2025	2
2026 onwards	1

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 per cent of maximum 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;
- Consumer value proposition;
- Demonstrated commercial capacity and capability, intent and practice to dispatch aggregated DR capacity for the duration and frequency required;
- Smart control hardware, software and communications connections and operational capacity and capability for DR orchestration;
- Smart control device product and installation quality and safety provisions; and
- Consumer protection provisions.

The Minister or their appointed delegate may approve demand response aggregators.

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

Transition factors have been applied to certain REPS activities to provide a pathway to transition the REPS toward delivery of a preferred mix of activities over the first five-year stage. Application of these factors provides a phased trajectory for retailers that addresses both the challenge of managing the downgrading of deemed gigajoules for lighting activities due to reducing additionality, as well as the pivot toward business models to deliver deeper retrofit activities and demand response activities.

Connecting a New or Existing Electric Heat Pump Water Heater to an Approved DR Aggregator; Residential Only	Activity No.
	WH4

1. ACTIVITY SPECIFIC DEFINITIONS

Smart control device means an electrical device which meets the minimum levels of functionality to comply with AS/NZS 4755 or is otherwise approved by the Minister or their delegate.

Demand Response (DR) Aggregator means an entity that commercially orchestrates electricity demand response services by aggregating the electricity demand using smart control devices fitted to equipment and exercising contractual rights to control the equipment.

Approved DR Aggregator means a **DR Aggregator** approved by the Minister or their delegate.

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

- (1) Any residential class 1 and class 2 dwellings in South Australia where the installed product requirements and minimum installation requirements can be met.
- (2) Activity HW4 has must not have previously been implemented for the specific new or existing water heater.

4. INSTALLED PRODUCT REQUIREMENTS

- (1) Any water heater installed shall be fitted with a smart control device.
- (2) 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:

- (1) 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
- (2) AS/NZS 3000 (2018) wiring regulations, with a certificate of compliance by a licenced electrician.

6. NORMALISED REPS GIGAJOULES

The normalised REPS Gigajoules achieved from undertaking this activity is equal to:

Normalised REPS Gigajoules = Productivity Factor (as per table below) x number of eligible appliances x REPS Transition Factor (RTF)

ACTIVITY WH4 – PRODUCTIVITY FACTOR

Activity	Productivity Factor
Connect Electric Heat Pump Water Heater to DR Aggregator	2.73

ACTIVITY WH4 – TRANSITION FACTOR

Year of Installation	Transition Factor
2021	4
2022	4
2023	3
2024	3
2025	2
2026 onwards	1

7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

Productivity factors assume an 8-year contract term and that 100 per cent of maximum 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
- Consumer value proposition
- Demonstrated commercial capacity and capability, intent and practice to dispatch aggregated DR capacity for the duration and frequency required
- Smart control hardware, software and communications connections and operational capacity and capability for DR orchestration
- Smart control device product and installation quality and safety provisions
- Consumer protection provisions.

The Minister or their appointed delegate may approve demand response aggregators.

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

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

The Normalised REPS Gigajoules for this activity must not exceed 100,000 GJ.

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 responsibly.

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. NORMALISED REPS GIGAJOULES

The normalised REPS Gigajoules achieved 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 Gigajoules

Normalised REPS Gigajoules = 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; **and**

Step 6 – Maximum Normalised REPS Gigajoules

Normalised REPS Gigajoules = the lesser of 100,000 GJ or the output of step 5 above.

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 and (where relevant) Independent Variables and Site Constants, where the Coefficient of Variation of the energy consumption over the Measurement Period is less than 15 per cent

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 ESCOSA

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.

Gas means a fuel consisting of hydrocarbons or predominantly of hydrocarbons that is in a gaseous or vapour form when it is at the pressure and temperature of its normal pipeline transportation and utilisation conditions, but does not include anything declared by regulation not to be gas

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 Baseline Energy Model measurements.
- (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 (including measurement period), 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.
 - Have a measurement period that spans at least one full operating cycle from maximum energy use to minimum.
 - Fairly represent the operating conditions of a normal cycle.
 - 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.
 - Have a Measurement Period that spans at least one full operating cycle from maximum energy use to minimum.
 - Estimate annual energy consumption based on a Normal Year.
 - Have a start date that occurs after the Activity is implemented.

- Be deemed appropriate for the Implementation by a Measurement and Verification Professional, with their written explanatory reasoning provided.
- (5) Normal Year Energy Savings and Measured Energy Savings must exclude any time periods for which any of the measured Independent Variables are less than 95 per cent of the minimum or greater than 105 per cent of the maximum of the Effective Range of that independent Variable for either the Baseline Energy Model or Operating Energy Model; or where the Site Constants are not their standard value.
- (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, or
 - recorded using a statistical calculation program, with all input and output data, calculation programming settings, and the program version used recorded and retained. This includes (but is not limited to) any scripts, procedures, spreadsheets or other programs used to calculate savings.
- (8) Multiple Activities may be conducted at a single premises. Normalised Energy Savings that have been credited in previous years or as a separate Activity for any equipment within the measurement boundary of the Activity are treated as Counted Energy Savings for this Activity.
- (9) Installation of lighting is not an eligible Activity in this specification. Normalised Energy Savings credited for lighting upgrades using another specification within the measurement boundary for this Activity are treated as Counted Energy Savings for this Activity.
- (10) Installation of solar PV is not an eligible Activity in this specification. If the measurement boundary for the Activity includes solar PV, the Measurement and Verification Professional must ensure that the Normalised Energy Savings do not benefit from increased solar PV generation.
- (11) The Normalised REPS Gigajoules for this Activity must not exceed 100,000 GJ.

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:
- If the equipment is a lighting product, 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 responsibly.

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, input and output data, programming settings, and completed version of the calculator used. Calculations must be presented in a format specified by ESCOSA, if relevant.

7. ACTIVITY ENERGY SAVINGS

The Normalised REPS Gigajoules achieved from undertaking this activity is equal to either:

- a) Normal Year Energy Savings:

$$\text{Normalised Energy Saving (GJ)} = \sum_i (\text{Normal Year Electricity Savings} \times \text{Accuracy Factor} \times \text{Decay Factor}_i \times 3.6 \times \text{Productivity Factor} + \sum_i (\text{Normal Year Gas Savings} \times \text{Accuracy Factor} \times \text{Decay Factor}_i \times \text{Gas Normalisation Factor}) \times 3.6 - \text{Counted Energy Savings}$$

For all years i over the Maximum Time Period for Forward Creation.

Or

- b) Measured Energy Savings:

$$\text{Normalised Energy Saving (GJ)} = (\text{Measured Electricity Savings} \times \text{Accuracy Factor}) \times 3.6 \times \text{Productivity Factor} + (\text{Measured Gas Savings} \times \text{Accuracy Factor} \times \text{Gas Normalisation Factor}) \times 3.6 - \text{Counted Energy Savings}$$

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 per cent 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 or as a separate Activity 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.

ESCOSA may specify the format of calculation presentation for consistency and to assist with compliance functions. For example, this may require calculations to be presented in a format consistent with 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 ESCOSA include those by the NSW Energy Savings Scheme Administrator or the Victorian Energy Upgrades Regulator as a Measurement and Verification Professional.

This specification requires that measurement periods for the Baseline and Operating Energy Model cover at least one full operating cycle from maximum energy use to minimum. Note that care should be taken to capture an appropriate Effective Range of the Independent Variables for the models to avoid exclusion of Normalised Energy Savings (see 3(5)).

MINING ACT 1971

Notice under Section 15AC(12) of the Mining Act 1971

NOTICE is hereby given pursuant to the provision of Section 15AC (12) of the *Mining Act 1971*, to specify the manner and form an application for the discharge of a mortgage must be made by the Mining Registrar.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 15AC(12) of the *Mining Act 1971* do hereby:

DETERMINE that an application for the discharge of a mortgage must, in addition to the requirements of section 15AC of the *Mining Act 1971* and any determinations made under regulation 88 of the *Mining Regulations 2020*, be in the following manner and form:

1. DECLARE the registered instrument number of the mortgage to be discharge from the Mining Register
2. DECLARE the tenement or tenements the discharge of the mortgage is to be registered in respect to;
3. DECLARE whether the party seeking to discharge the mortgage is the mortgagee, and
 - a. where the mortgagee is not the party seeking to discharge the mortgage—DECLARE whether the mortgagee consents to the discharge of the mortgage and provide evidence of that consent; or
 - b. where the mortgagee is not the party seeking to discharge the mortgage provide a court order of a court or tribunal constituted by law.

In accordance with Section 15AC(12) of the *Mining Act 1971*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

Notice under Section 15AC(3) of the Mining Act 1971

NOTICE is hereby given pursuant to the provision of Section 15AC(3) of the *Mining Act 1971*, to specify the manner and form an application for the registration of a mortgage must be made by the Mining Registrar.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 15AC(3) of the *Mining Act 1971* do hereby:

DETERMINE that an application for the registration of a mortgage must, in addition to the requirements of section 15AC of the *Mining Act 1971* and any determinations made under regulation 88 of the *Mining Regulations 2020*, be in the following manner and form:

1. DECLARE the tenement or tenements the mortgage is to be registered in respect to;
2. DECLARE whether the mortgagee is the tenement holder, and
 - a. where the mortgagee is not the tenement holder—DECLARE whether the tenement holder consents to the registration of the mortgage and provide evidence of that consent.

In accordance with Section 15AC(3) of the *Mining Act 1971*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

Notice under Section 15AG(5) of the Mining Act 1971

NOTICE is hereby given pursuant to the provision of section 15AG(5) of the *Mining Act 1971*, to specify the manner and form of a notice to appoint or cease the appointment of a person other than the tenement holder to carry out authorised operations under section 15AG(3) of the *Mining Act 1971*.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 15AG(5) of the *Mining Act 1971* do hereby:

DETERMINE that a notice to appoint or cease the appointment of a person other than the tenement holder to carry out authorised operations under section 15AG(3) of the *Mining Act 1971* must be in the following manner and form:

1. state the full name(s) and address(es), as well as the phone numbers and email addresses (if known) of the person other than the tenement holder who will carry out operations on the tenement (“operator”);
2. state the full name(s) and business address(es) of the tenement holder(s);
3. state the tenement number(s);
4. state the date of commencement or date of cessation of appointment of the operator; and
5. provide a brief description of the operations the operator is appointed to undertake on the tenement(s).

In accordance with section 15AG(5) of the *Mining Act 1971* this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

Notice under Section 56E(2) of the Mining Act 1971

NOTICE is hereby given in accordance with section 56E(2) of the *Mining Act 1971* to declare the manner and form for which an area of a mineral claim must be identified, delineated or defined.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 56E(2) of the *Mining Act 1971* do hereby:

DECLARE that in order to validly establish a mineral claim, the mineral claim area must:

1. As far as practicable, approximate a rectangle, the length of the longer side of which must not exceed five times the length of the shorter side. The length of the longest side of the mineral claim must not exceed two kilometres.
2. If it is not practicable to comply with this determination because of the position of adjoining boundaries of other areas or natural features, an irregularly shaped piece of land may be constituted as a mineral claim.

DECLARE that the area of a mineral claim can be identified either physically or electronically (alternate manner).

DECLARE that where a mineral claim is identified physically, the area must:

3. Be identified by posts that are securely placed in the ground at each corner or turning point of the relevant area. Each post must:
 - i. be devoid of marks or writing that refers to a previous pegging
 - ii. have a cross-sectional dimension equal to or exceeding seven centimetres
 - iii. project at least 75 centimetres above the ground
 - iv. clearly show the date of pegging and the name and address of the person establishing the mineral claim (either by direct markings on the post or by the secure weatherproof attachment of a notice to the post), as near to the top of the post as practicable
 - v. if pegging out more than one claim on the same parcel of land on the same day, clearly show the number of the mineral claim, as pegged out on that land on that day, using consecutive numbers starting with the number one
 - vi. show the direction of the boundaries of the claim with substantial indicator markers fixed to each post or if not practicable by trenches or piles of stones at the base of each post.
4. In accordance with section 21(7)(f) of the above Act, the Mining Registrar requires a photo of each post showing the items in section 3 (above) to be provided to the Mining Registrar, along with the coordinates of each post, with the application to register the mineral claim.

DECLARE that where a mineral claim is identified electronically, the area must be identified by a plan prepared by a licensed surveyor and furnished to the Mining Registrar.

DECLARE that the Geocentric Datum of Australia 2020 (GDA2020) must be used to identify (either physically or electronically) the exact boundary of the mineral claim. The GDA2020 has the same meaning as in the National Measurement (Recognized-Value Standard of Measurement of Position) Determination 2017 made under section 8A of the *National Measurement Act 1960* of the Commonwealth.

In accordance with Section 56E(2) of the *Mining Act 1971*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar
as delegate for the Minister for Energy and Mining

MINING ACT 1971
MINING REGULATIONS 2020*Notice under Section 56E(2) of the Mining Act 1971**Notice under Regulations 30(1)(G), 31(1)(F) And 37(D) of the Mining Regulations 2020*

NOTICE is hereby given in accordance with section 56E(2) of the *Mining Act 1971* to declare the manner and form for which an area of a mining lease, retention lease or miscellaneous purposes licence must be identified, delineated or defined.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 56E(2) of the *Mining Act 1971* do hereby:

DECLARE that in order to validly apply for a mining lease, retention lease or miscellaneous purposes licence, the mining lease, retention lease or miscellaneous purposes licence area must:

1. As far as practicable, approximate a rectangle; and
2. If it is not practicable to comply with (1) because of the position of adjoining boundaries of other areas or natural features, an irregularly shaped area may be constituted as a mining lease, retention lease or miscellaneous purposes licence.

DECLARE that the area of a mining lease, retention lease or miscellaneous purposes licence can be identified either physically or electronically (alternate manner).

DECLARE that where a mining lease, retention lease or miscellaneous purposes licence is identified physically, the area must:

3. Be identified by posts that are securely placed in the ground at each corner or turning point of the relevant area. Each post must:
 - i. be devoid of marks or writing that refers to a previous pegging
 - ii. have a cross-sectional dimension equal to or exceeding seven centimetres
 - iii. project at least 75 centimetres above the ground; and
 - iv. show the direction of the boundaries of the mining lease, retention lease or miscellaneous purposes licence with substantial indicator markers fixed to each post or if not practicable by trenches or piles of stones at the base of each post.

DECLARE that where a mining lease, retention lease or miscellaneous purposes licence is identified electronically, the area must be identified by a plan prepared by a licensed surveyor.

DECLARE that the Geocentric Datum of Australia 2020 (GDA2020) must be used to identify (either physically or electronically) the exact boundary of the mining lease, retention lease or miscellaneous purposes licence. The GDA2020 has the same meaning as in the National Measurement (Recognized-Value Standard of Measurement of Position) Determination 2017 made under section 8A of the *National Measurement Act 1960* of the Commonwealth.

NOTICE is hereby given in accordance with regulations 30(1)(g), 31(1)(f) and 37(d) of the *Mining Regulations 2020* to declare such other information that must be provided with an application for a mining lease, retention lease or miscellaneous purpose licence.

TAKE notice that I, Junesse Martin, as delegate for the Minister for Energy and Mining, pursuant to regulations 30(1)(g), 31(1)(f) and 37(d) of the *Mining Regulations 2020* do hereby:

DECLARE that a photo of each post showing the items in section 3 (above) must be provided, along with the coordinates of each post, with the application to apply for the mining lease, retention lease or miscellaneous purposes licence.

In accordance with section 56E(2) of the *Mining Act 1971* and regulations 30(1)(g), 31(1)(f) and 37(d) of the *Mining Regulations 2020*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

Notice under Section 56E(2) of the Mining Act 1971

NOTICE is hereby given in accordance with section 56E(2) of the *Mining Act 1971* to declare the manner and form for which an area of an exploration licence application or an area for an application for retention status in relation to an exploration licence must be identified, delineated or defined.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 56E(2) of the *Mining Act 1971* do hereby:

DECLARE that in order to validly apply for an exploration licence or for retention status in relation to an exploration licence the area must;

1. as far as practicable, be in whole minutes of latitude and longitude; and
2. if it is not practicable to comply with (1) because of the position of adjoining boundaries of other areas or natural features, an irregularly shaped area may be constituted as an exploration licence application or an application for retention status in relation to an exploration licence.

DECLARE that the Australian Geodetic Datum of Australia 1966 (AGD66) must be used to identify the exact boundary of an exploration licence application or an application for retention status in relation to an exploration licence. The AGD66 was proclaimed in the *Australian Commonwealth Gazette* No. 84 on 6 October 1966.

In accordance with Section 56E(2) of the *Mining Act 1971*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

SECTION 15AE(11)

Manner and Form of the Application to Notify the Mining Registrar the Registration of a Caveat has Lapsed

NOTICE is hereby given pursuant to the provision of Section 15AE(11) of the *Mining Act 1971*, to specify the manner and form an application to notify the Mining Registrar the registration of a caveat has lapsed must be made by the Mining Registrar.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 15AE(11) of the *Mining Act 1971* do hereby:

DETERMINE that an application to notify the Mining Registrar the registration of a caveat has lapsed must, in addition to the requirements of section 15AE of the *Mining Act 1971* and any determinations made under regulation 88 of the *Mining Regulations 2020*, be in the following manner and form:

1. DECLARE the registered instrument number of the caveat which has lapsed in the Mining Register.
2. DECLARE the tenement or tenements the lapse of the caveat is to be registered in respect to.
3. DECLARE if the caveat expired and if so, specify:
 - a. the date it expired, or
 - b. the registered instrument number of the transfer or mortgage of a mineral tenement related to the caveat.
4. DECLARE whether the party seeking to notify the Mining Registrar of the lapse of the caveat is the caveator; or
 - a. if the lapse of the caveat is provided by a court order of the Warden's Court a copy of that order.

In accordance with Section 15AE(11) of the *Mining Act 1971*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

Notice under Section 15AG(5) of the Mining Act 1971

NOTICE is hereby given pursuant to the provision of Section 15AG(5) of the *Mining Act 1971*, to specify the manner and form of an application for the registration of a registerable dealing under section 15AG of the *Mining Act 1971*.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 15AG(5) of the *Mining Act 1971* do hereby:

DETERMINE that an application for the registration of a registerable dealing must, be in the following manner and form:

1. DECLARE the tenement or tenements or interest in the tenement or tenements the registerable dealing is to be registered in respect to; and
 1. state the full name(s) (including Australian Business Number (ABN) or Australian Company Number (ACN)), business address(es) and email address(es) of the tenement holder(s);
 2. state the full name(s) (including ACN or ABN), business address(es) and email address(es) of the party/parties proposing to register to registerable dealing in the mineral tenement(s); and
 3. summarise the interest(s) in the mineral tenement(s) as the basis the registerable dealing relates to.

In accordance with section 15AG (2) (b) of the *Mining Act 1971* a registerable dealing does not include:

1. A dealing for the charge for the repayment of money, discharge of liability, or to secure the performance of an obligation.

In accordance with Section 15AG(5) of the *Mining Act 1971*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

SECTION 21(6)

Manner and Form of the Application for the Registration of Mineral Claim

NOTICE is hereby given pursuant to the provision of section 21(6) of the *Mining Act 1971*, to specify the manner and form an application for the registration of a mineral claim.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 21(6) of the *Mining Act 1971* do hereby:

DETERMINE that an application for the registration of a mineral claim must, in addition to the requirements of section 21 of the *Mining Act 1971* and any determinations made under regulation 88 of the *Mining Regulations 2020*, be in the following manner and form:

1. DECLARE the applicant(s) name(s) and the percentage ownership of each applicant in the application
2. if the applicant is an individual—DECLARE the applicant(s):
 1. postal address(es),
 2. email address(es),
 3. website (if applicable),
 4. telephone number(s).
3. if the applicant is a company—DECLARE the applicant(s):
 1. Australian Business Number (ABN) (if applicable),
 2. Australian Company Number (ACN) (if applicable),
 3. registered business address(es),
 4. email address(es),
 5. telephone number(s).
4. DECLARE a contact person for each applicant, including:
 1. Name(s),
 2. Position Title(s),
 3. Email address(es),
 4. Telephone number(s).
5. DECLARE consent to receive electronic correspondence (or otherwise) in relation to the application;
6. DECLARE the primary mineral type relevant to the application;
7. DECLARE the date the mineral claim was identified in accordance with section 56E of the *Mining Act 1971*;
8. DECLARE if the mineral claim was physically pegged or identified in some other manner
9. if the mineral claim was physically pegged—DECLARE who
 1. pegged the mineral claim(s), and
 2. what equipment was used to collect the coordinates of each post.
10. DECLARE who prepared the plan accompanying the application if the mineral claims(s) were pegged in some other manner.

In accordance with Section 21(6) of the *Mining Act 1971*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

SECTION 21(9)

Manner and Form of the Documents to be Provided with an Application for the Registration of Mineral Claim

NOTICE is hereby given pursuant to the provision of Section 21(9) of the *Mining Act 1971*, to specify the manner and form of the documents to be provided with an application for the registration of a mineral claim.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 21(9) of the *Mining Act 1971* do hereby:

DETERMINE that the documents to be provided with an application for the registration of a mineral claim must, in addition to the requirements of section 21 of the *Mining Act 1971* and any determinations made under regulation 88 of the *Mining Regulations 2020*, be in the following manner and form:

1. DECLARE the plan accompanying the application to register a mineral claim must include:

1. clearly defined and labelled land ownership boundaries, and
2. clearly defined and labelled road details, and
3. clearly define the boundary of the mineral claim(s), and
4. if pegging more than one mineral claim show the number of each mineral claim using consecutive numbers starting with the number one (as identified in accordance with the determination published under section 56E of the *Mining Act 1971*), and
5. the coordinates of each turning point of the boundary of the mineral claim(s), and
6. a north point.

In accordance with Section 21(9) of the *Mining Act 1971*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

SECTION 15AC(9)

Procedure to Discharge of a Mortgage

NOTICE is hereby given pursuant to the provision of section 15AC(9) of the *Mining Act 1971*, to specify the procedure for the discharge of a mortgage.

TAKE notice that I, Junesse Martin, Mining Registrar, pursuant to section 15AC(9) of the *Mining Act 1971* do hereby:

DETERMINE that an application for the discharge of a mortgage must, in addition to the requirements of section 15AC of the *Mining Act 1971* and any determinations made under regulation 88 of the *Mining Regulations 2020*, must furnish an application to discharge a mortgage to the Mining Registrar in accordance with any determination made under section 15AC(12) of the *Mining Act 1971*.

In accordance with Section 15AC(9) of the *Mining Act 1971*, this notice will have effect from 1 January 2021.

Dated: 14 December 2020

JUNESSE MARTIN
Mining Registrar

MINING ACT 1971

PART 10A

Terms of Reference for Extractive Mineral Quarry PEPRS

A Program for Environment Protection and Rehabilitation (PEPR) under Part 10A of the *Mining Act 1971* for the recovery of extractive minerals must:

- comply with sections 70B and 70C of the *Mining Act 1971*, regulations 63, 64 and 66 of the *Mining Regulations 2020* and any determinations set out in this Terms of Reference; and
- be accompanied by a declaration of accuracy that complies with regulation 84 of the *Mining Regulations 2020*; and
- be accompanied by the relevant application fee.

In accordance with Part 10A of the *Mining Act* this notice will have effect from 1 January 2021.

FORM OF THE PEPR

A PEPR for a ML and/or MPL for extractive minerals must in accordance with section 70B(4a) of the *Mining Act 1971* be submitted to the Minister for approval in the following form, unless otherwise specified by the Director of Mines or an authorised officer:

- an electronic version of the PEPR must be submitted online through the relevant government website, or if approved by the Director of Mines or an authorised officer, submitted via email, post or courier and should be marked 'Attention: Mining Assessments';
- each page, plan or other separate sheet must include the tenement number(s), date of the PEPR preparation and sequential page numbering; and
- the electronic version must be submitted in one single Acrobat PDF file or if requested by the Director of Mines or an authorised officer, Microsoft Word compatible files must be submitted.

A reviewed PEPR submitted to the Minister for approval under section 70C of the *Mining Act 1971*, must in accordance with regulation 63(1)(e) include a description or summary of all content changes made to the submitted PEPR.

PEPR

A PEPR for an EML and/or MPL must comply sections 70B and 70C of the *Mining Act 1971* and regulations 63, 64 and 66 of the *Mining Regulations 2020*, and must comply with the following determinations of this Terms of Reference as set out below:

1. DESCRIPTION OF THE ENVIRONMENT

In setting out a statement of criteria in accordance with section 70B(2)(b) of the *Mining Act 1971* and setting out strategies and criteria in accordance with regulation 63(b) and (c) of the *Mining Regulations 2020*, the Minister determines in accordance with regulation 63(1)(e) of the *Mining Regulations 2020* that a PEPR must include any new baseline environmental data relevant to the control strategies or criteria set out in clause 4, since the previous description of the environment or criteria was provided (in a proposal, approved PEPR or change to operations proposal).

Where changes to the environment are identified, a PEPR must provide an updated description of the environment to describe the changes.

2. DESCRIPTION OF MINING OPERATIONS

In specifying the authorised operations that are proposed in accordance with section 70B(2)(a) of the *Mining Act 1971*, the Minister determines in accordance with regulation 63(3)(e) of the *Mining Regulations 2020* that a PEPR must include a description of the proposed operations as set out in this Terms of Reference. Each of the elements listed in clauses 2.1–2.8 must be described only to the extent that they apply to the quarrying operation.

2.1 General description and maps/plans of operations

A summary description and maps of all elements of the quarrying operation must be included.

2.2 Resource and Products**2.2.1 Resource**

Provide a statement of the extractive minerals proposed to be extracted, recovered and sold.

Provide a statement of the current estimated resource or reserve (or both), including:

- details of the basis of this estimate; and
- a declaration that the resource or reserve (or both) has been appropriately identified and estimated.

2.2.2 Production Rate and Products

State:

- the end use and products for all extractive minerals proposed to be sold.

Provide estimates of the:

- annual production rate (product and overburden);
- life of the quarry; and
- material movement over life of quarry (product and overburden).

2.3 Quarrying Activities**2.3.1 Type or types of quarry operation to be carried out**

Provide:

- a summary and map (as per 7.1.1.1) of the site layout;
- a description of the proposed quarrying method; and
- dimensions and depth of proposed pit(s).

2.3.2 Sequence of quarrying and progressive rehabilitation

Describe and show on a map (as per 7.1.1.2):

- staging and description of each progressive quarrying stage;
- milestones that will instigate progressive rehabilitation; and
- staging and description of each progressive rehabilitation stage including:
 - use of overburden;
 - battering of mining faces and other earthworks;
 - topsoil management; and
 - revegetation.

2.3.3 Stockpiles**2.3.3.1 Topsoil and Subsoil Stockpiles**

Describe and show on a map (as per 7.1.1.1):

- location, size, shape and height of product of topsoil/subsoil stockpiles.

2.3.3.2 Product Stockpile

Describe and show on a map (as per 7.1.1.1):

- location and height of product of product stockpiles.

2.3.4 Use of explosives

If explosives are used, describe:

- estimated frequency of blasting; and
- whether explosives will be stored onsite.

2.3.5 Modes and hours of operation

State if the quarry operation will be operated on a continuous (24 hour, 7 days a week), regular periodical or campaign basis.

If the quarry operation is to be operated on a regular periodical basis or campaign basis, specify:

- period(s) (daily, weekly and public holidays) to be worked
- start and finish hours the site is to be worked per period.

2.4 Crushing, processing and product transport**2.4.1 Fixed plant**

- Describe the specifications of fixed plant including but not limited to: area, size, and location of fixed plant and associated structures including as applicable concrete batching plant, wheel wash facilities, silos, fuel tanks, water tanks, chemical storage proposed to be used for processing the extractive minerals on site;
- a description of rock or sand processing; in particular crushing, washing, drying, screening and separation; and
- the type(s) of processing/value adding used on the raw material and conducted onsite including but not limited to concrete, bitumen, separation and drying.

2.4.2 Hours of operation

Describe the hours of crushing, processing and product transport activities.

2.4.3 Processing wastes

If processing wastes are to be generated provide a description of:

- management of any proposed chemical additives contained within waste to prevent environmental harm;
- management and disposal of processing wastes;
- construction and geotechnical design of proposed storage facilities; and
- construction details/design of evaporation ponds and proposed use of waste material.

2.4.4 Industrial and domestic wastes

A description of management of any of the following industrial and domestic wastes must be provided:

- putrescible waste;
- oil;
- other onsite waste disposal or recycling; e.g. workshop waste, tyres, drums, oil filters;
- offsite disposal; and
- a description of the type, area and layout of sewage systems installed at the site.

2.5 Supporting surface infrastructure**2.5.1 Access and Roads**

Describe:

- access route to the site and show on a map (as per 7.1.1.3);
- indicate if any new roads are to be constructed, or if existing roads or intersections (public and private) are to be upgraded; and
- transport system(s) used to and from the site and the estimated number of vehicle movements per day.

2.5.2 Accommodation and offices

- Describe onsite personnel accommodation and offices, including but not limited to: number, area, size, type of construction and location of accommodation, office, meals or laboratory buildings, caravans or camp, and associated structures (e.g. car parks, water tanks, etc.) to be used on site; and
- if temporary or permanent.

2.5.3 Public services and utilities used by the operation

Describe:

- sources of services or utilities that are, or are to be supplied to the proposed site, such as power, water, telecommunications etc.;
- if new connections to services and utilities are required, the proposed routes for connection; and
- the effects to any existing services or utilities that have been or may be affected by the mining operations.

2.5.4 Visual screening

Describe the type of screening, including existing or proposed vegetation (i.e. species and density of plantings) and show on a map (as per 7.1.1.1 or 7.1.1.2)

2.5.5 Fuel and chemical storage

For all fuels and chemicals stored on site show the proposed location of storage on a map (as per 7.1.1.1) and provide detail on:

- types of bulk chemicals and the volumes of each; and
- proposed bunding and containment for all chemical and fuel storage vessels.

2.5.6 Site security

Describe infrastructure and measures that will be adopted to prevent unauthorised access by the public, including, but not limited to:

- fencing; and
- signage.

2.5.7 Erosion, Sediment and Silt Control

Describe and show on a map (as per 7.1.1.1):

- location and design of sediment management structures;
- management and disposal of silt;
- strategies to control runoff on disturbed areas and rehabilitated areas; and
- storage, diversion and release of clean water.

2.6 Vegetation clearance

If clearance of native vegetation is to occur, a Native Vegetation Management Plan (NVMP) prepared by an accredited consultant must be included with the PEPR.

The NVMP must:

- describe the vegetation type to be cleared and include a map (as per 7.1.1.2) showing the proposed clearance area; and
- state the quantum of significant environmental benefit (SEB) to be gained in exchange for the clearance and describe how the SEB will be provided.

Where native vegetation clearance is planned and in the case where an on ground offset by the operator is to be used to demonstrate the Significant Environmental Benefit (SEB), the statement of criteria must demonstrate the successful implementation of the on ground offset through the native vegetation management plan. Site Water Management

2.7 Site Water Management

Provide an estimate of the quantity of water to be used and the source of that water. If processing water is to be used, provide a water balance including:

- approximate water volumes required for processing; and
- a summary of all water inputs and outputs.

Provide a description of all process water ponds, including:

- size, capacity, layout and location of ponds;
- design and construction methods; and
- minimum freeboard to be maintained.

2.8 Description of Quarry Site at Completion

Provide a map (as per 7.1.1.4), cross-section (as per 7.2.1.2) and a description of the quarry site as it will be at completion after all rehabilitation and closure activities have been completed, including:

- potential land use options;
- landforms;
- proposed vegetation covers (including native vegetation that will not be disturbed due to proposed quarrying operations);
- any quarrying infrastructure that may remain on site and become the responsibility of the landowner;
- location, description and management of waste disposal areas;
- location of reshaped and rehabilitated areas, proposed surface contours and revegetation; and
- location of surface water infrastructure including ponds and diversions.

Provide a description of the proposed mechanism for transferring responsibility for any potential residual liability (i.e. ongoing maintenance or monitoring) subsequent to surrender of the tenement.

3. CONSULTATION

In setting out the result of the consultation undertaken in connection with the proposed operations in accordance with regulation 64 of the *Mining Regulations 2020*, the Minister determines in accordance with regulation 63(1)(e) of the *Mining Regulations 2020* that a PEPR must include:

A description of:

- the process undertaken for identifying stakeholders with an interest in, or stakeholders likely to be directly affected by the quarry operation;
- the process undertaken for the delivery of information to, gathering of feedback from, and responding to those identified stakeholders;
- if any individual or group of similar affected persons were not able to be consulted, the steps taken to consult with them.

The results of the consultation undertaken with those identified stakeholders, including:

- the persons consulted;
- any concerns / issues raised; and
- the response and steps (if any) taken or proposed to address those concerns.

4. ENVIRONMENTAL OUTCOMES, STRATEGIES, CRITERIA AND MONITORING

4.1 Environmental Outcomes

A PEPR must set out environmental outcomes (including completion outcomes) in accordance with section 70B(2)(b)(i) of the *Mining Act 1971*. For each environmental outcome, a PEPR must include the information described in clause 4.2 and 4.3.

4.2 Control and Management Strategies

In setting out the control and management strategies adopted to demonstrate that the environmental outcomes can be and will continue to be achieved in accordance with regulation 63(1)(b) of the *Mining Regulations 2020*, the Minister determines in accordance with regulation 63(3)(e) of the *Mining Regulations 2020* that a PEPR must:

- demonstrate that the control and management strategies are commensurate with the impacts, achieve compliance with other applicable statutory requirements and promote progressive rehabilitation;
- describe any significant degree of uncertainty in accordance with regulation 63(3)(c) pertaining to the likely effectiveness of control and management strategies, including (but not limited to) lack of site specific information, limitations on modelling and quality of data;
- describe any assumptions connected with the identified uncertainty; and
- so far as is relevant, identify the sensitivity to change of any assumption that has been made in accordance with regulation 63(3)(d) and assess the likelihood of an outcome not being achieved if an assumption is later found to be incorrect.

4.3 Measurement Criteria

In preparing a statement of the criteria to be adopted to measure each of the environmental outcomes in accordance with sections section 70B(2)(c) of the *Mining Act 1971* and regulation 63(1)(c) of the *Mining Regulations 2020*, the Minister determines in accordance with regulation 63(3)(e) of the *Mining Regulations 2020* the following:

Set out a statement of criteria for each environmental outcome (including quarry completion outcomes).

The criteria must comply with the five elements of regulation 63(1)(c) and must include details about:

- responsibility (who will measure);
- record keeping; and
- frequency of reporting to management and any external parties.

Where groundwater modelling is to be relied upon to demonstrate achievement of groundwater completion outcomes, the statement of criteria must include a process for validation of predictive modelling, including a description of the model and assumptions used.

Where native vegetation clearance is planned and in the case where an on ground offset by the operator is to be used to demonstrate the Significant Environmental Benefit (SEB), the statement of criteria must demonstrate the successful implementation of the on ground offset through the native vegetation management plan.

5. OPERATOR CAPABILITY

In preparing information about the ability of the tenement holder (and any other person who may be acting on behalf of the tenement holder) in accordance with section 70B(2)(d) of the *Mining Act 1971*, the Minister determines in accordance with regulation 63(3)(e) of the *Mining Regulations 2020* that this information must be accompanied by relevant evidence demonstrating that the tenement holder (and any other person who may be acting on behalf of the tenement holder as an operator) has appropriate experience, processes and procedures in place to be able to achieve the environmental outcomes.

6. LEASE/LICENCE

Where the lease or licence includes specific conditions or requirements that are not environmental outcomes, in accordance with regulation 63(1)(e) a PEPR must include a section that demonstrates where the respective conditions or requirements have been addressed in the PEPR (if relevant) or demonstrates how otherwise they have or will be complied with.

7. MAPS AND CROSS-SECTIONS

In preparing a PEPR in accordance with section 70B(2) of the *Mining Act 1971* and regulation 63 of the *Mining Regulations 2020*, the Minister determines in accordance with regulation 63(3)(e) of the *Mining Regulations 2020* that all maps, plans and cross sections must comply with the following requirements relating to the amount of detail or information to be provided:

- state and show the relevant datum (Australian Height Datum (AHD) is preferred);
- metric units;
- title, north arrow, scale bar, text and legend;
- date prepared and author;
- be of appropriate resolution and scale for represented information; and
- be legible in both the hardcopy and electronic versions of the submission.

All cross-sections must conform to the following standards:

- state and show the relevant datum (Australian Height Datum (AHD) is preferred);
- metric units;
- title, scale bar, text and legend;
- date prepared and author;
- be of appropriate resolution and scale for represented information; and
- be legible in both the hardcopy and electronic versions of the submission.

7.1 List of Maps**7.1.1 Maps required for Description of the Quarrying Operations (as per clause 2)**

7.1.1.1 *Site Layout Map showing all components of the quarry operation including (but not limited to):*

- Tenement boundaries;
- location of sediment management infrastructure;
- if relevant location of process water dams;
- location of haul roads;
- if relevant location of fixed plant;
- location of mobile plant for stage 1 of mining;
- location and extent of topsoil/subsoil and product stockpiles.

7.1.1.2 *Sequence of Quarrying and Progressive Rehabilitation Map showing:*

- Tenement boundaries;
- staging of each progressive mining stage;
- proposed native vegetation clearance; and
- staging of each progressive rehabilitation stage.

7.1.1.3 *Access Route Map showing:*

- access route for heavy vehicles;
- exit route for heavy vehicles; and
- new roads to be constructed if relevant.

7.1.1.4 *Mine Completion Map showing:*

- final landforms (including rehabilitated and non-disturbed areas); and
- proposed topographical contours of the entire site (including rehabilitated and non-disturbed areas).

7.2 Summary of Cross-Sections

Following is a summary of all cross-sections required in the PEPR:

7.2.1 Cross-Sections required for Description of Quarrying Operations (as per clause 2)

7.2.1.1 *Quarry Operation Cross-Section(s) showing:*

- Proposed pit depth; and
- Proposed pit dimensions (length and width).

7.2.1.2 *Quarry Completion Cross Section(s) showing:*

- Pre quarrying natural surface; and
- Proposed final rehabilitated surface.

Dated: 21 December 2020

PAUL DE IONNO
A/Director, Mining Regulation
as delegate for the Minister for Energy and Mining

All instruments appearing in this gazette are to be considered official, and obeyed as such
