# 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 m<sup>2</sup> 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 m<sup>2</sup>.

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
  - 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
  - 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).

### 6. NORMALISED REPS GIGAJOULES

The normalised REPS gigajoules per appliance from undertaking this this activity is as per the following six tables.

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

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

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

### Normalised REPS Gigajoules per activity

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

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

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

|                   |                   | 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 |         |
| NICC              | 11000/111         | AEER or       |             |            | 4.5 to <   | 4.75 to <  | 5 to <     | 5.25 to <  | 5.5 to <   | 5.75 to <  | 6 to <     | 6.25 to <  | 6.5 to <   | 6.75 to <  |             | 7.25 or |
| NCC 6             | HC2B(ii)          | TCSPF>        | 4 to < 4.25 |            | 4.75       | 5          | 5.25       |            |            | 6          | 6.25       | 6.5        | 6.75       | 7          | 7 to < 7.25 | more    |
| Heating Stars Old | Heating Stars New | ACOP or HSPF  |             |            | REPS Cred  | lit (GJ)   |            |            |            |            |            |            |            |            |             |         |
| 3.5 to < 4        | 2.5 to < 3        | 4 to < 4.25   | 412.0       | 413.7      | 415.1      | 416.4      | 417.6      | 418.7      | 419.7      | 420.6      | 421.4      | 422.1      | 422.8      | 423.5      | 424.1       | 424.6   |
| 4 to < 4.5        |                   | 4.25 to < 4.5 | 419.5       | 421.1      | 422.6      | 423.9      | 425.1      | 426.1      | 427.1      | 428.0      | 428.8      | 429.6      | 430.3      | 430.9      | 431.5       | 432.1   |
| 4.5 to < 5        | 3 to < 3.5        | 4.5 to < 4.75 | 426.1       | 427.7      | 429.2      | 430.5      | 431.7      | 432.8      | 433.7      | 434.6      | 435.5      | 436.2      | 436.9      | 437.6      | 438.2       | 438.7   |
| 5 to < 5.5        |                   | 4.75 to < 5   | 432.1       | 433.7      | 435.2      | 436.5      | 437.7      | 438.7      | 439.7      | 440.6      | 441.4      | 442.2      | 442.9      | 443.5      | 444.1       | 444.7   |
| 5.5 to < 6        | 3.5 to < 4        | 5 to < 5.25   | 437.4       | 439.1      | 440.5      | 441.8      | 443.0      | 444.1      | 445.1      | 446.0      | 446.8      | 447.5      | 448.2      | 448.9      | 449.5       | 450.1   |
| 6 to < 6.5        |                   | 5.25 to < 5.5 | 442.3       | 444.0      | 445.4      | 446.7      | 447.9      | 449.0      | 450.0      | 450.8      | 451.7      | 452.4      | 453.1      | 453.8      | 454.4       | 454.9   |
| 6.5 to < 7        | 4 to < 4.5        | 5.5 to < 5.75 | 446.8       | 448.4      | 449.9      | 451.2      | 452.3      | 453.4      | 454.4      | 455.3      | 456.1      | 456.9      | 457.6      | 458.2      | 458.8       | 459.4   |
| 7 to < 7.5        |                   | 5.75 to < 6   | 450.8       | 452.5      | 453.9      | 455.2      | 456.4      | 457.5      | 458.5      | 459.4      | 460.2      | 460.9      | 461.6      | 462.3      | 462.9       | 463.4   |
| 7.5 to < 8        | 4.5 to < 5        | 6 to < 6.25   | 454.6       | 456.2      | 457.7      | 459.0      | 460.1      | 461.2      | 462.2      | 463.1      | 463.9      | 464.7      | 465.4      | 466.0      | 466.6       | 467.2   |
| 8 to < 8.5        |                   | 6.25 to < 6.5 | 458.0       | 459.6      | 461.1      | 462.4      | 463.6      | 464.7      | 465.6      | 466.5      | 467.3      | 468.1      | 468.8      | 469.4      | 470.0       | 470.6   |
| 8.5 to < 9        | 5 to < 5.5        | 6.5 to < 6.75 | 461.2       | 462.8      | 464.3      | 465.6      | 466.8      | 467.8      | 468.8      | 469.7      | 470.5      | 471.3      | 472.0      | 472.6      | 473.2       | 473.8   |
| 9 to < 9.5        |                   | 6.75 to < 7   | 464.1       | 465.8      | 467.2      | 468.5      | 469.7      | 470.8      | 471.8      | 472.7      | 473.5      | 474.2      | 474.9      | 475.6      | 476.2       | 476.7   |
| 9.5 to < 10       | 5.5 or More       | 7 to < 7.25   | 466.9       | 468.5      | 470.0      | 471.3      | 472.5      | 473.5      | 474.5      | 475.4      | 476.2      | 477.0      | 477.7      | 478.3      | 478.9       | 479.5   |
| > 10              |                   | 7.25 or more  | 469.4       | 471.1      | 472.5      | 473.8      | 475.0      | 476.1      | 477.1      | 478.0      | 478.8      | 479.5      | 480.2      | 480.9      | 481.5       | 482.0   |

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

|                   |                   | Cooling Stars<br>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<br>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                | 2.5 (0 < 5  |            | 4.5 to <   | 4.75 to <  | 5 to <     | 5.25 to <  | 5.5 to <   | 5.75 to <  | 6 to <     | 6.25 to <  | 6.5 to <   | 6.75 to <  | 3.3 OF WIGHT | 7.25 or |
| NCC 6             | HC2B(iii)         |                        | 4 to < 4.25 |            |            |            | 5.25       | 5.5        | 5.75       | 6          | 6.25       | 6.5        | 6.75       | 7          | 7 to < 7.25  |         |
| Heating Stars Old | Heating Stars New | ACOP or HSPF           |             |            | REPS Cred  | lit (GJ)   |            |            |            |            |            |            |            |            |              |         |
| 3.5 to < 4        | 2.5 to < 3        | 4 to < 4.25            | 25.1        | 26.7       | 28.2       | 29.5       | 30.7       | 31.7       | 32.7       | 33.6       | 34.4       | 35.2       | 35.9       | 36.5       | 37.1         | 37.7    |
| 4 to < 4.5        |                   | 4.25 to < 4.5          | 32.5        | 34.2       | 35.6       | 36.9       | 38.1       | 39.2       | 40.2       | 41.1       | 41.9       | 42.6       | 43.3       | 44.0       | 44.6         | 45.1    |
| 4.5 to < 5        | 3 to < 3.5        | 4.5 to < 4.75          | 39.2        | 40.8       | 42.3       | 43.6       | 44.8       | 45.8       | 46.8       | 47.7       | 48.5       | 49.3       | 50.0       | 50.6       | 51.2         | 51.8    |
| 5 to < 5.5        |                   | 4.75 to < 5            | 45.1        | 46.8       | 48.2       | 49.5       | 50.7       | 51.8       | 52.8       | 53.7       | 54.5       | 55.2       | 55.9       | 56.6       | 57.2         | 57.7    |
| 5.5 to < 6        | 3.5 to < 4        | 5 to < 5.25            | 50.5        | 52.1       | 53.6       | 54.9       | 56.1       | 57.2       | 58.1       | 59.0       | 59.8       | 60.6       | 61.3       | 61.9       | 62.6         | 63.1    |
| 6 to < 6.5        |                   | 5.25 to < 5.5          | 55.4        | 57.0       | 58.5       | 59.8       | 61.0       | 62.0       | 63.0       | 63.9       | 64.7       | 65.5       | 66.2       | 66.8       | 67.4         | 68.0    |
| 6.5 to < 7        | 4 to < 4.5        | 5.5 to < 5.75          | 59.8        | 61.5       | 62.9       | 64.2       | 65.4       | 66.5       | 67.5       | 68.3       | 69.2       | 69.9       | 70.6       | 71.3       | 71.9         | 72.4    |
| 7 to < 7.5        |                   | 5.75 to < 6            | 63.9        | 65.5       | 67.0       | 68.3       | 69.5       | 70.5       | 71.5       | 72.4       | 73.2       | 74.0       | 74.7       | 75.3       | 75.9         | 76.5    |
| 7.5 to < 8        | 4.5 to < 5        | 6 to < 6.25            | 67.6        | 69.3       | 70.7       | 72.0       | 73.2       | 74.3       | 75.3       | 76.1       | 77.0       | 77.7       | 78.4       | 79.1       | 79.7         | 80.2    |
| 8 to < 8.5        |                   | 6.25 to < 6.5          | 71.1        | 72.7       | 74.2       | 75.5       | 76.6       | 77.7       | 78.7       | 79.6       | 80.4       | 81.2       | 81.9       | 82.5       | 83.1         | 83.7    |
| 8.5 to < 9        | 5 to < 5.5        | 6.5 to < 6.75          | 74.2        | 75.9       | 77.3       | 78.6       | 79.8       | 80.9       | 81.9       | 82.8       | 83.6       | 84.3       | 85.0       | 85.7       | 86.3         | 86.8    |
| 9 to < 9.5        |                   | 6.75 to < 7            | 77.2        | 78.8       | 80.3       | 81.6       | 82.8       | 83.8       | 84.8       | 85.7       | 86.5       | 87.3       | 88.0       | 88.6       | 89.2         | 89.8    |
| 9.5 to < 10       | 5.5 or More       | 7 to < 7.25            | 79.9        | 81.6       | 83.0       | 84.3       | 85.5       | 86.6       | 87.6       | 88.5       | 89.3       | 90.0       | 90.7       | 91.4       | 92.0         | 92.5    |
| > 10              |                   | 7.25 or more           | 82.5        | 84.1       | 85.6       | 86.9       | 88.1       | 89.1       | 90.1       | 91.0       | 91.8       | 92.6       | 93.3       | 93.9       | 94.5         | 95.1    |

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

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

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

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

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

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

### 7. GUIDANCE NOTES (INFORMATIVE ONLY – NOT MANDATORY)

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

Where a ducted air-conditioner is not star rated refer to the Air Conditioner CSV file available from <a href="http://reg.energyrating.gov.au/comparator/product\_types/64/search/">http://reg.energyrating.gov.au/comparator/product\_types/64/search/</a> 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).