



**Summary of eligible activities and abatement in the Energy Efficiency (Cost of Living) Improvement (Eligible Activities) Determination 2016.**

**Activities and abatement to apply from 26 July 2016**

#	Activity	Abatement	pp
<b>Schedule 1. Residential building envelope activities</b>			
<b>1.1 Building sealing activities</b>			
1a	an unsealed door frame in an external wall	0.1684	4-6
1b	an unsealed door frame in a part of an internal wall that divides a conditioned zone or zones from an unconditioned zone or zones	0.1684	4-6
1c	each unsealed edge of an external door	0.1684	4-6
1d	each unsealed edge of a door in a part of an internal wall that divides a conditioned zone or zones from an unconditioned zone or zones	0.1684	4-6
1e	an unsealed window frame in an external wall	0.0122	4-6
1f	each unsealed edge of an openable window	0.0122	4-6
<b>1.2 Exhaust fan sealing activities</b>			
1a	Replace an unsealed ceiling or wall exhaust fan with a self-sealing exhaust fan	0.4171	7-8
1b	Sealing an existing exhaust fan	0.4171	7-8
<b>1.3 Ventilation opening sealing activities</b>			
1a	Sealing ventilation openings in an external wall	0.1054	9-11
1b	install damper or flap to chimney or flue of an open solid fuel burning appliance	2.3451	9-11
<b>1.4 Install a thermally efficient window</b>			
a	Install high performance glazing or glazed products	$((-0.074 * U_w) + 0.9028) * A$	12-13
<b>1.5 Retrofit thermally efficient glazing</b>			
a	A product that improves window thermal efficiency	$((-0.0452 * U_w) + 0.5517) * A$	14-15
<b>1.6 Install thermally efficient window coverings</b>			
	installing window coverings and pelmets to a window in an external wall of a conditioned zone	0.1655	16-17
<b>1.7 Install window pelmets</b>			
	installing a box pelmet to a window in an external wall of a conditioned zone	0.1002	18-19

<b>Schedule 2. Space heating and cooling activities</b>						
<b>2.1 Replacing a ducted gas space heater with a high efficiency ducted gas space heater</b>						
		Star rating	5-5.49	5.5 or greater		
a	Rated heating capacity 10kW to 18 kW		8.27	10.34		20-21
b	Rated heating capacity 18.1 to 28kW		10.47	13.08		20-21
c	Rated heating capacity Greater than 28 kW		13.09	16.36		20-21
<b>2.2 Install a high efficiency ducted gas heater in a new residential premises</b>						
		Star rating	5-5.49	5.5 or greater		
a	Rated heating capacity 10kW to 18 kW		4.03	5.03		22-23
b	Rated heating capacity 18.1 to 28kW		4.31	5.39		22-23
c	Rated heating capacity Greater than 28 kW		5.86	7.33		22-23
<b>2.3 Install a ducted air-to-air heat pump to replace existing ducted air-to-air heat pump</b>						
	Coefficient of Performance	ACOP - 3.7 to 3.99	ACOP - 4.0 to 4.29	ACOP - 4.3 to 4.59	ACOP - 4.6 +	
a	Small (10kW to 18 kW)	0.63	1.66	2.45	3.09	24-25
b	Medium (18.1 to 28kW)	0.80	2.10	3.11	3.92	24-25
c	Large (>28 kW)	1.00	2.63	3.90	4.91	24-25



<b>2.4 Install a ducted air-to-air heat pump to replace existing central electric resistance heater</b>						
	<b>Coefficient of Performance</b>	ACOP - 3.7 to 3.99	ACOP - 4.0 to 4.29	ACOP - 4.3 to 4.59	ACOP - 4.6 +	
a	Small (10kW to 18 kW)	19.91	21.02	21.89	22.58	26-27
b	Medium (18.1 to 28kW)	25.24	26.65	27.75	28.62	26-27
c	Large (>28 kW)	31.77	33.51	34.86	35.94	26-27
<b>2.5 Install high efficiency space air-to-air heat pump (type of heater replaced not specified)</b>						
	<b>Coefficient of Performance</b>	ACOP 4.0 to 4.49	ACOP 4.5 to 4.99	ACOP 5.0 to 5.49	ACOP 5.5 +	
a	Small (2-3kW)	4.65	4.83	4.96	5.07	28-29
b	Medium (3.1-6.0kW)	8.85	9.18	9.44	9.64	28-29
c	Large (>6 kW)	11.09	11.50	11.82	12.07	28-29
<b>2.6 Install insulated gas heating ductwork</b>						
a	Rated output heating capacity 10kW to 18 kW				12.51	30-31
b	Rated output heating capacity 18kW to 88 kW				15.85	30-31
c	Rated output heating capacity greater than 28 kW				19.84	30-31

<b>Schedule 3. Hot water service activities</b>			
<b>3.1 Decommission and replace electric resistance water heater and install an electric boosted solar water heater</b>			
3.1.2	Small (25.2 MJ/day or 120 Litres/day)		4.428 32-33
3.1.2	Large (42 MJ/day or 200 Litres/day)		7.176 32-33
	AAV - [0.0044 x (Esupp + Eaux)]		
<b>3.2 Decommission a gas or liquefied petroleum gas water heater and install a gas or liquefied petroleum gas boosted solar water heater</b>			
a	Small (25.2 MJ/day or 120 Litres/day)		7.80 34-35
b	Large (42 MJ/day or 200 Litres/day)		11.37 34-35
	AAV - [0.000558 x Esupp + 0.00442 x Eaux]		
<b>3.3 Replace an existing shower fixture outlet with low flow shower fixture outlet</b>			
	Remove and replace shower fixture outlet or outlets with 9L/m flow rate		0.6976 36-37

<b>Schedule 4. Lighting activities</b>												
<b>4.1 Residential lighting activities (note that 1.05 power factor correction still applies)</b>												
<b>Table 4.1.1 Activity abatement values for installation of low energy general lighting services in place of mains voltage incandescent general lighting services, pp38-44</b>												
<b>Activity Abatement Value (tCO<sub>2</sub>-e)</b>												
Lumens output	lumens < 350			350 ≤ lumens < 650			650 ≤ lumens ≤ 850			lumens > 850		
	40 l/w	48 l/w	58 l/w	45 l/w	54 l/w	65 l/w	52 l/w	62 l/w	75 l/w	55 l/w	66 l/w	79 l/w
<b>8,000 to 9,999 hrs</b>	0.040	0.043	0.046	0.040	0.043	0.046	0.040	0.043	0.046	0.040	0.043	0.046
<b>10,000 to 11,999 hrs</b>	0.048	0.051	0.054	0.048	0.051	0.054	0.048	0.051	0.054	0.048	0.051	0.054
<b>12,000 to 14,999 hrs</b>	0.054	0.059	0.062	0.054	0.059	0.062	0.054	0.059	0.062	0.054	0.059	0.062
<b>15,000 to 19,999 hrs</b>	0.064	0.070	0.074	0.064	0.070	0.074	0.064	0.070	0.074	0.064	0.070	0.074
<b>20,000 hrs+</b>	0.081	0.089	0.093	0.081	0.089	0.093	0.081	0.089	0.093	0.081	0.089	0.093



<b>Table 4.1.2 Activity abatement values for installation of a low energy reflector lamp in place of a mains voltage incandescent reflector lamp, pp38-44</b>			
Efficacy	Activity Abatement Value (tCO <sub>2</sub> -e)		
	25 l/W	30 l/W	36 l/W
15,000 to 19,999 hrs	0.082	0.085	0.087
20,000 hrs to 24,999 hrs	0.103	0.107	0.111
25,000 hrs +	0.125	0.129	0.134

<b>Table 4.1.3 Activity abatement values for installation of low energy 12 volt lamp to replace 12 volt halogen, pp38-44</b>				
Efficacy	Activity Abatement Value (tCO <sub>2</sub> -e)			
	52 l/W	62 l/W	75 l/W	90 l/W
15,000 to 19,999 hrs	0.081	0.085	0.089	0.091
20,000 hrs to 24,999 hrs	0.101	0.107	0.112	0.116
25,000 hrs +	0.121	0.130	0.135	0.140

<b>Table 4.1.4 , Activity abatement values for installation of mains voltage low energy downlight in place of existing 12 volt halogen downlight, pp38-44</b>					
Efficacy	Activity Abatement Value (tCO <sub>2</sub> -e)				
	40 l/W	48 l/W	58 l/W	69 l/W	83 l/W
15,000 to 19,999 hrs	0.076	0.082	0.086	0.090	0.093
20,000 hrs to 24,999 hrs	0.097	0.103	0.109	0.114	0.116
25,000 hrs +	0.116	0.125	0.131	0.137	0.141

<b>Table 4.1.5 Activity abatement values for installation of low energy lamp with a GU10 base in place of existing mains voltage halogen lamp of at least 35 watts with a GU10 base, pp38-44</b>			
Efficacy	Activity Abatement Value (tCO <sub>2</sub> -e)		
	25 l/W	30 l/W	36 l/W
15,000 to 19,999 hrs	0.082	0.085	0.087
20,000 hrs to 24,999 hrs	0.103	0.107	0.111
25,000 hrs +	0.125	0.129	0.134

<b>4.2 Commercial lighting activities</b>		
Upgrading building lighting equipment in a business premises and replacing with more efficient lighting equipment	AAV x Energy Savings x ACTAM	pp. 45-47
AAV is a multiplier converting NSW Energy Savings Scheme (ESS) to EEIS = 0.153 Energy Savings is total energy savings from Clause 9.4 of the ESS rule. An air conditioning factor of 1.05 is applied where relevant.		



<b>Schedule 5. Appliance activities</b>			
<b>5.1 Decommissioning and disposal of refrigerator or freezer</b>			
	1-door refrigerator or freezer	0.5926	48-49
	2-door refrigerator or freezer	1.0603	48-49
<b>5.2 Purchase of high efficiency refrigerator or freezer</b>			
a	single door refrigerator	$(0.9126 \times [200 + 4.0 \times (V_{ff})^{0.67}] - CEC) \times 0.00224$	50-53
b	two door refrigerator	$(0.6954 \times [150 + 8.8 \times (V_{ff} + 1.60 \times V_{fr})^{0.67}] - CEC) \times 0.00224$	50-53
c	chest freezer	$(0.6329 \times [150 + 7.5 \times (1.60 \times V_{fr})^{0.67}] - CEC) \times 0.00266$	50-53
d	upright freezer	$(0.7700 \times [150 + 7.5 \times (1.60 \times V_{fr})^{0.67}] - CEC) \times 0.00266$	50-53
Where—			
(a) $V_{ff}$ is the volume in litres of the fresh food compartment;			
(b) $V_{fr}$ is the volume in litres of the freezer compartment; and			
(b) CEC is the comparative energy consumption specified on energy rating label as defined by AS/NZS 4474.			
<b>5.3 Installation of high efficiency electric clothes dryer</b>			
	Installing one HE electric clothes dryer	$(48 \cdot 08 \times \text{Rated Capacity} - CEC) \times 0.003206$	54-55
Where—			
(a) Rated Capacity is measured in kilograms and defined by AS/NZS 2442			
(b) CEC is the comparative energy consumption and is measured in kilowatt hours per year (kWh/y) specified on the energy rating label as defined by AS/NZS 2442.			
<b>5.4 Install a standby power controller</b>			
a	In an information technology environment	0.16	56-59
b	In an audio visual environment	0.16	56-59
<b>5.5 Purchase a high efficiency television</b>			
	A high efficiency television	$(0.512 \times [SA \times 0.1825 + 127.5] - CEC) \times 0.001494$	60-61
Where—			
(a) SA is the area of the screen in square centimetres as defined in AS/NZS 62087; and			
(b) CEC is the comparative energy consumption in kWh/y specified on the energy rating label as defined by AS/NZS 62087.			
<b>5.6 Install a high efficiency swimming pool pump</b>			
	Minimum star rating of 6	$(1622 - PAEC) \times 0.001228$	62-63
Where PAEC is the projected annual energy consumption in kWh/y listed on the energy rating label.			
<b>5.7 High Efficiency Refrigerated Display Cabinet Activities</b>			
	Installing a refrigerated display cabinet	AAV x TDA	64-66
Where—			
(a) AAV is the relevant AAV prescribed in the table below for the particular refrigerated display cabinet type as defined in the AS 1731 series of standards; and			
(b) TDA is the Total Display Area of the Refrigerated Display Cabinet as defined in the AS 1731 series of standards.			



<b>Table 5.3 Activity abatement values by type of refrigerated display cabinets</b>	
<b>Refrigerated display cabinet type and sub-class</b>	<b>Activity Abatement Value (tCO<sub>2</sub>-e)</b>
<b>Remote type refrigerated display cabinets</b>	
RS 1 - Unlit shelves	1.622
RS 1 - Lit shelves	2.755
RS 2 - Unlit shelves	1.645
RS 2 - Lit shelves	2.196
RS 3 - Unlit shelves	1.754
RS 3 - Lit shelves	2.379
RS 4 - Glass door	1.149
RS 6 - Gravity coil	1.680
RS 6 - Fan coil	1.673
RS 7 - Fan coil	1.913
RS 8 - Gravity coil	1.447
RS 8 - Fan coil	1.560
RS 9 - Fan coil	1.564
RS 10 - Low	2.204
RS 11	4.505
RS 12	7.835
RS 13 - Solid sided	2.519
RS 13 - Glass sided	2.313
RS 14 - Solid sided	1.568
RS 14 - Glass sided	9.399
RS 15 - Glass door	3.753
RS 16 - Glass door	4.106
RS 18	3.427
RS 19	2.553
<b>Self-contained type refrigerated display cabinets<sup>1</sup></b>	
HC1	1.164
HC4	1.591
VC1	3.357
VC2	2.678
VC4 - solid door	3.861
VC4 - glass door	2.542
HF4	2.716
HF6	0.815
VF4 - solid door	4.249
VF4 - glass door	4.249

*Note 1:* 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