

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

1. ACTIVITY SPECIFIC DEFINITIONS

Reverse cycle air conditioner (ducted or multi-split) means a ducted or multi-split air conditioner with both heating and cooling functions that is registered for energy labelling and MEPS under standard AS/NZS 3823.2.

ACOP means the annual coefficient of performance as defined in AS/NZS 3823.2

AEER means the annual energy efficiency ratio as defined in AS/NZS 3823.2

Resistance electric heater – panel type: means a system of electric heaters capable of providing direct heating to all living/bedroom areas and services an area of not less than 100 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 dwellings concrete floor system and services an area of not less than 100 m².

2. ACTIVITY DESCRIPTION (SUMMARY)

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

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

3. ACTIVITY ELIGIBILITY REQUIREMENTS

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

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

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

4. INSTALLED PRODUCT REQUIREMENTS

- (1) The reverse cycle air conditioner (ducted or multi-split) must achieve the following minimum performance standards under AS/NZS 3823.2 (2013):
 - (a) Heating Performance, minimum ACOP of 3.7

- (b) Cooling Performance, minimum AEER of 3.5
- (2) The installed product must have a warranty of at least 2 years.
- (3) 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

5. MINIMUM INSTALLATION REQUIREMENTS

- (1) Any reverse cycle air conditioner (ducted or multi-split) installed must comply with AS/NZS 60335.2.40.
- (2) Where a multi-split system is replacing a pre-existing ducted system that is to be decommissioned, the outlets of that decommissioned system must be effectively sealed at ceiling level.
- (3) Removed pre-existing heaters shall have refrigerants and any other scheduled substances disposed of in accordance with the Australian and New Zealand refrigerant handling code of practice as established under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* (Cth)

6. ACTIVITY ENERGY SAVINGS

The normalised energy saved per appliance (GJ) from undertaking 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 3 possible sub-activities available under this activity.

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

Normalised Energy Savings (GJ) per activity

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

HC2B(i)	Cooling Stars >	3 to < 3.5	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 7	7 to < 7.5	7.5 to < 8	8 or more
BCA 6	AEER >	3.75 to < 4	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 < 5.75	5.75 to < 6	6 to < 6.25	6.25 or more
Heating Stars	ACOP	Normalised Energy Savings (GJ)									
3.5 to < 4	4 to < 4.25	411.0	411.4	411.8	412.2	412.5	412.8	413.1	413.6	413.8	414.0
4 to < 4.5	4.25 to < 4.5	420.5	421.0	421.4	421.8	422.1	422.4	422.7	423.1	423.3	423.5
4.5 to < 5	4.5 to < 4.75	429.0	429.5	429.9	430.3	430.6	430.9	431.2	431.6	431.9	432.0
5 to < 5.5	4.75 to < 5	436.7	437.1	437.5	437.9	438.2	438.5	438.8	439.3	439.5	439.7
5.5 to < 6	5 to < 5.25	443.5	444.0	444.4	444.8	445.1	445.4	445.7	446.2	446.4	446.6
6 to < 7	5.25 to < 5.75	449.8	450.3	450.7	451.1	451.4	451.7	452.0	452.4	452.6	452.8
7 to < 7.5	5.75 to < 6	460.7	461.2	461.6	462.0	462.3	462.6	462.9	463.3	463.6	463.7
7.5 to < 8	6 to < 6.25	465.5	466.0	466.4	466.8	467.1	467.4	467.7	468.1	468.3	468.5
8 or more	6.25 or more	469.9	470.4	470.8	471.2	471.5	471.8	472.1	472.5	472.8	472.9

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

HC2B(ii)	Cooling Stars >	3 to < 3.5	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 7	7 to < 7.5	7.5 to < 8	8 or more
BCA 6	AEER >	3.75 to < 4	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 < 5.75	5.75 to < 6	6 to < 6.25	6.25 or more
Heating Stars	ACOP	Normalised Energy Savings (GJ)									
3.5 to < 4	4 to < 4.25	557.4	557.9	558.3	558.6	559.0	559.3	559.5	560.0	560.2	560.4
4 to < 4.5	4.25 to < 4.5	566.9	567.4	567.8	568.2	568.5	568.8	569.1	569.6	569.8	570.0
4.5 to < 5	4.5 to < 4.75	575.4	575.9	576.3	576.7	577.0	577.3	577.6	578.1	578.3	578.5
5 to < 5.5	4.75 to < 5	583.1	583.6	584.0	584.3	584.7	585.0	585.2	585.7	585.9	586.1
5.5 to < 6	5 to < 5.25	590.0	590.5	590.9	591.2	591.6	591.9	592.1	592.6	592.8	593.0
6 to < 7	5.25 to < 5.75	596.2	596.7	597.1	597.5	597.8	598.1	598.4	598.9	599.1	599.3
7 to < 7.5	5.75 to < 6	607.1	607.6	608.0	608.4	608.7	609.0	609.3	609.8	610.0	610.2
7.5 to < 8	6 to < 6.25	611.9	612.4	612.8	613.2	613.5	613.8	614.1	614.6	614.8	615.0
8 or more	6.25 or more	616.3	616.8	617.2	617.6	617.9	618.2	618.5	619.0	619.2	619.4

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

HC2B(iii)	Cooling Stars >	3 to < 3.5	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 7	7 to < 7.5	7.5 to < 8	8 or more
BCA 6	AEER >	3.75 to < 4	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 < 5.75	5.75 to < 6	6 to < 6.25	6.25 or more
Heating Stars	ACOP	Normalised Energy Savings (GJ)									
3.5 to < 4	4 to < 4.25	25.4	25.9	26.3	26.7	27.0	27.3	27.6	28.1	28.3	28.5
4 to < 4.5	4.25 to < 4.5	35.0	35.5	35.9	36.2	36.6	36.9	37.1	37.6	37.8	38.0
4.5 to < 5	4.5 to < 4.75	43.5	44.0	44.4	44.8	45.1	45.4	45.7	46.1	46.3	46.5
5 to < 5.5	4.75 to < 5	51.1	51.6	52.0	52.4	52.7	53.0	53.3	53.8	54.0	54.2
5.5 to < 6	5 to < 5.25	58.0	58.5	58.9	59.3	59.6	59.9	60.2	60.7	60.9	61.1
6 to < 7	5.25 to < 5.75	64.3	64.8	65.2	65.5	65.9	66.2	66.5	66.9	67.1	67.3
7 to < 7.5	5.75 to < 6	75.2	75.7	76.1	76.5	76.8	77.1	77.4	77.8	78.0	78.2
7.5 to < 8	6 to < 6.25	80.0	80.5	80.9	81.2	81.6	81.9	82.1	82.6	82.8	83.0
8 or more	6.25 or more	84.4	84.9	85.3	85.7	86.0	86.3	86.6	87.0	87.2	87.4

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

HC2B(i)	Cooling Stars >	3 to < 3.5	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 7	7 to < 7.5	7.5 to < 8	8 or more
BCA 5	AEER >	3.75 to < 4	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 < 5.75	5.75 to < 6	6 to < 6.25	6.25 or more
Heating Stars	ACOP	Normalised Energy Savings (GJ)									
3.5 to < 4	4 to < 4.25	142.8	145.3	147.5	149.4	151.2	152.8	154.2	156.7	157.8	158.9
4 to < 4.5	4.25 to < 4.5	147.0	149.4	151.6	153.6	155.4	157.0	158.4	160.9	162.0	163.1
4.5 to < 5	4.5 to < 4.75	150.7	153.2	155.4	157.4	159.1	160.7	162.2	164.7	165.8	166.8
5 to < 5.5	4.75 to < 5	154.0	156.5	158.7	160.7	162.5	164.1	165.5	168.0	169.1	170.1
5.5 to < 6	5 to < 5.25	157.1	159.6	161.8	163.7	165.5	167.1	168.5	171.1	172.2	173.2
6 to < 7	5.25 to < 5.75	159.8	162.3	164.5	166.5	168.2	169.8	171.3	173.8	174.9	175.9
7 to < 7.5	5.75 to < 6	164.6	167.1	169.3	171.3	173.0	174.6	176.1	178.6	179.7	180.7
7.5 to < 8	6 to < 6.25	166.7	169.2	171.4	173.4	175.1	176.7	178.2	180.7	181.8	182.8
8 or more	6.25 or more	168.7	171.1	173.3	175.3	177.1	178.7	180.1	182.6	183.7	184.8

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

HC2B(ii)	Cooling Stars >	3 to < 3.5	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 7	7 to < 7.5	7.5 to < 8	8 or more
BCA 5	AEER >	3.75 to < 4	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 < 5.75	5.75 to < 6	6 to < 6.25	6.25 or more
Heating Stars	ACOP	Normalised Energy Savings (GJ)									
3.5 to < 4	4 to < 4.25	207.1	209.5	211.7	213.7	215.5	217.1	218.5	221.0	222.1	223.2
4 to < 4.5	4.25 to < 4.5	211.2	213.7	215.9	217.9	219.7	221.3	222.7	225.2	226.3	227.3
4.5 to < 5	4.5 to < 4.75	215.0	217.5	219.7	221.6	223.4	225.0	226.4	229.0	230.1	231.1
5 to < 5.5	4.75 to < 5	218.3	220.8	223.0	225.0	226.8	228.4	229.8	232.3	233.4	234.4
5.5 to < 6	5 to < 5.25	221.4	223.9	226.1	228.0	229.8	231.4	232.8	235.3	236.4	237.5
6 to < 7	5.25 to < 5.75	224.1	226.6	228.8	230.8	232.5	234.1	235.6	238.1	239.2	240.2
7 to < 7.5	5.75 to < 6	228.9	231.4	233.6	235.6	237.3	238.9	240.4	242.9	244.0	245.0
7.5 to < 8	6 to < 6.25	231.0	233.5	235.7	237.7	239.4	241.0	242.5	245.0	246.1	247.1
8 or more	6.25 or more	232.9	235.4	237.6	239.6	241.4	243.0	244.4	246.9	248.0	249.0

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

HC2B(iii)	Cooling Stars >	3 to < 3.5	3.5 to < 4	4 to < 4.5	4.5 to < 5	5 to < 5.5	5.5 to < 6	6 to < 7	7 to < 7.5	7.5 to < 8	8 or more
BCA 5	AEER >	3.75 to < 4	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 < 5.75	5.75 to < 6	6 to < 6.25	6.25 or more
Heating Stars	ACOP	Normalised Energy Savings (GJ)									
3.5 to < 4	4 to < 4.25	16.4	18.9	21.1	23.1	24.9	26.4	27.9	30.4	31.5	32.5
4 to < 4.5	4.25 to < 4.5	20.6	23.1	25.3	27.3	29.0	30.6	32.1	34.6	35.7	36.7
4.5 to < 5	4.5 to < 4.75	24.4	26.8	29.1	31.0	32.8	34.4	35.8	38.3	39.4	40.5
5 to < 5.5	4.75 to < 5	27.7	30.2	32.4	34.4	36.1	37.7	39.2	41.7	42.8	43.8
5.5 to < 6	5 to < 5.25	30.7	33.2	35.4	37.4	39.2	40.8	42.2	44.7	45.8	46.8
6 to < 7	5.25 to < 5.75	33.5	36.0	38.2	40.1	41.9	43.5	44.9	47.5	48.6	49.6
7 to < 7.5	5.75 to < 6	38.3	40.8	43.0	44.9	46.7	48.3	49.7	52.3	53.4	54.4
7.5 to < 8	6 to < 6.25	40.4	42.9	45.1	47.0	48.8	50.4	51.8	54.4	55.5	56.5
8 or more	6.25 or more	42.3	44.8	47.0	49.0	50.7	52.3	53.8	56.3	57.4	58.4

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 and AEER 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).