

259 Glen Osmond Rd Frewville South Australia 5063 Telephone: 08 8338 2340

Fax: 08 8338 2360

email: research@mcgregor.com.au

www.mcgregor.com.au



#### **Air Conditioning Survey**

Prepared for: ESCOSA

Project No: 7134

Date: June 2004



#### **CONTENTS**

Section 1	Introduction	1
Section 2	Executive Summary	4
2.1	Overview	5
	Comparison of the General Public and Low Income Segments	5
	Comparison of Sub Groups Within the Low Income Segment	6
2.2	Air Conditioner Type, Number, Age & Usage	7
	Air Conditioning Penetration	7
	Air Conditioning Type	
	Number of Air Conditioners Installed	
	Approximate Age of Air Conditioning Units	
	Number of Rooms Serviced by Air Conditioning Units  Usage of Air Conditioning Units	
2.3	Fans - Number and Usage	
2.3	Number of Fans	
	Usage of Fans	
2.4	Air Conditioner Thermostats	
2.7	Incidence of Having Thermostat Settings on Air Conditioners	
	Temperature Setting of Thermostat	
	Adjustment of Thermostat Setting When Leaving Home	
	Adjustment of Thermostat Setting on Very Hot Days	14
2.5	Setting the Air Conditioner Temperature	. 14
2.6	Outside Temperature Ranges at Which Air Conditioners are Started	. 15
2.7	Duration of Air Conditioner Use	. 16
	Average Number of Days per Month that Air Conditioners are Used in	
	Summer	16
	Air Conditioner Usage During Average Temperature Summer Weekdays - Main Living Areas & Main Sleeping Areas	17
	Air Conditioner Usage During Summer Heat Wave Periods - Main Living	
	Areas & Main Sleeping Areas	18
2.8	Air Conditioner use at Different Temperature Scenarios	. 19
	Five Consecutive Days of 30 Degrees Celsius	19
	Five Consecutive Days of 35 Degrees Celsius	21
2.9	Specific Cooling Needs	. 22
2.10	Type of Dwelling	. 22
2.1	1 Segment Characteristics	. 23
2.12	2 Sub Groups Within the Low Income Segment	. 23
	Outside Temperature at Which the Air Conditioner is Turned On	24
	Average Number of Days per Month Air Conditioning is Used	
	Times When Air Conditioning is Switched on in Summer Heatwave Periods - Main Sleeping Areas and Main Living Areas	
	Air Conditioner Usage Over Five Consecutive Days When the Temperature Was 35 Degrees Celsius	26



Section	3	Air Conditioner Ownership, Usage Patterns & Segme Comparisons	
	3.1	Air Conditioner Type, Age, Number and Usage	28
		Type of Air Conditioner	
		Number of Air Conditioners Installed	
		Approximate Age of Air Conditioners	
		Number of Rooms Serviced by Each Air Conditioner	
		Air Conditioner Usage	
	3.2	Fans - Number and Usage	
		Number of Fans	
		Use of Fans	
	3.3	Air Conditioner Thermostats	
		Incidence of Having Thermostat Settings on Air Conditioners	
		Temperature Setting of Thermostat	
		Adjustment of the Thermostat Setting When Leaving Home	
	0.4	Adjustment of the Thermostat Setting on Very Hot Days	
	3.4	Setting the Air Conditioner Temperature	
	3.5	Temperature at Which Air Conditioners are Started	72
	3.6	Duration of Air Conditioner Use	
		Average Number of Days that Air Conditioners are Used in Summer	
		Air Conditioner Usage During Average Temperature Summer Weekdays Air Conditioner Usage During Summer Heat Wave Periods on Weekday	
	3.7	Air Conditioner Use at Different Temperature Scenarios	91
		Five Consecutive Days of 30 Degrees Celsius	91
		Five Consecutive Days of 35 Degrees Celsius	92
	3.8	Specific Cooling Needs	106
	3.9	Type of Dwelling	108
	3.10	Segment Characteristics	111
		Gender and Age	111
		Employment Status	111
		Occupation	112
		Household Structure	113
		Government Assistance	113
		Home Ownership	
		Origin	
		Gross Household Income	115
Section	4	Low Income Segment Sub Group Comparisons	130
	4.1	Outside Temperature at Which the Air Conditioner is Turned On	131
	4.2	Average Number of Days per Month Air Conditioning is Used	134
	4.3	Times When Air Conditioning is Switched on in Summer Heatwave Periods	136
		Age Groups	136
		Employment Status	136
		Country of Origin	
		Welfare Recipient Status	
		Home Ownership	139



4.4	Air Conditioning Usage Over Five Consecutive Days When the	
	Temperature Was 35 Degrees Celsius	142
	Age Groups	142
	Employment Status	143
	Country of Origin	144
	Welfare Status	145
	Home Ownership	146
Appendix 1: Ab	out The Research	153
Appendix 2: Ad	ditional Comments	155
Appendix 3: Sa	mpling Tolerance	158
Appendix 4: Qu	estionnaire	160
Appendix 5: Ho	w To Read The Computer Tabulations	168

For enquiries on this report please contact Prue Jay or Peter Hine.



# Section 1 Introduction



This document has been prepared by McGregor Tan Research to report on the findings of the research.

#### **Background**

1.1 The key requirement of this research was to determine the extent to which low income people have home air conditioning.

More specifically, the research was to determine the following:

- Comparison of the air conditioning usage patterns of the low income segment compared to the Adelaide metropolitan population overall
- > The type of air conditioning, if any, that they have
- > The coverage of the air conditioning
- Age of air conditioning unit(s)
- Air conditioning usage patterns
- ➤ Usage patterns amongst the various segments within the low income group (older people, younger people, employed, not employed, non English speaking backgrounds, welfare recipients, etc.)

#### **Methodology**

- 1.2 McGregor Tan Research conducted telephone surveys with the following two segments:
  - The general public, which comprised a random sample of 405 adults over the age of 18 from within the Adelaide metropolitan area
  - ➤ Low income earners, which comprised a sample of 400 adults over the age of 18 in the Adelaide metropolitan area who met the following criteria:



- If they were single, their gross household income was \$20,000 or less per year
- If they lived with a partner or spouse, their gross household income was \$25,000 or less per year
- If they were single adults with a dependent child or children, their gross household income was \$30,000 or less
- If they lived in a household with two or more adults with dependent children, their gross household income was \$35,000 or less
- 1.3 These telephone interviews were conducted in May 2004.



# Section 2 Executive Summary



The following Executive Summary covers the key findings of the research for both the general public and the low income segment, as well as a comparison of air conditioning usage patterns amongst the sub groups within the low income segment.

#### 2.1 <u>Overview</u>

#### Comparison of the General Public and Low Income Segments

There were many similarities and few variances in the air conditioning usage patterns (and the air conditioning units owned) by those surveyed from both the general public and the low income segments.

Among these groups, the following key similarities applied:

- The penetration of air conditioners in the homes of both the general public (88%) and the low income segment (90%) was similar
- The incidence of having evaporative versus other types of air conditioning was similar for both segments general public (evaporative 29%, other 71%); low income segment (evaporative 27%, other 73%)
- The average outside temperature at which air conditioning units were started was identical for both segments, namely 32.5 degrees Celsius
- The average number of days per month that air conditioners were used in summer over the past few years was also identical for both segments, that being 11.5 days
- Similar air conditioning usage patterns were identified among both groups for the periods of the day during which air conditioners would normally operate in both main living areas and main sleeping areas on weekdays of average summer temperature
- Similar air conditioning usage patterns were also identified among both groups for the periods of the day during which air conditioners



would normally operate in both main living areas and main sleeping areas *during summer heatwave periods* 

- There were almost identical air conditioning usage patterns amongst both segments on each of five consecutive days of 30 degrees Celsius temperature, as well as on each of five consecutive days of 35 degrees Celsius temperature
- The number of fans (ceiling or portable) that were installed was relatively consistent across both segments

The main variances among the two segments were:

- Those from the general public were more likely to own ducted air conditioners (both reverse cycle and evaporative), as well as reverse cycle split system air conditioners, while a higher proportion from the low income segment owned window/wall air conditioners (both reverse cycle and evaporative)
- The air conditioners installed in the homes of those from the low income segment tended to be older than those installed in the homes of those from the general public segment
- Higher proportions of those from the low income segment indicated that they used fans to supplement air conditioning on hot days, or in rooms that were not air conditioned
- Those from the low income segment were also more likely to indicate that they had specific cooling needs due to illness, disability, age or other reasons

#### Comparison of Sub Groups Within the Low Income Segment

There were also many similarities identified in the key air conditioning usage patterns among the sub groups examined in the low income segment - age, employment status, origin, welfare recipient status and home ownership status.

These similarities were:



- There were minor variances to the average outside temperature at which air conditioners were turned on among those in the low income segment, with a range of just 0.6 degrees across all sub groups
- There were small variances in the average number of days per month during which people used their air conditioners during summer, with a range from 11.0 days to 13.3 days across all sub groups
- There were similar air conditioning usage patterns identified among all sub groups in summer heatwave periods
- The usage of air conditioners across five consecutive days of 35 degrees Celsius heat followed a similar trend for all of the sub groups

#### 2.2 Air Conditioner Type, Number, Age & Usage

#### Air Conditioning Penetration

The penetration of air conditioners in the homes of both the general public and low income segment was similar, with 88% of those from the general public having air conditioning, compared to 90% of the low income segment.

#### Air Conditioning Type

Reverse cycle window/wall, evaporative ducted, reverse cycle split system, reverse cycle ducted and refrigerated window/wall were the most common types of air conditioning identified across both the general public and low income segments.

If we evaluate evaporative air conditioning versus other types of air conditioning for both segments, the following results were recorded:



- Evaporative air conditioning general public (29%), low income segment (27%)
- Other types of air conditioning general public (71%), low income segment (73%)

There were also a number of other variances in the air conditioner types that were in the homes of these two segments. Higher proportions from the low income segment owned window/wall air conditioners (both reverse cycle and refrigerated), while those from the general public were more likely to own ducted systems (both reverse cycle and evaporative), as well as reverse cycle split systems.

The results for the main types of air conditioning for both segments are outlined below:

- Reverse cycle window/wall (general public 26%, low income segment 35%)
- > Evaporative ducted (general public 23%, low income segment 20%)
- Reverse cycle ducted (general public 15%, low income segment 6%)
- Reverse cycle split system (general public 14%, low income segment 10%)
- Refrigerated window/wall (general public 8%, low income segment 18%)

#### Number of Air Conditioners Installed

The average number of air conditioning units installed for all types of units for both segments ranged from 1.0 to 1.7.

The average number of evaporative air conditioners installed in each household for both segments was almost identical, while those from the general public segment tended to own a marginally higher number of



reverse cycle and refrigerative air conditioning units than those from the low income segment.

Air Conditioner Type	Number Installed General Public	Number Installed Low Income
Evaporative		
Portable	1.0	1.0
Fixed	1.1	1.1
Ducted	1.1	1.0
Reverse Cycle (heat and cool)		
Window/Wall	1.3	1.1
Split System	1.3	1.2
Ducted (Multi Room)	1.2	1.1
Refrigerative (cooling only)		
Window/Wall	1.2	1.2
Split System	1.3	1.0
Ducted (Multi room)	1.7	1.0

#### Approximate Age of Air Conditioning Units

There was considerable variation in the age of the air conditioning units installed across both segments.

In general, the newest air conditioners were reverse cycle split system units (average age 4.2 to 4.6 years), while the oldest were the refrigerative window/wall units (average age of more than 14 years).

For most types of air conditioning, there was a clear trend for the units installed in the homes of those from low income segment to be older than those owned by the general public segment, as outlined in the following table.



Air Conditioner Type	Approximate Age General Public	Approximate Age Low Income
Evaporative		
Portable	1.0	6.8
Fixed	9.9	14.0
Ducted	8.0	8.9
Reverse Cycle (heat and cool)		
Window/Wall	11.7	12.4
Split System	4.2	4.6
Ducted (Multi Room)	6.4	10.1
Refrigerative (cooling only)		
Window/Wall	15.4	14.2
Split System	8.5	12.0
Ducted (Multi room)	8.0	5.6

#### Number of Rooms Serviced by Air Conditioning Units

Ducted air conditioning was used to service the greatest number of rooms. This was the case for each type of ducted air conditioning - evaporative, reverse cycle and refrigerative. Conversely, portable and window/wall air conditioners serviced the least number of rooms.

There was little variance in the number of rooms serviced for both segments, as outlined in the following table.

Air Conditioner Type	Number of Rooms Serviced General Public	Number of Rooms Serviced Low Income		
Evaporative				
Portable	1.0	2.6		
Fixed	3.7	3.1		
Ducted	5.4	5.6		
Reverse Cycle (heat and cool)				
Window/Wall	2.7	2.8		
Split System	3.3	3.0		
Ducted (Multi Room)	5.7	5.6		
Refrigerative (cooling only)				
Window/Wall	1.9	2.5		



Split System	3.0	4.0
Ducted (Multi room)	5.0	4.9

#### **Usage of Air Conditioning Units**

The usage patterns for air conditioners between day or night, and both day and night, varied considerably depending on the type of air conditioning unit installed.

Where there was a reasonable sample size (more than 20) for the air conditioner type for both the general public and low income segments, however, air conditioning usage patterns for these segments were similar, as outlined in the table below.

Air Conditioner Type	Type General Public		L	ow Incom	ie	
	Day	Night	Both	Day	Night	Both
Evaporative						
Portable	50	13	38	43	43	14
Fixed	27	20	53	53	6	41
Ducted	28	8	63	23	10	67
Reverse Cycle (heat and cool)	Reverse Cycle (heat and cool)					
Window/Wall	28	18	54	34	18	49
Split System	27	25	47	17	27	56
Ducted (Multi Room)	19	29	53	21	17	63
Refrigerative (cooling only)						
Window/Wall	42	16	42	44	23	33
Split System	75	-	25	-	-	100
Ducted (Multi room)	57	-	43	50	-	50



#### 2.3 Fans - Number and Usage

#### Number of Fans

There was a relatively even mix of responses in relation to the number of fans (ceiling or portable) that people had in their homes.

These responses were also relatively consistent across both the general public and low income segments, as outlined:

- ➤ One general public (20%), low income segment (22%)
- > Two general public (24%), low income segment (23%)
- Three general public (15%), low income segment (17%)
- Four general public (9%), low income segment (11%)
- Five or more general public (10%), low income segment (5%)
- None general public (23%), low income segment (22%)

#### Usage of Fans

The majority of those surveyed from both segments indicated that they used fans as an alternative to air conditioning when it is not too hot (general public 69%, low income segment 68%).

There were, however, higher proportions from the low income segment who indicated that they used fans to supplement air conditioning on hot days, and in rooms that are not air conditioned, as outlined:

- To supplement air conditioning on hot days general public (29%), low income (35%)
- In rooms that are not air conditioned general public (42%), low income (52%)



#### 2.4 <u>Air Conditioner Thermostats</u>

#### Incidence of Having Thermostat Settings on Air Conditioners

More than half of the respondents from both segments indicated that they had a thermostat setting on their air conditioner - general public (58%), low income segment (59%).

#### **Temperature Setting of Thermostat**

Amongst those who indicated that their air conditioners had thermostat settings, almost half from the low income segment (49%, significantly above the 22% from the general public) indicated that their air conditioner thermostat did not display the temperature.

As a result, there were higher proportions of those from the general public who named each of the defined temperature ranges at which their thermostat is set, as outlined:

- > 18 to 19 degrees general public (9%), low income segment (4%)
- 20 to 21 degrees general public (17%), low income segment (14%)
- 22 to 23 degrees general public (23%), low income segment (18%)
- 24 to 25 degrees general public (25%), low income segment (14%)
- ➤ 26 to 27 degrees general public (3%), low income segment (1%)

#### Adjustment of Thermostat Setting When Leaving Home

The overwhelming majority of those with thermostats from both segments (although higher among the low income segment) indicated that they turn off their air conditioners when leaving home - general public 80%, low income segment 89%.



Relatively small proportions indicated that they do not adjust the thermostat when leaving home (general public 11%, low income segment 5%), or adjust the thermostat occasionally (general public 5%, low income segment 4%).

#### Adjustment of Thermostat Setting on Very Hot Days

There was a relatively high proportion of those surveyed from both segments (although higher amongst those from the general public) who indicated that they did not change their thermostat setting on very hot days - general public 68%, low income segment 58%.

Those from the low income segment were more likely to indicate that they change the thermostat setting to a higher temperature on such days (general public 8%, low income segment 19%), while approximately one quarter of the respondents from each segment indicated that they change the thermostat setting to a lower temperature on very hot days.

#### 2.5 <u>Setting the Air Conditioner Temperature</u>

As was the case with thermostats, a higher proportion of those surveyed from the low income segment (66%, compared to the general public, 50%) indicated that their air conditioner did not display the temperature.

Consequently, higher proportions of those from the general public named most temperature ranges at which they set their air conditioner on 35 degrees plus days, or in a prolonged period of hot weather, as outlined:

- ➤ 18 to 19 degrees general public (9%), low income segment (4%)
- 20 to 21 degrees general public (9%), low income segment (8%)
- 22 to 23 degrees general public (16%), low income segment (14%)
- > 24 to 25 degrees general public (13%), low income segment (6%)



- ➤ 26 to 27 degrees general public (1%), low income segment (2%)
- > 28 to 29 degrees general public (1%), low income (0%)

#### 2.6 <u>Outside Temperature Ranges at Which Air Conditioners</u> are Started

A temperature range of between 30 and 35 degrees Celsius was clearly the most common outside temperature range at which respondents from both segments started their air conditioners for cooling.

In fact, the results for all temperature ranges for both segments were virtually identical, as shown:

- Less than 24 degrees general public (2%), low income segment (1%)
- > 25 to 29 degrees general public (10%), low income segment (9%)
- > 30 to 35 degrees general public (59%), low income segment (59%)
- Greater than 35 degrees general public (29%), low income segment (30%)

An average temperature was calculated by using the following temperature points for each of the identified temperature ranges, and weighting by the proportional responses:

- Less than 24 degrees Celsius 24 degrees Celsius
- 25 to 29 degrees Celsius 27 degrees Celsius
- 30 to 35 degrees Celsius 32.5 degrees Celsius
- Greater than 35 degrees Celsius 35 degrees Celsius

Not surprisingly, given the results above, the average outside temperature at which air conditioning units are started for cooling were identical for both segments, namely 32.5 degrees Celsius.



#### 2.7 Duration of Air Conditioner Use

## Average Number of Days per Month that Air Conditioners are Used in Summer

There was a relatively even spread or ranges of days per month during which respondents used their air conditioners in summer. These ranges were also very similar for both the general public and low income segments, as outlined:

- None general public (1%), low income segment (1%)
- One to Four days general public (17%), low income segment (17%)
- Five to eight days general public (23%), low income segment (25%)
- Nine to twelve days general public (22%), low income segment (23%)
- Thirteen to twenty days general public (23%), low income segment (20%)
- More than twenty days general public (13%), low income segment (15%)

The average number of days that air conditioners were in use was calculated using the mid point for each of the above ranges, and weighting the proportional responses.

Based on these calculations, the average number of days per month that air conditioners were in use for each segment was identical at 11.5 days per month.



#### <u>Air Conditioner Usage During Average Temperature Summer</u> <u>Weekdays - Main Living Areas & Main Sleeping Areas</u>

The main periods in which respondents would normally operate their air conditioning units during **average temperature summer weekdays** were the afternoon (from midday to 6pm), and the evening (from 6pm to 10pm). This was the case for both segments for both main living areas and main sleeping areas.

There were, however, higher proportions of those from the low income segment who indicated that they would not turn on their air conditioners in either area in these circumstances. These results follow.

#### Main Living Areas:

- Early morning (6am to 9am) general public (5%), low income segment (5%)
- Late morning (9am to midday) general public (11%), low income segment (14%)
- Afternoon (midday to 6pm) general public (50%), low income segment (56%)
- Evening (6pm to 10pm) general public (47%), low income segment (45%)
- Night (10pm to 6am) general public (10%), low income segment (9%)
- > Would not turn on general public (19%), low income segment (26%)

#### Main Sleeping Areas:

- Early morning (6am to 9am) general public (5%), low income segment (2%)
- Late morning (9am to midday) general public (5%), low income segment (5%)



- Afternoon (midday to 6pm) general public (22%), low income segment (21%)
- > Evening (6pm to 10pm) general public (34%), low income segment (30%)
- Night (10pm to 6am) general public (17%), low income segment (13%)
- > Would not turn on general public (43%), low income segment (57%)

#### Air Conditioner Usage During Summer Heat Wave Periods -

#### Main Living Areas & Main Sleeping Areas

The main periods in which respondents would normally operate their air conditioning units during **summer heatwave periods** were again the afternoon (from midday to 6pm), and the evening (from 6pm to 10pm), albeit in significantly higher proportions than for average temperature summer weekdays, as outlined above. There were also significantly lower proportions who indicated that they would not turn on their air conditioners in such heatwave conditions.

This was the case for both segments for both main living areas and main sleeping areas. These results follow.

#### Main Living Areas:

- Early morning (6am to 9am) general public (17%), low income segment (17%)
- Late morning (9am to midday) general public (30%), low income segment (32%)
- Afternoon (midday to 6pm) general public (62%), low income segment (75%)
- Evening (6pm to 10pm) general public (64%), low income segment (64%)



- Night (10pm to 6am) general public (22%), low income segment (25%)
- Would not turn on general public (4%), low income segment (2%)

#### **Main Sleeping Areas:**

- Early morning (6am to 9am) general public (10%), low income segment (11%)
- Late morning (9am to midday) general public (15%), low income segment (16%)
- Afternoon (midday to 6pm) general public (27%), low income segment (35%)
- Evening (6pm to 10pm) general public (48%), low income segment (44%)
- Night (10pm to 6am) general public (28%), low income segment (29%)
- Would not turn on general public (29%), low income segment (38%)

#### 2.8 Air Conditioner use at Different Temperature Scenarios

We then investigated air conditioner usage at two different temperature scenarios. Specifically, we asked on what days those surveyed would turn their air conditioner on and at what time, on:

- Five consecutive days of 30 degrees Celsius
- Five consecutive days of 35 degrees Celsius

#### Five Consecutive Days of 30 Degrees Celsius

The air conditioning usage patterns among both the general public and low income segments were almost identical during **five consecutive** days of 30 degrees Celsius.



Midday to 6pm was the most common time at which air conditioning was turned on by both groups (although by a slightly higher proportion from the low income segment).

There was also a trend among those from both segments to turn their air conditioning on earlier in day (9am to midday and midday to 6pm) as the number of consecutive days of 30 degree temperature increased.

The proportions who indicated that they would not turn their air conditioning on over the five days decreased from almost half on day one to approximately one quarter on day five for both segments. This decrease also followed an very similar trend for both groups.

The results for both of these segments are outlined in the following tables.

#### **General Public Segment**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	4%	3%	3%	4%	4%
9am to midday	7%	9%	13%	14%	12%
Midday to 6pm	28%	33%	37%	37%	38%
6pm to 10pm	13%	14%	17%	17%	18%
10pm to 6am	1%	1%	1%	1%	1%
Would not turn on	48%	39%	30%	27%	26%

#### Low Income Segment

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	5%	6%	6%	8%	8%
9am to midday	8%	9%	11%	13%	13%
Midday to 6pm	33%	38%	43%	42%	43%
6pm to 10pm	7%	8%	8%	10%	9%
10pm to 6am	0%	0%	0%	0%	1%
Would not turn on	47%	39%	31%	27%	26%



#### Five Consecutive Days of 35 Degrees Celsius

The air conditioning usage patterns for **five consecutive days of 35 degree Celsius** temperatures somewhat mirrored that outlined for the five consecutive days of 30 degree Celsius temperatures above, that is:

- Midday to 6pm was the most common time at which air conditioning was turned on across all five days for both groups again by slightly higher proportions from the low income segment
- Air conditioning was turned on earlier in the day by both groups as the number of consecutive days of 35 degree temperature increased
- The proportions who indicated that they would not turn their air conditioning on also decreased considerably over the five day period, although in the case of these 35 degree Celsius temperatures, significantly lower proportions (than for the 30 degree Celsius temperatures) stated that they would not turn their air conditioning on for each of the five days

#### **General Public Segment**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	9%	11%	13%	14%	14%
9am to midday	21%	22%	25%	26%	28%
Midday to 6pm	35%	39%	38%	37%	37%
6pm to 10pm	15%	17%	18%	18%	18%
10pm to 6am	1%	1%	0%	1%	0%
Would not turn on	19%	10%	5%	3%	3%

#### Low Income Segment

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	12%	11%	14%	16%	17%
9am to midday	19%	22%	25%	26%	25%
Midday to 6pm	40%	43%	45%	43%	43%
6pm to 10pm	8%	8%	9%	10%	10%
10pm to 6am	0%	0%	0%	1%	1%
Would not turn on	20%	15%	7%	5%	4%



#### 2.9 Specific Cooling Needs

Just under one in five (18%) of those surveyed from the low income segment indicated that they had specific cooling needs due to illness, disability, age or other reasons. This is significantly above the 9% recorded among those from the general public.

The main reasons given for these specific cooling needs were:

- Disability/health reasons general public (3%), low income segment (12%)
- Young baby/children general public (3%), low income segment (2%)
- Aged/elderly general public (2%), low income segment (4%)

#### 2.10 Type of Dwelling

Although the overwhelming majority of those from both segments lived in single storey stand alone dwellings, there were a number of variances to the types of dwelling in which those from the two segments lived, as outlined:

- Single storey stand alone dwelling (general public 72%, low income segment 83%)
- Unit (general public 11%, low income segment 8%)
- Double storey stand alone dwelling (general public 9%, low income segment 1%)
- Maisonette (general public 4%, low income segment 7%)
- Townhouse (general public 3%, low income segment 0%)



#### 2.11 Segment Characteristics

There were a number of distinct characteristics identified amongst the two segments. The main differences were that those from the low income segment were more likely than those from the general public to:

- ➤ Be aged 40 plus
- Be female
- > Not be in current employment
- Live in a household that comprised mature couples without children
- Be in receipt of an aged pension or some other form of government assistance
- Live in a Housing Trust home
- ➢ Be of migrant/non-English speaking or Aboriginal/Torres Strait Islander background
- > Be more strongly represented in the lower income ranges

#### 2.12 Sub Groups Within the Low Income Segment

We also examined the variances in the key air conditioning usage patterns amongst a number of sub groups within the low income segment, those sub groups being:

- Age groups those aged 18 to 39 compared to those aged 40 plus
- Employment status those who were employed compared to those who were not employed
- Welfare recipients those on aged pensions compared to those obtaining some other form of assistance compared to those receiving no assistance



- Origin Aboriginals or Torres Strait Islanders/migrants/non-English speaking backgrounds compared to those who were from other backgrounds
- Home ownership home owners compared to private renters compared to Housing Trust renters/others

#### Outside Temperature at Which the Air Conditioner is Turned On

There were minor variances to the average outside temperature at which air conditioners were turned on among these groups, with a range of just 0.6 degrees across all sub groups, as outlined in the following table.

Sub Group	Average Temperature			
Age				
18 to 39	32.8			
40 plus	32.6			
Employment Status				
Employed	32.8			
Not employed	32.6			
Welfare Recipient Status				
Aged Pensioner	32.5			
Other pension/assistance	32.9			
None	32.5			
Origin				
Aboriginal/Torres Strait Islander/Non-English speaking	32.7			
Other	32.6			
Home Ownership				
Home owner	32.6			
Renting privately	33.1			
Renting Housing Trust/other	32.5			



#### Average Number of Days per Month Air Conditioning is Used

There were small variances in the average number of days per month during which people use their air conditioners during summer, with a range from 11.0 days for those not from Aboriginal, Torres Strait Islander, migrant or non-English speaking backgrounds, to 13.3 days for those aged 18 to 39.

Sub Group	Average Number of Days			
Age				
18 to 39	13.3			
40 plus	11.1			
Employment Status				
Employed	11.2			
Not employed	11.5			
Welfare Recipient Status				
Aged Pensioner	11.0			
Other pension/assistance	12.4			
None	11.1			
Origin				
Aboriginal/Torres Strait Islander/Non-English speaking	12.9			
Other	11.0			
Home Ownership				
Home owner	11.1			
Renting privately	12.2			
Renting Housing Trust/other	12.5			

## <u>Times When Air Conditioning is Switched on in Summer</u> <u>Heatwave Periods - Main Sleeping Areas and Main Living Areas</u>

There were similar air conditioning usage patterns identified among these sub groups in summer heatwave periods.

For all of the sub groups, the most common times at which air conditioners were switched on in these conditions were from midday to 6pm, and from 6pm to 10pm.



This was the case for both the main living areas and main sleeping areas, however, higher proportions from all of the sub groups used their air conditioning in their main living areas at these times.

There were some differences to these usage patterns across the groups identified (refer to Section 4.3), however, these variations were relatively minor and did not change the overall trends.

### <u>Air Conditioner Usage Over Five Consecutive Days When the</u> <u>Temperature Was 35 Degrees Celsius</u>

The usage of air conditioners across five consecutive days of 35 degrees Celsius heat followed a similar trend for all of the sub groups.

This trend was for the proportion from all of these sub groups who indicated that they would not turn their air conditioners on to decline significantly as the number of days of this heat increased, as well as for the air conditioning to be turned on earlier in the day as the days progressed.

In almost all cases, the proportion who indicated that they would not turn on their air conditioning declined from around 20% on day 1 to around 5% on day 5.



# Section 3 Air Conditioner Ownership, Usage Patterns & Segment Comparisons



This section outlines the key findings of the research.

#### 3.1 Air Conditioner Type, Age, Number and Usage

3.1.1 Those surveyed were asked to identify the type(s) of air conditioner in their home, the number installed, whether it was primarily used for cooling during the day, at night or both, and the approximate age of the air conditioner (s).

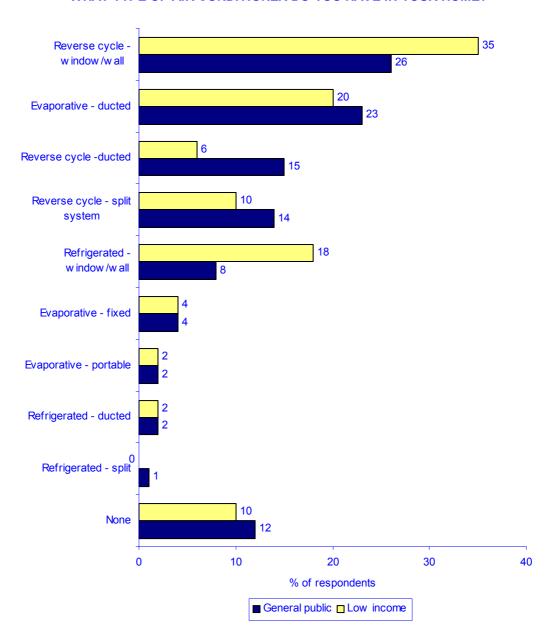
#### Type of Air Conditioner

- 3.1.2 Reverse cycle window/wall, evaporative ducted, reverse cycle split system, reverse cycle ducted and refrigerated window/wall were the most common types of air conditioning identified across both groups surveyed.
- 3.1.3 There were, however, a number of clear differences identified in air conditioner types that were in the homes of the low income segment compared to the general public.
- 3.1.4 The incidence of having window/wall air conditioners, both reverse cycle and refrigerated, was significantly higher among low income earners compared to the general public, as outlined:
  - Reverse cycle window/wall low income earners (35%), general public (26%)
  - Refrigerated window/wall low income earners (18%), general public (8%)
- 3.1.5 Conversely, a higher proportion of those from the general public indicated that they had ducted air conditioning installed, particularly reverse cycle ducted air conditioning general public (15%), low income earners (6%).



- 3.1.6 The likelihood of having reverse cycle split system air conditioning was also higher among those from the general public (14%, compared to low income earners 10%).
- 3.1.7 Interestingly, a marginally higher proportion of the general public (12%) indicated that they did not have air conditioning, compared to low income earners (10%).

#### WHAT TYPE OF AIR CONDITIONER DO YOU HAVE IN YOUR HOME?





#### Number of Air Conditioners Installed

3.1.8 The average number of air conditioners installed for all types of units for both segments ranged from 1.0 units to 1.7 units. There were less evaporative units installed, on average, than reverse cycle and refrigerative types of air conditioning.

3.1.9 There was little difference in the average number of each type of evaporative and reverse cycle air conditioning installed amongst the two segments, however, the number of each type of refrigerative air conditioning units installed was generally higher among the general public segment, as outlined:

Air Conditioner Type	Number Installed General Public	Number Installed Low Income		
Evaporative				
Portable	1.0	1.0		
Fixed	1.1	1.1		
Ducted	1.1	1.1		
Reverse Cycle (heat and cool)				
Window/Wall	1.3	1.1		
Split System	1.3	1.2		
Ducted (Multi Room)	1.2	1.0		
Refrigerative (cooling only)				
Window/Wall	1.2	1.2		
Split System	1.3	1.0		
Ducted (Multi room)	1.7	1.0		

#### Approximate Age of Air Conditioners

- 3.1.10 There was considerable variation in the age of the air conditioning units installed across both segments.
- 3.1.11 Where a sample size of more than 20 existed for both segments, the newest air conditioning units were reverse cycle split system air conditioners (average approximate age of 4.2 to 4.6 years), while the



oldest were refrigerative window/wall units (average approximate age of more than 14 years).

- 3.1.12 Reverse cycle window/ wall air conditioners also tended to be older, with an average approximate age of more than eleven years.
- 3.1.13 In general, the approximate age of the air conditioners installed among the low income segment tended to be older than those installed by the general public segment. There were, however, two exceptions, those being:
  - Refrigerative window/wall general public (15.4 years), low income
     (14.2 years)
  - Refrigerative ducted general public (8.0 years), low income (5.6 years)
- 3.1.14 The approximate ages for all air conditioner types for both segments are outlined in the table below.

Air Conditioner Type	Approximate Age General Public	Approximate Age Low Income
Evaporative		
Portable	1.0	6.8
Fixed	9.9	14.0
Ducted	8.0	8.9
Reverse Cycle (heat and cool)	•	
Window/Wall	11.7	12.4
Split System	4.2	4.6
Ducted (Multi Room)	6.4	10.1
Refrigerative (cooling only)	•	
Window/Wall	15.4	14.2
Split System	8.5	12.0
Ducted (Multi room)	8.0	5.6



#### Number of Rooms Serviced by Each Air Conditioner

- 3.1.15 Not surprisingly, ducted air conditioning was used to service the highest number of rooms. This was the case for each of the types of ducted air conditioning evaporative, reverse cycle and refrigerative.
- 3.1.16 Conversely, portable and window/wall air conditioners serviced the least number of rooms.
- 3.1.17 The number of rooms serviced by each type of air conditioner was similar for both segments, as outlined in the following table.

Air Conditioner Type	Number of Rooms Serviced General Public	Number of Rooms Serviced General Public		
Evaporative				
Portable	1.0	2.6		
Fixed	3.7	3.1		
Ducted	5.4	5.6		
Reverse Cycle (heat and cool)				
Window/Wall	2.7	2.8		
Split System	3.3	3.0		
Ducted (Multi Room)	5.7	5.6		
Refrigerative (cooling only)				
Window/Wall	1.9	2.5		
Split System	3.0	4.0		
Ducted (Multi room)	5.0	4.9		

#### Air Conditioner Usage

- 3.1.18 The air conditioning usage patterns between day, night and both day and night varied considerably depending on the type of air conditioner installed.
- 3.1.19 Where there was a reasonable sample size for each type of air conditioning among both the general public and low income segments



(at least 20 for each segment), the usage patterns for each air conditioner were, however, similar for each of these segments.

3.1.20 The day and night usage patterns for all air conditioning types for both segments are outlined in the following table.

Air Conditioner Type	Ge	neral Pub	olic	L	ow Incom	ie
	Day	Night	Both	Day	Night	Both
Evaporative						
Portable	50	13	38	43	43	14
Fixed	27	20	53	53	6	41
Ducted	28	8	63	23	10	67
Reverse Cycle (heat and cool)						
Window/Wall	28	18	54	34	18	49
Split System	27	25	47	17	27	56
Ducted (Multi Room)	19	29	53	21	17	63
Refrigerative (cooling only)						
Window/Wall	42	16	42	44	23	33
Split System	75	-	25	-	-	100
Ducted (Multi room)	57	-	43	50	-	50



Question 8a: Please indicate the number of Evaporative - Portable air conditioners you have in your home.

BASE: Have Evaporative Portable

Evaporative - Portable

TOTAL ----1.0 8

100.0%

Question 8a: Please indicate the number of Evaporative - Fixed air conditioners you have in your home.

BASE: Have Evaporative Fixed

Evaporative - Fixed 1.1 15

**Question 8a:** Please indicate the number of **Evaporative - Ducted** air conditioners you have in your home.

BASE: Have Evaporative Ducted

Evaporative - Ducted 1.1 95

Question 8a: Please indicate the number of Reverse cycle - Window/ Wall air conditioners you have in your home.

BASE: Have Reverse cycle window/ wall

Reverse cycle - Window/ Wall 1.3 107

Question 8a: Please indicate the number of Reverse cycle - Split system air conditioners you have in your home.

BASE: Have Reverse cycle split system

Reverse cycle - Split system 1.3 55



**Question 8a:** Please indicate the number of **Reverse Cycle Ducted (multi room)** air conditioners you have in your home.

BASE: Have Reverse cycle Ducted (multi room)

Reverse cycle - Ducted (multi room)

1.2
59

Question 8a: Please indicate the number of Refrigerative - Window/ Wall air conditioners you have in your home.

BASE: Have Refrigerative window/ wall

Refrigerative - Window/ Wall 1.2 31

**Question 8a:** Please indicate the number of **Refrigerative - Split system** air conditioners you have in your home.

BASE: Have Refrigerative Split system

Refrigerative - Split system 1.3 4

**Question 8a:** Please indicate the number of **Refrigerative - Ducted (multi room)** air conditioners you have in your home.

BASE: Have Refrigerative ducted (multi room)

Refrigerative - Ducted (multi room)

1.7
7



Question 8a: Please indicate the number of Evaporative - Portable air conditioners you have in your home.

BASE: Have Evaporative portable

Evaporative - Portable 1.0 5

**Question 8a:** Please indicate the number of **Evaporative - Fixed** air conditioners you have in your home.

BASE: Have Evaporative fixed

Evaporative - Fixed 1.1 15

**Question 8a:** Please indicate the number of **Evaporative - Ducted** air conditioners you have in your home.

BASE: Have Evaporative ducted

Evaporative - Ducted 1.1 75

Question 8a: Please indicate the number of Reverse cycle - Window/ Wall air conditioners you have in your home.

BASE: Have Reverse cycle window/ wall

Reverse cycle - Window/ Wall 1.1 1.34

Question 8a: Please indicate the number of Reverse cycle - Split system air conditioners you have in your home.

BASE: Have Reverse cycle split system

Reverse cycle - Split system 1.2 36



**Question 8a:** Please indicate the number of **Evaporative Ducted (multi room)** air conditioners you have in your home.

BASE: Have Reverse cycle ducted

Reverse cycle - Ducted (multi room)

1.0
23

Question 8a: Please indicate the number of Refrigerative - Window/ Wall air conditioners you have in your home.

BASE: Have Refrigerative window/ wall

Refrigerative - Window/ Wall 1.2 63

**Question 8a:** Please indicate the number of **Refrigerative - Split system** air conditioners you have in your home.

BASE: Have Refrigerative split system

Refrigerative - Split system 1.0 100.0%

Question 8a: Please indicate the number of Refrigerative - Ducted (multi room) air conditioners you have in your home.

BASE: have Refrigerative ducted

Refrigerative - Ducted (multi room)

1.0
8



Question 8b: Please indicate the number of rooms your Evaporative - Portable air conditioner/s service.

BASE: Have Evaporative Portable

TOTAL

1.0

Number of rooms serviced

100.0%

Question 8b: Please indicate the number of rooms your Evaporative - Fixed air conditioner/s service.

BASE: Have Evaporative Fixed

TOTAL

Number of rooms serviced 3.7

15

100.0%

Question 8b: Please indicate the number of rooms your Evaporative - Ducted air conditioner/s service.

BASE: Have Evaporative Ducted

TOTAL

Number of rooms serviced 5

100.0%

Question 8b: Please indicate the number of rooms your Reverse cycle - Window/ Wall air conditioner/s service.

BASE: Have Reverse cycle window/ wall

TOTAL

Number of rooms serviced 2.7

2.*1* 

100.0%

Question 8b: Please indicate the number of rooms your Reverse cycle - Split system air conditioner/s service.

BASE: Have Reverse cycle split system

TOTAL

Number of rooms serviced 3

3.3 55

100.0%



**Question 8b:** Please indicate the number of rooms your **Reverse cycle - Ducted (multi room)** air conditioner/s service.

BASE: Have Reverse cycle Ducted (multi room)

Number of rooms serviced 5.7 59

Question 8b: Please indicate the number of rooms your Refrigerative - Window/ Wall air conditioner/s service.

BASE: Have Refrigerative window/ wall

Number of rooms serviced 1.9 31

**Question 8b:** Please indicate the number of rooms your **Refrigerative - Split system** air conditioner/s service.

BASE: Have Refrigerative Split system

Number of rooms serviced 3.0 4

**Question 8b:** Please indicate the number of rooms your **Refrigerative - Ducted (multi room)**air conditioner/s service.

BASE: Have Refrigerative ducted (multi room)

Number of rooms serviced 5.0 7



Question 8b: Please indicate the number of rooms your Evaporative - Portable air conditioner/s service.

BASE: Have Evaporative portable

TOTAL

Number of rooms serviced 2.6

100.0%

Question 8b: Please indicate the number of rooms your Evaporative - Fixed air conditioner/s service.

BASE: Have Evaporative fixed

TOTAL

Number of rooms serviced 3.1

100.0%

**Question 8b:** Please indicate the number of rooms your **Evaporative - Ducted** air conditioner/s service.

BASE: Have Evaporative ducted

TOTAL

Number of rooms serviced 5

100.0%

**Question 8b:** Please indicate the number of rooms your **Reverse cycle - Window/ Wall** air conditioner/s service.

BASE: Have Reverse cycle window/ wall

TOTAL

Number of rooms serviced 2.8

100.0%

Question 8b: Please indicate the number of rooms your Reverse cycle - Split system air conditioner/s service.

BASE: Have Reverse cycle split system

TOTAL

Number of rooms serviced

3.0 36

100.0%



**Question 8b:** Please indicate the number of rooms your **Reverse cycle - Ducted (multi room)** air conditioner/s service.

BASE: Have Reverse cycle ducted

Number of rooms serviced 5.6 23

Question 8b: Please indicate the number of rooms your Refrigerative - Window/ Wall air conditioner/s service.

BASE: Have Refrigerative window/ wall

Number of rooms serviced 2.5 63

**Question 8b:** Please indicate the number of rooms your **Refrigerative - Split system** air conditioner/s service.

BASE: Have Refrigerative split system

Number of rooms serviced 4.0 1 100.0%

**Question 8b:** Please indicate the number of rooms your **Refrigerative - Ducted (multi room)** air conditioner/s service.

BASE: have Refrigerative ducted

Number of rooms serviced

4.9
8



Question 8d: Please indicate the approximate age of the Evaporative - Portable air conditioner you have

BASE: Have Evaporative Portable

Age of air conditioner 1.0 8

100.0%

Question 8d: Please indicate the approximate age of the Evaporative - Fixed air conditioner you have

BASE: Have Evaporative Fixed

Age of air conditioner 9.9 15

Question 8d: Please indicate the approximate age of the Evaporative - Ducted air conditioner you have

BASE: Have Evaporative Ducted

Age of air conditioner 8.0 95

Question 8d: Please indicate the approximate age of the Reverse cycle - Window/ Wall air conditioner you have

BASE: Have Reverse cycle window/ wall

Age of air conditioner 11.7 107

Question 8d: Please indicate the approximate age of the Reverse cycle - Split system air conditioner you have

BASE: Have Reverse cycle split system

Age of air conditioner 4.2 55



Question 8d: Please indicate the approximate age of the Reverse cycle - Ducted (multi room) air conditioner you have

BASE: Have Reverse cycle Ducted (multi room)

Age of air conditioner 6.4 59

Question 8d: Please indicate the approximate age of the Refrigerative - Window/ Wall air conditioner you have

BASE: Have Refrigerative window/ wall

Age of air conditioner 15.4 31

Question 8d: Please indicate the approximate age of the Refrigerative - Split system air conditioner you have

BASE: Have Refrigerative Split system

Age of air conditioner 8.5 4

**Question 8d:** Please indicate the approximate age of the **Refrigerative - Ducted (multi room)**air conditioner you have

BASE: Have Refrigerative ducted (multi room)

Age of air conditioner 8.0 7



Question 8d: Please indicate the approximate age of the Evaporative - Portable air conditioner you have

BASE: Have Evaporative portable

TOTAL

Age of air conditioner 6.8

100.0%

Question 8d: Please indicate the approximate age of the Evaporative - Fixed air conditioner you have

BASE: Have Evaporative fixed

TOTAL

Age of air conditioner 14.0

100.0%

Question 8d: Please indicate the approximate age of the Evaporative - Ducted air conditioner you have

BASE: Have Evaporative ducted

TOTAL

Age of air conditioner 8

100.0%

Question 8d: Please indicate the approximate age of the Reverse cycle - Window/ Wall air conditioner you have

BASE: Have Reverse cycle window/ wall

TOTAL

Age of air conditioner 12.4

134

100.0%

Question 8d: Please indicate the approximate age of the Reverse cycle - Split system air conditioner you have

BASE: Have Reverse cycle split system

TOTAL

Age of air conditioner

4.6

100.0%



**Question 8d:** Please indicate the approximate age of the **Reverse cycle - Ducted (multi room)** air conditioner you have

BASE: Have Reverse cycle ducted

Age of air conditioner 10.1 23

100.0%

Question 8d: Please indicate the approximate age of the Refrigerative - Window/ Wall air conditioner you have

BASE: Have Refrigerative window/ wall

Age of air conditioner 14.2 63

Question 8d: Please indicate the approximate age of the Refrigerative - Split system air conditioner you have

BASE: Have Refrigerative split system

Age of air conditioner 12.0 1 100.0%

**Question 8d:** Please indicate the approximate age of the **Refrigerative - Ducted (multi room)**air conditioner you have

BASE: have Refrigerative ducted

Age of air conditioner 5.6 8



**Question 8c:** Please indicate when your **Evaporative - Portable** air conditioner is used? **BASE:** Have Evaporative Portable

	TOTAL
Day	4 50%
Night	1 13%
Both	3 38%
No. of Respondents	8 100%

**Question 8c:** Please indicate when your **Evaporative - Fixed** air conditioner is used? **BASE:** Have Evaporative Fixed

Day	TOTAL 4 27%
Night	3 20%
Both	8 53%
No. of Respondents	15 100%

**Question 8c:** Please indicate when your **Evaporative - Ducted** air conditioner is used? BASE: Have Evaporative Ducted

	TOTAL
Day	27 28%
Night	8 8%
Both	60 63%
No. of Respondents	95 100%



**Question 8c:** Please indicate when your **Reverse cycle - Window/ Wall** air conditioner is used? BASE: Have Reverse cycle window/ wall

Day	TOTAL 30 28%
Night	19 18%
Both	58 54%
No. of Respondents	107 100%

**Question 8c:** Please indicate when your **Reverse cycle - Split system** air conditioner is used? BASE: Have Reverse cycle split system

	TOTAL
Day	15 27%
Night	14 25%
Both	26 47%
No. of Respondents	55 100%

Question 8c: Please indicate when your Reverse cycle - Ducted (multi room) air conditioner is used? BASE: Have Reverse cycle Ducted (multi room)

Day	TOTAL  11 19%
Night	17 29%
Both	31 53%
No. of Respondents	59 100%



**Question 8c:** Please indicate when your **Refrigerative - Window/ Wall** air conditioner is used? BASE: Have Refrigerative window/ wall

Day	TOTAL ——— 13 42%
Night	5 16%
Both	13 42%
No. of Respondents	31 100%

**Question 8c:** Please indicate when your **Refrigerative - Split system** air conditioner is used? BASE: Have Refrigerative Split system

	TOTAL
Day	3 75%
Night	0 0%
Both	1 25%
No. of Respondents	4 100%

Question 8c: Please indicate when your Refrigerative - Ducted (multi room) air conditioner is used? BASE: Have Refrigerative ducted (multi room)

	TOTAL ——
Day	4 57%
Night	0 0%
Both	3 43%
No. of Respondents	7 100%



**Question 8c:** Please indicate when your **Evaporative - Portable** air conditioner is used? **BASE: Have Evaporative portable** 

Day	TOTA
All-la	43%
Night	43%
Both	1 14%
No. of Respondents	7 100%

**Question 8c:** Please indicate when your **Evaporative - Fixed** air conditioner is used? **BASE:** Have Evaporative fixed

Day	TOTAL —— 9 53%
Night	1 6%
Both	7 41%
No. of Respondents	17 100%

**Question 8c:** Please indicate when your **Evaporative - Ducted** air conditioner is used? **BASE:** Have Evaporative ducted

	TOTAL
Day	19 23%
Night	8 10%
Both	55 67%
No. of Respondents	82 100%



**Question 8c:** Please indicate when your **Reverse cycle - Window/ Wall** air conditioner is used? BASE: Have Reverse cycle window/ wall

Day	TOTAL ————————————————————————————————————
Night	25 18%
Both	69 49%
No. of Respondents	142 100%

**Question 8c:** Please indicate when your **Reverse cycle - Split system** air conditioner is used? BASE: Have Reverse cycle split system

	TOTAL
Day	7 17%
Night	11 27%
Both	23 56%
No. of Respondents	41 100%

**Question 8c:** Please indicate when your **Reverse cycle - Ducted (multi room)** air conditioner is used? **BASE:** Have Reverse cycle ducted

	TOTAI
Day	5 21%
Night	4 17%
Both	15 63%
No. of Respondents	24 100%



**Question 8c:** Please indicate when your **Refrigerative - Window/ Wall** air conditioner is used? **BASE:** Have Refrigerative window/ wall

Day	TOTAL 31 44%
Night	16 23%
Both	23 33%
No. of Respondents	70 100%

**Question 8c:** Please indicate when your **Refrigerative - Split system** air conditioner is used? **BASE:** Have Refrigerative split system

	TOTA
Day	0%
Night	0 0%
Both	1 100%
No. of Respondents	1 100%

**Question 8c:** Please indicate when your **Refrigerative - Ducted (multi room)** air conditioner is used? **BASE:** Have Refrigerative ducted

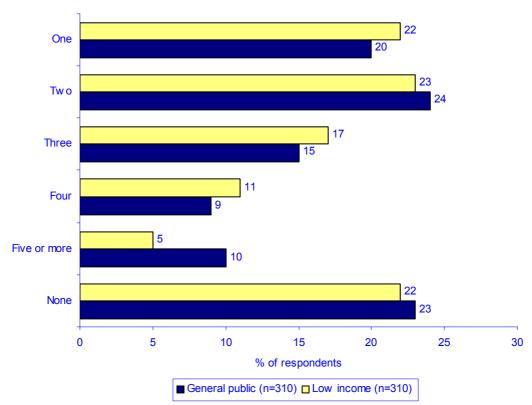
	TOTA
Day	4 50%
Night	0 0%
Both	4 50%
No. of Respondents	8 100%

### 3.2 Fans - Number and Usage

### Number of Fans

- 3.2.1 Respondents were asked how many fans (ceiling or portable) they had in their home.
- 3.2.2 There were similar numbers of fans installed in the homes of both the general public and low income segments. The most common number of fans installed for both groups were:
  - > One general public (20%), low income segment (22%)
  - > Two general public (24%), low income segment (23%)
  - None general public (23%), low income segment (22%)

### HOW MANY FANS (CEILING OR PORTABLE) DO YOU HAVE IN YOUR HOME?

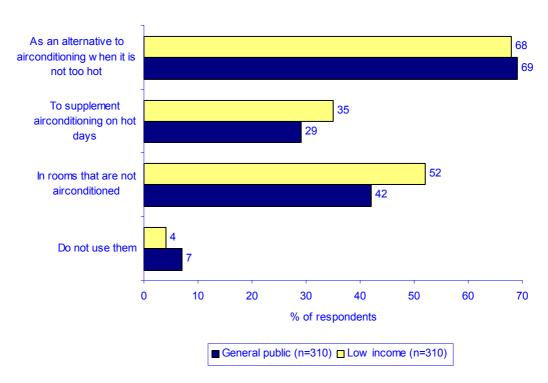




### Use of Fans

- 3.2.3 Those who indicated that they had fans in their home were read a number of ways in which the fans may be used and asked which of these applied to their home.
- 3.2.4 More than two thirds of these respondents from both segments indicated that they use fans as an alternative to air conditioning when it is not too hot general public (69%), low income (68%).
- 3.2.5 There were, however, higher proportions from the low income segment who indicated that they used fans to supplement air conditioning on hot days and in rooms that are not air conditioned, as outlined:
  - To supplement air conditioning on hot days general public (29%), low income segment (35%)
  - In rooms that are not air conditioned general public (42%), low income segment (52%)

### DO YOU USE THE FANS .....?





Question 9: How many fans (ceiling or portable) do you have in your home?

	TOTAL
1 fan	79 20%
2 fans	98 24%
3 fans	59 15%
4 fans	35 9%
5 fans or more	39 10%
None	95 23%
No. of Respondents	405 100%



Question 9: How many fans (ceiling or portable) do you have in your home?

	TOTAL
1 fan	86 22%
2 fans	92 23%
3 fans	67 17%
4 fans	43 11%
5 fans or more	22 5%
None	90 22%
No. of Respondents	400 100%



**Question 10:** Do you use the fans? **READ OUT, multiple response** 

### BASE: Have ceiling fans

	TOTAL
As an alternative to air conditioning when not too hot	n 214 69%
To supplement air conditioning on hot days	90 29%
In rooms that are not air conditioned	129 42%
Don't use them	21 7%
No. of Respondents	310 100%



**Question 10:** Do you use the fans? **READ OUT, multiple response** 

### BASE: Have ceiling fans

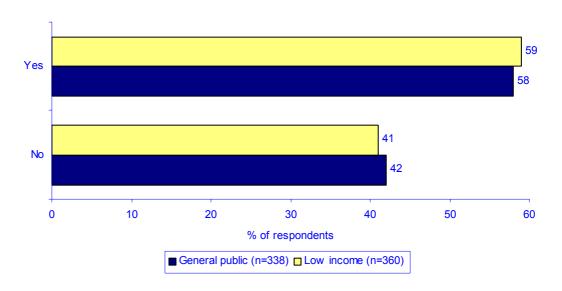
	TOTAL
As an alternative to air conditioning when not too hot	210 68%
To supplement air conditioning on hot days	107 35%
In rooms that are not air conditioned	161 52%
Don't use them	13 4%
No. of Respondents	310 100%

### 3.3 Air Conditioner Thermostats

### Incidence of Having Thermostat Settings on Air Conditioners

- 3.3.1 Those surveyed were asked if they had a thermostat setting on any of their air conditioners.
- 3.3.2 The incidence of having thermostat settings on air conditioners was relatively high for both the general public and low income segments, as outlined:
  - Have a thermostat setting general public (58%), low income segment (59%)
  - ➤ Do not have a thermostat setting general public (42%), low income segment (41%)

### DO YOU HAVE A THERMOSTAT SETTING ON ANY OF YOUR AIR CONDITIONERS?



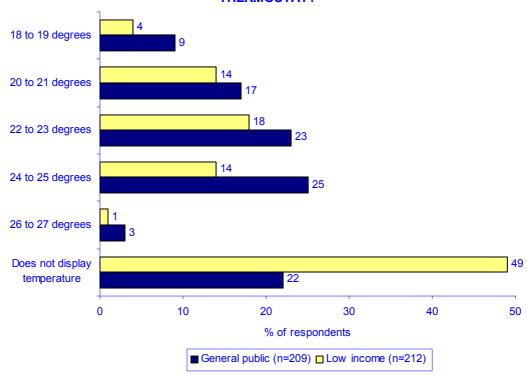
### **Temperature Setting of Thermostat**

3.3.3 Those who indicated that any of their air conditioners had a thermostat were asked, during a normal summer, what was the usual temperature setting of their air conditioner thermostat.



- 3.3.4 The main finding was that a significantly higher proportion of the low income segment (49%, compared to the general public segment, 22%) indicated that their thermostat did not display the temperature.
- 3.3.5 As a consequence, there were higher proportions of the general public segment who named each of the defined temperature ranges, particularly the 24 to 25 degree range, as outlined:
  - ➤ 18 to 19 degrees general public (9%), low income segment (4%)
  - > 20 to 21 degrees general public (17%), low income segment (14%)
  - > 22 to 23 degrees general public (23%), low income segment (18%)
  - 24 to 25 degrees general public (25%), low income segment (14%)
  - > 26 to 27 degrees general public (3%), low income segment (1%)

# DURING A NORMAL SUMMER, WHAT IS THE USUAL TEMPERATURE SETTING OF YOUR AIR CONDITIONER THERMOSTAT?

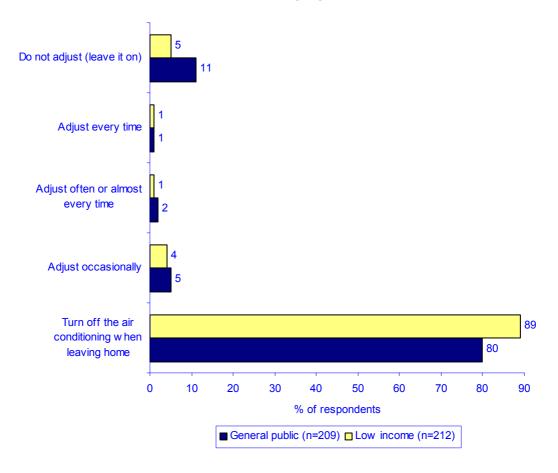




### Adjustment of the Thermostat Setting When Leaving Home

- 3.3.6 Those who indicated that any of their air conditioners had a thermostat were then asked if they adjusted the thermostat setting when leaving home.
- 3.3.7 The overwhelming majority of these respondents from both segments indicated that they turn off the air conditioner when leaving home general public (80%), low income (89%).
- 3.3.8 Some of the general public segment (11%, compared to 5% of the low income segment indicated that they do not adjust the thermostat (leave it on), while small proportions from both segments adjusted the thermostat at other frequencies every time, often or almost every time, or occasionally.

### DO YOU ADJUST THE THERMOSTAT SETTING WHEN LEAVING HOME?

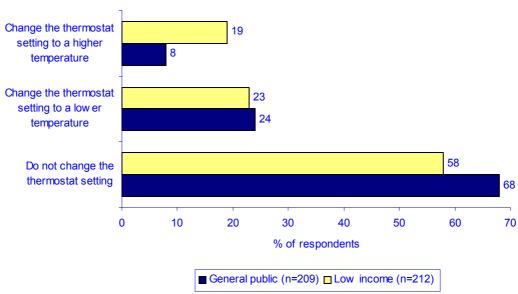




### Adjustment of the Thermostat Setting on Very Hot Days

- 3.3.9 Those who indicated that any of their air conditioners had a thermostat were then read a number of options in relation to changing their thermostat setting on very hot days.
- 3.3.10 The majority of respondents from both segments indicated that they did not change the thermostat setting on very hot days. This response was, however, more common among those in the general public segment general public (68%), low income (58%).
- 3.3.11 Conversely, a higher proportion of low income earners (19%, compared to the general public, 8%) indicated that they changed the thermostat to a higher temperature on such days.
- 3.3.12 Similar proportions from both groups stated that they change the thermostat to a lower temperature on very hot days general public (24%), low income (23%).

### ON VERY HOT DAYS DO YOU .....?





**Question 11:** Do you have a thermostat setting on any of your air conditioners?

### BASE: have air conditioning

	TOTA
Yes	196 58%
No	142 42%
No. of Respondents	338 100%

### ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS- MAY 2004

**Question 11:** Do you have a thermostat setting on any of your air conditioners?

### BASE: Have air conditioning

	TOTA
Yes	212 59%
No	148 41%
No. of Respondents	360 100%



## **Question 12:** During a normal summer, what is the (usual) temperature setting of your air conditioner thermostat? **READ OUT**

### BASE: Have thermostat

	TOTAL
18-19 degrees	19 9%
20-21 degrees	35 17%
22-23 degrees	49 23%
24-25 degrees	52 25%
26-27 degrees	7 3%
28-29 degrees	1 0%
30-31 degrees	0 0%
Does not display temperature	46 22%
No. of Respondents	209 100%



**Question 12:** During a normal summer, what is the (usual) temperature setting of your air conditioner thermostat? **READ OUT** 

### BASE: Have thermostat

	TOTAL
18-19 degrees	8 4%
20-21 degrees	29 14%
22-23 degrees	38 18%
24-25 degrees	30 14%
26-27 degrees	3 1%
28-29 degrees	0 0%
30-31 degrees	0 0%
Does not display temperature	104 49%
No. of Respondents	212 100%



# **Question 13:** Do you adjust the thermostat setting when leaving home? **READ OUT**

### BASE: Have thermostat

	TOTAL
Do not adjust (leave it on)	23 11%
Adjust every time	3 1%
Adjust often or almost every time	4 2%
Adjust occasionally	10 5%
Turn off the air conditioning when leaving home	168 80%
Other	1 0%
No. of Respondents	209 100%



# **Question 13:** Do you adjust the thermostat setting when leaving home? **READ OUT**

### BASE: Have thermostat

	TOTAL
Do not adjust (leave it on)	10 5%
Adjust every time	2 1%
Adjust often or almost every time	2 1%
Adjust occasionally	9 4%
Turn off the air conditioning when leaving home	188 89%
Other	1 0%
No. of Respondents	212 100%



**Question 14:** On very hot days do you..... **READ OUT** 

### BASE: Have thermostat

Change the thermostat setting to a higher temperature

Change the thermostat setting to a lower temperature

Change the thermostat setting to a lower temperature

Do not change thermostat setting

143
68%

No. of Respondents

209
100%

### **ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS- MAY 2004**

**Question 14:** On very hot days do you..... **READ OUT** 

### BASE: Have thermostat

	TOTAI
Change the thermostat setting to a higher temperature	- 40 19%
Change the thermostat setting to a lower temperature	49 23%
Do not change thermostat setting	123 58%
No. of Respondents	212 100%

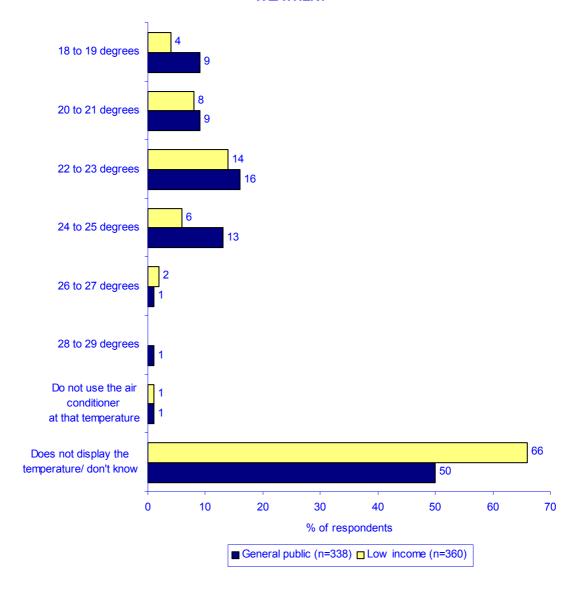


### 3.4 Setting the Air Conditioner Temperature

- 3.4.1 Respondents were asked at what temperature they normally set their air conditioner on a 35 degree plus day, or during a period of prolonged hot weather.
- 3.4.2 As was the case with thermostats, a higher proportion of those surveyed from the low income segment (66%, compared to the general public, 50%) indicated that their air conditioner did not display the temperature.
- 3.4.3 As a result, higher proportions of those from the general public named most temperature ranges at which they set their air conditioner on such hot days, or in a prolonged period of hot weather, as outlined:
  - ➤ 18 to 19 degrees general public (9%), low income segment (4%)
  - > 20 to 21 degrees general public (9%), low income segment (8%)
  - > 22 to 23 degrees general public (16%), low income segment (14%)
  - > 24 to 25 degrees general public (13%), low income segment (6%)
  - ≥ 26 to 27 degrees general public (1%), low income segment (2%)
  - > 28 to 29 degrees general public (1%), low income segment (0%)
- 3.4.4 There was also a very low proportion from each segment (1% for both) who stated that they do not use the air conditioner at that temperature.



# AT WHAT TEMPERATURE DO YOU SET YOUR AIR CONDITIONER ON A 35 DEGREE PLUS DAY, OR DURING A PERIOD OF PROLONGED HOT WEATHER?





**Question 15:** At what temperature do you normally set your air conditioner on a 35+ degree day, or during a period of prolonged hot weather?

#### **READ OUT**

#### BASE: have air conditioning

	TOTAL
22-23 degrees	54 16%
24-25 degrees	44 13%
18-19 degrees	30 9%
20-21 degrees	29 9%
26-27 degrees	5 1%
28-29 degrees	4 1%
30-31 degrees	1 0%
Don't know/ Does not display tempera	ture 169 50%
Don't use air conditioner at that temperature	2 1%
No. of Respondents	338 100%



**Question 15:** At what temperature do you normally set your air conditioner on a 35+ degree day, or during a period of prolonged hot weather?

#### **READ OUT**

#### BASE: Have air conditioning

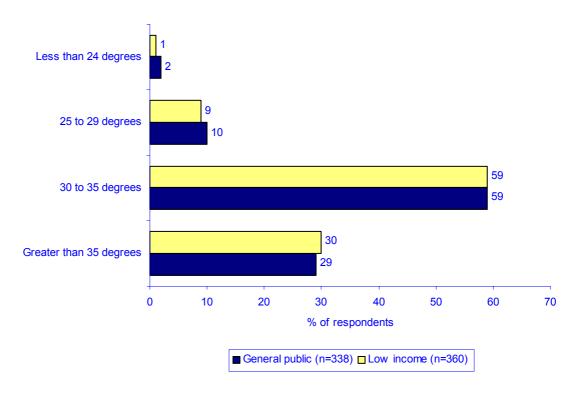
	TOTAL
22-23 degrees	49 14%
20-21 degrees	29 8%
24-25 degrees	20 6%
18-19 degrees	14 4%
26-27 degrees	7 2%
28-29 degrees	1 0%
30-31 degrees	0 0%
Don't know/ Does not display temperate	ure 237 66%
Don't use air conditioner at that temperature	3 1%
No. of Respondents	360 100%



#### 3.5 Temperature at Which Air Conditioners are Started

- 3.5.1 Those surveyed were asked at what outside temperature range they usually start to use their air conditioner system for cooling.
- 3.5.2 The range of 30 to 35 degrees was clearly the most common outside temperature range at which air conditioners are usually started for cooling. The results for both segments were also almost identical, as outlined:
  - Less than 24 degrees general public (2%), low income segment (1%)
  - > 25 to 29 degrees general public (10%), low income segment (9%)
  - > 30 to 35 degrees general public (59%), low income segment (59%)
  - ➤ Greater than 35 degrees general public (29%), low income segment (30%)

# AT WHAT OUTSIDE TEMPERATURE RANGE DO YOU USUALLY START TO USE YOUR AIR CONDITIONING SYSTEM FOR COOLING?





**Question 16:** At what (outside) temperature range do you usually start to use your air conditioning system for cooling? **READ OUT** 

#### BASE: have air conditioning

	TOTAL
Less than 24 degrees	8 2%
25-29 degrees	33 10%
30 to 35 degrees	200 59%
Greater than 35 degrees	97 29%
No. of Respondents	338 100%

#### ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS- MAY 2004

**Question 16:** At what (outside) temperature range do you usually start to use your air conditioning system for cooling? **READ OUT** 

#### BASE: Have air conditioning

	TOTAL
Less than 24 degrees	5 1%
25-29 degrees	33 9%
30 to 35 degrees	214 59%
Greater than 35 degrees	108 30%
No. of Respondents	360 100%

### 3.6 Duration of Air Conditioner Use

### Average Number of Days that Air Conditioners are Used in

#### Summer

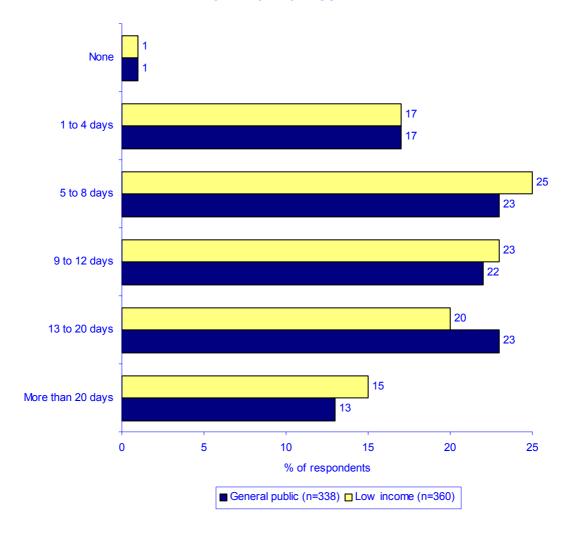
- 3.6.1 Respondents were asked, thinking about the last few summers in South Australia, how many days per month, on average, they used their air conditioners.
- 3.6.2 There was a relatively even spread of ranges of days in which air conditioning was used. These ranges were used were also almost identical for both segments, as outlined:
  - None general public (1%), low income segment (1%)
  - One to Four days general public (17%), low income segment (17%)
  - Five to eight days general public (23%), low income segment(25%)
  - Nine to twelve days general public (22%), low income segment (23%)
  - Thirteen to twenty days general public (23%), low income segment (20%)
  - More than twenty days general public (13%), low income segment (15%)
- 3.6.3 The average number of days that air conditioners were in use was calculated using the mid point for each of the above ranges as outlined below, and weighting the proportional responses.
  - One to Four days 2.5 days
  - Five to eight days 6.5 days
  - Nine to twelve days 10.5 days
  - Thirteen to twenty days 16.5 days



#### More than twenty days - 25 days

3.6.4 Based on these calculations, the average number of days per month that air conditioners were in use for each segment was identical at 11.5 days per month.

# THINKING ABOUT THE LAST FEW SUMMERS IN SOUTH AUSTRALIA, HOW MANY DAYS PER MONTH, ON AVERAGE, DO YOU USE YOUR AIR CONDITIONING IN SUMMER?





### Air Conditioner Usage During Average Temperature Summer

#### **Weekdays**

3.6.5

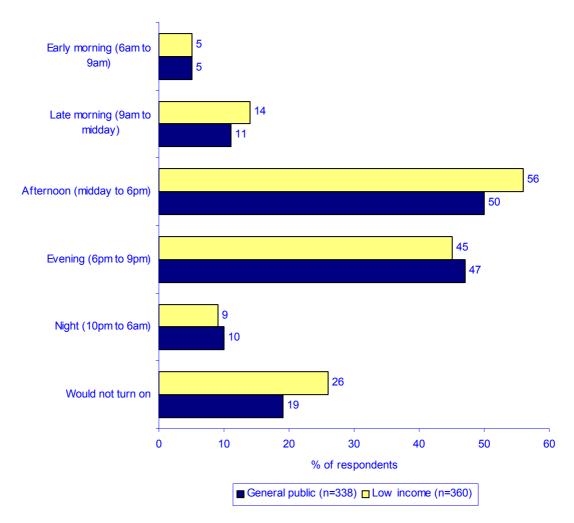
Those surveyed were asked what periods their air conditioning system(s) were normally operating during average temperature summer weekdays, both in their main living areas and in their main sleeping areas.

#### **Main Living Areas**

- 3.6.6 There were similar air conditioning usage patterns identified among both segments in these circumstances, with the afternoon and evening clearly the most common times at which air conditioners were in use.
- 3.6.7 There were, however, higher incidences of the low income segment operating their air conditioners in the afternoon, or not switching them on at all, as outlined:
  - Early morning (6am to 9am) general public (5%), low income segment (5%)
  - ➤ Late morning (9am to midday) general public (11%), low income segment (14%)
  - Afternoon (midday to 6pm) general public (50%), low income segment (56%)
  - > Evening (6pm to 10pm) general public (47%), low income segment (45%)
  - Night (10pm to 6am) general public (10%), low income segment (9%)
  - Would not turn on general public (19%), low income segment (26%)



# WHAT PERIODS IS/ARE YOUR AIR CONDITIONING SYSTEMS NORMALLY OPERATING DURING AVERAGE TEMPERATURE SUMMER WEEKDAYS IN YOUR MAIN LIVING AREAS?



#### **Main Sleeping Areas**

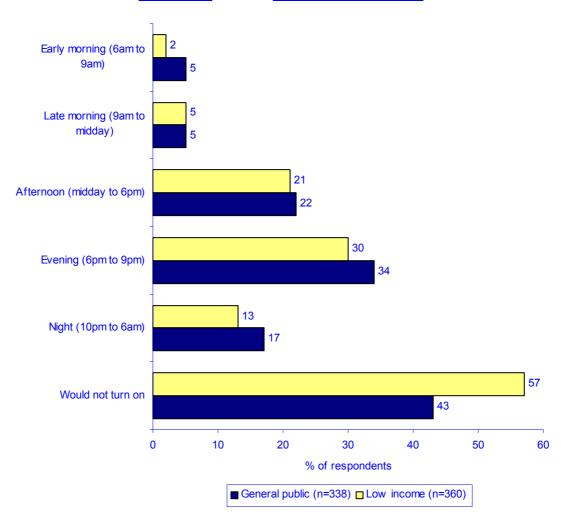
3.6.8 The main times at which air conditioners were operating in the main sleeping areas were from 6pm to 10pm, and midday to 6pm.

3.6.9 The most significant variance between the segments in relation to air conditioning usage in the main sleeping areas on average temperature summer weekdays was that there was a higher proportion of those from the low income segment who indicated that they would not turn their air conditioner on (57%, compared to 43% for the general public segment). The other responses were relatively similar, as outlined:



- Early morning (6am to 9am) general public (5%), low income segment (2%)
- Late morning (9am to midday) general public (5%), low income segment (5%)
- Afternoon (midday to 6pm) general public (22%), low income segment (21%)
- > Evening (6pm to 10pm) general public (34%), low income segment (30%)
- Night (10pm to 6am) general public (17%), low income segment (13%)

# WHAT PERIODS IS/ARE YOUR AIR CONDITIONING SYSTEMS NORMALLY OPERATING DURING AVERAGE TEMPERATURE SUMMER WEEKDAYS IN YOUR MAIN SLEEPING AREAS?





### Air Conditioner Usage During Summer Heat Wave Periods on

#### **Weekdays**

3.6.10 Respondents were asked what periods their air conditioning system(s) were normally operating during summer heat wave periods on weekdays, both in their main living areas and in their main sleeping areas.

#### **Main Living Areas**

3.6.11 The impact of summer heatwave conditions is to significantly increase the proportion of those using their air conditioner across all periods of the day in their main living areas. This is evidenced by the fact that very low proportions (4% of the general public and 2% of the low income segment) stated that they would not turn their air conditioner on during these periods. This compares to 19% and 26% respectively for average temperature summer weekdays.

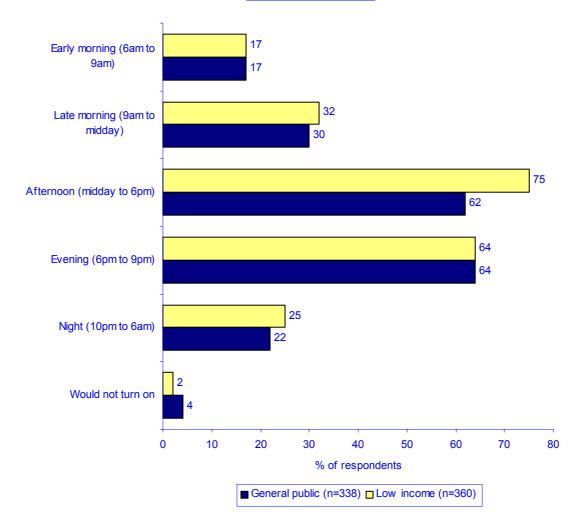
#### 3.6.12 The results for all periods of the day were:

- Early morning (6am to 9am) general public (17%), low income segment (17%)
- Late morning (9am to midday) general public (30%), low income segment (32%)
- Afternoon (midday to 6pm) general public (62%), low income segment (75%)
- > Evening (6pm to 10pm) general public (64%), low income segment (64%)
- Night (10pm to 6am) general public (22%), low income segment (25%)
- 3.6.13 These results show that a higher proportion of those from the low income segment (75%, compared to the general public, 62%) use their



air conditioner in main living areas in the afternoon in these summer heatwave conditions.

# WHAT PERIODS IS/ARE YOUR AIR CONDITIONING SYSTEMS NORMALLY OPERATING DURING SUMMER HEATWAVE PERIODS IN YOUR MAIN LIVING AREAS?



#### Main Sleeping Areas

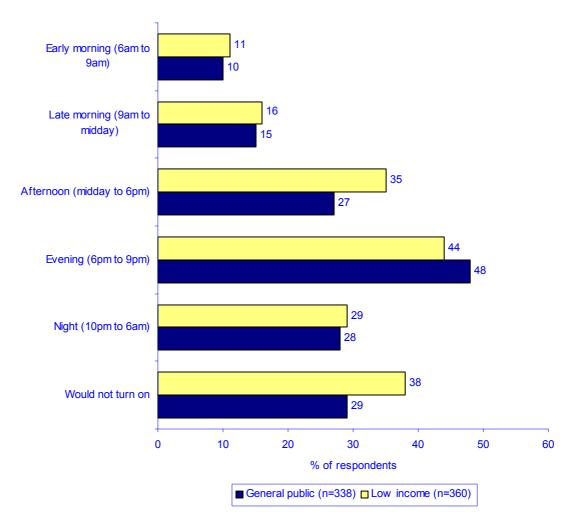
There was also a corresponding increase in the proportion of those using their air conditioner across all periods of the day in their main sleeping areas in summer heatwave periods. This is again evidenced by the fact that lower proportions (29% of the general public and 38% of the low income segment) stated that they would not turn their air conditioner on during these periods. This compares to 43% and 57% respectively for average temperature summer weekdays.



## 3.6.15 The results for each period of the day were:

- Early morning (6am to 9am) general public (10%), low income segment (11%)
- Late morning (9am to midday) general public (15%), low income segment (16%)
- Afternoon (midday to 6pm) general public (27%), low income segment (35%)
- > Evening (6pm to 10pm) general public (48%), low income segment (44%)
- Night (10pm to 6am) general public (28%), low income segment (29%)

# WHAT PERIODS IS/ARE YOUR AIR CONDITIONING SYSTEMS NORMALLY OPERATING DURING SUMMER HEATWAVE PERIODS IN YOUR MAIN SLEEPING AREAS?





**Question 17:** Thinking about the last few summers in South Australia, on average, how many days per month do you use your air conditioning in summer?

#### **READ OUT**

BASE: have air conditioning

	-
0 days	TOTAL 4 1%
1-4 days	58 17%
5-8 days	79 23%
9-12 days	73 22%
13-20 days	79 23%
more than 20 days	45 13%
No. of Respondents	338 100%

#### **ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS- MAY 2004**

**Question 17:** Thinking about the last few summers in South Australia, on average, how many days per month do you use your air conditioning in summer?

#### **READ OUT**

BASE: Have air conditioning

TOTAL

	IOIAL
0 days	2 1%
1-4 days	60 17%
5-8 days	90 25%
9-12 days	83 23%
13-20 days	71 20%
more than 20 days	54 15%
No. of Respondents	360 100%



**Question 18a:** What periods is/ are your air conditioning system(s) normally operating during <u>average temperature</u> <u>summer weekdays</u> in your <u>main living areas?</u> **READ OUT** 

#### BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	16 5%
Late morning (9am-12pm)	37 11%
Afternoon (12pm-6pm)	170 50%
Evening (6pm-10pm)	160 47%
Night (10pm-5am)	34 10%
Would not turn on	64 19%
No. of Respondents	338 100%



**Question 18a:** What periods is/ are your air conditioning system(s) normally operating during <u>average temperature</u> <u>summer weekdays</u> in your <u>main living areas?</u> **READ OUT** 

#### BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	19 5%
Late morning (9am-12pm)	51 14%
Afternoon (12pm-6pm)	200 56%
Evening (6pm-10pm)	163 45%
Night (10pm-5am)	34 9%
Would not turn on	95 26%
No. of Respondents	360 100%



Question 18b: What periods is/ are your air conditioning system(s) normally operating during <u>average temperature</u> <u>summer weekdays</u> in your <u>main sleeping areas?</u>
READ OUT

#### BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	17 5%
Late morning (9am-12pm)	17 5%
Afternoon (12pm-6pm)	74 22%
Evening (6pm-10pm)	114 34%
Night (10pm-5am)	56 17%
Would not turn on	145 43%
No. of Respondents	338 100%



Question 18b: What periods is/ are your air conditioning system(s) normally operating during <u>average temperature</u> <u>summer weekdays</u> in your <u>main sleeping areas?</u>
READ OUT

#### BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	8 2%
Late morning (9am-12pm)	19 5%
Afternoon (12pm-6pm)	76 21%
Evening (6pm-10pm)	109 30%
Night (10pm-5am)	47 13%
Would not turn on	205 57%
No. of Respondents	360 100%



Question 19a: What periods is/ are your air conditioning system(s) normally operating during <a href="mailto:summer heat wave periods">summer heat wave periods</a> on <a href="mailto:weekdays">weekdays</a> in your main living areas?

READ OUT

#### BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	56 17%
Late morning (9am-12pm)	101 30%
Afternoon (12pm-6pm)	211 62%
Evening (6pm-10pm)	215 64%
Night (10pm-5am)	76 22%
Would not turn on	12 4%
No. of Respondents	338 100%



**Question 19a:** What periods is/ are your air conditioning system(s) normally operating during <u>summer heat wave</u> <u>periods</u> on <u>weekdays</u> in your <u>main living areas?</u> **READ OUT** 

#### BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	60 17%
Late morning (9am-12pm)	117 32%
Afternoon (12pm-6pm)	270 75%
Evening (6pm-10pm)	230 64%
Night (10pm-5am)	89 25%
Would not turn on	7 2%
No. of Respondents	360 100%



Question 19b: What periods is/ are your air conditioning system(s) normally operating during <a href="mailto:summer heat wave periods">summer heat wave periods</a> on <a href="mailto:weekdays">weekdays</a> in your main sleeping areas?

READ OUT

#### BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	33 10%
Late morning (9am-12pm)	50 15%
Afternoon (12pm-6pm)	92 27%
Evening (6pm-10pm)	161 48%
Night (10pm-5am)	94 28%
Would not turn on	97 29%
No. of Respondents	338 100%



Question 19b: What periods is/ are your air conditioning system(s) normally operating during <u>summer heat wave</u> <u>periods</u> on <u>weekdays</u> in your <u>main sleeping areas?</u>
READ OUT

#### BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	39 11%
Late morning (9am-12pm)	59 16%
Afternoon (12pm-6pm)	126 35%
Evening (6pm-10pm)	157 44%
Night (10pm-5am)	106 29%
Would not turn on	135 38%
No. of Respondents	360 100%



# 3.7 Air Conditioner Use at Different Temperature Scenarios

- 3.7.1 Those surveyed were asked about their air conditioner usage, specifically, on what days they would turn their air conditioner on, and at what time, for two different temperature scenarios, namely:
  - Five consecutive days of 30 degrees Celsius
  - Five consecutive days of 35 degrees Celsius

#### Five Consecutive Days of 30 Degrees Celsius

- 3.7.2 The air conditioning usage patterns among both the general public and low income segments were almost identical during five consecutive days of 30 degrees Celsius temperature.
- 3.7.3 Midday to 6pm was the most common time at which air conditioning was turned on by both groups (although by a slightly higher proportion from the low income segment).
- 3.7.4 There was also a trend among those from both segments to turn their air conditioning on earlier in day (9am to midday, and midday to 6pm) as the number of consecutive days of 30 degree temperature increased.
- 3.7.5 The proportions who indicated that they would not turn their air conditioning on over the five days decreased from almost half on day one to approximately one quarter on day five for both segments. This decrease also followed a very similar trend for these segments.
- 3.7.6 The results for both of these segments are outlined in the following tables.



#### **General Public Segment**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	4%	3%	3%	4%	4%
9am to midday	7%	9%	13%	14%	12%
Midday to 6pm	28%	33%	37%	37%	38%
6pm to 10pm	13%	14%	17%	17%	18%
10pm to 6am	1%	1%	1%	1%	1%
Would not turn on	48%	39%	30%	27%	26%

### Low Income Segment

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	5%	6%	6%	8%	8%
9am to midday	8%	9%	11%	13%	13%
Midday to 6pm	33%	38%	43%	42%	43%
6pm to 10pm	7%	8%	8%	10%	9%
10pm to 6am	0%	0%	0%	0%	1%
Would not turn on	47%	39%	31%	27%	26%

## Five Consecutive Days of 35 Degrees Celsius

- 3.7.7 The air conditioning usage for five consecutive days of 35 degree

  Celsius temperatures somewhat mirrored that outlined for the five

  consecutive days of 30 degree Celsius temperatures above, that is:
  - Midday to 6pm was the most common time that air conditioning was turned on across all five days for both groups - again by slightly higher proportions from the low income segment
  - Air conditioning was turned on earlier in the day by both groups as the number of consecutive days of 35 degree temperature increased
  - The proportions who indicated that they would not turn their air conditioning on also decreased considerably over the five day period, although in the case of these 35 degree Celsius temperatures, significantly lower proportions (than for the 30



degree Celsius temperatures) stated that they would not turn their air conditioning on for each of the five days

# **General Public Segment**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	9%	11%	13%	14%	14%
9am to midday	21%	22%	25%	26%	28%
Midday to 6pm	35%	39%	38%	37%	37%
6pm to 10pm	15%	17%	18%	18%	18%
10pm to 6am	1%	1%	0%	1%	0%
Would not turn on	19%	10%	5%	3%	3%

# Low Income Segment

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	12%	11%	14%	16%	17%
9am to midday	19%	22%	25%	26%	25%
Midday to 6pm	40%	43%	45%	43%	43%
6pm to 10pm	8%	8%	9%	10%	10%
10pm to 6am	0%	0%	0%	1%	1%
Would not turn on	20%	15%	7%	5%	4%



Question 20a: If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on day one would you turn on your air conditioner?

BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	12 4%
Late morning (9am - 12pm)	24 7%
Afternoon (12pm-6pm)	94 28%
Evening (6pm-10pm)	45 13%
Night (10pm-5am)	2 1%
Would not turn on	161 48%
No. of Respondents	338 100%

Question 20b: If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on <u>day two</u> would you turn on your air conditioner? BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	10 3%
Late morning (9am - 12pm)	32 9%
Afternoon (12pm-6pm)	111 33%
Evening (6pm-10pm)	49 14%
Night (10pm-5am)	3 1%
Would not turn on	133 39%
No. of Respondents	338 100%



Question 20c: If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on day three would you turn on your air conditioner?

BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	11 3%
Late morning (9am - 12pm)	43 13%
Afternoon (12pm-6pm)	125 37%
Evening (6pm-10pm)	56 17%
Night (10pm-5am)	2 1%
Would not turn on	101 30%
No. of Respondents	338 100%

Question 20d: If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on <u>day four</u> would you turn on your air conditioner? BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	13 4%
Late morning (9am - 12pm)	47 14%
Afternoon (12pm-6pm)	124 37%
Evening (6pm-10pm)	59 17%
Night (10pm-5am)	3 1%
Would not turn on	92 27%
No. of Respondents	338 100%



**Question 20e:** If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on <u>day five</u> would you turn on your air conditioner?

#### BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	14 4%
Late morning (9am - 12pm)	42 12%
Afternoon (12pm-6pm)	130 38%
Evening (6pm-10pm)	60 18%
Night (10pm-5am)	3 1%
Would not turn on	89 26%
No. of Respondents	338 100%



Question 20a: If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on day one would you turn on your air conditioner?

BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	19 5%
Late morning (9am - 12pm)	28 8%
Afternoon (12pm-6pm)	119 33%
Evening (6pm-10pm)	24 7%
Night (10pm-5am)	0 0%
Would not turn on	170 47%
No. of Respondents	360 100%

Question 20b: If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on <u>day two</u> would you turn on your air conditioner? BASE: Have air conditioning

	TOTA
Early morning (6am-9am)	20 6%
Late morning (9am - 12pm)	33 9%
Afternoon (12pm-6pm)	136 38%
Evening (6pm-10pm)	30 8%
Night (10pm-5am)	0%
Would not turn on	141 39%
No. of Respondents	360 100%



**Question 20c:** If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on <u>day three</u> would you turn on your air conditioner?

BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	23 6%
Late morning (9am - 12pm)	39 11%
Afternoon (12pm-6pm)	155 43%
Evening (6pm-10pm)	30 8%
Night (10pm-5am)	1 0%
Would not turn on	112 31%
No. of Respondents	360 100%

**Question 20d:** If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on <u>day four</u> would you turn on your air conditioner? BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	27 8%
Late morning (9am - 12pm)	47 13%
Afternoon (12pm-6pm)	152 42%
Evening (6pm-10pm)	36 10%
Night (10pm-5am)	0 0%
Would not turn on	98 27%
No. of Respondents	360 100%



**Question 20e:** If there were five consecutive days where the temperature was 30 degrees Celsius, at what time of the day on <u>day five</u> would you turn on your air conditioner?

#### BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	29 8%
Late morning (9am - 12pm)	47 13%
Afternoon (12pm-6pm)	156 43%
Evening (6pm-10pm)	32 9%
Night (10pm-5am)	2 1%
Would not turn on	94 26%
No. of Respondents	360 100%



**Question 21a:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day one</u> would you turn on your air conditioner?

#### BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	29 9%
Late morning (9am - 12pm)	71 21%
Afternoon (12pm-6pm)	119 35%
Evening (6pm-10pm)	52 15%
Night (10pm-5am)	2 1%
Would not turn on	65 19%
No. of Respondents	338 100%

**Question 21b:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day two</u> would you turn on your air conditioner?

#### BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	36 11%
Late morning (9am - 12pm)	74 22%
Afternoon (12pm-6pm)	132 39%
Evening (6pm-10pm)	58 17%
Night (10pm-5am)	3 1%
Would not turn on	35 10%
No. of Respondents	338 100%



**Question 21c:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day three</u> would you turn on your air conditioner?

BASE: h	ave air	conditioning
---------	---------	--------------

	TOTAL
Early morning (6am-9am)	44 13%
Late morning (9am - 12pm)	85 25%
Afternoon (12pm-6pm)	130 38%
Evening (6pm-10pm)	62 18%
Night (10pm-5am)	1 0%
Would not turn on	16 5%
No. of Respondents	338 100%

**Question 21d:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day four</u> would you turn on your air conditioner? BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	49 14%
Late morning (9am - 12pm)	89 26%
Afternoon (12pm-6pm)	124 37%
Evening (6pm-10pm)	62 18%
Night (10pm-5am)	4 1%
Would not turn on	10 3%
No. of Respondents	338 100%



Question 21e: If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day five</u> would you turn on your air conditioner? BASE: have air conditioning

	TOTAL
Early morning (6am-9am)	 48 14%
Late morning (9am - 12pm)	96 28%
Afternoon (12pm-6pm)	124 37%
Evening (6pm-10pm)	60 18%
Night (10pm-5am)	1 0%
Would not turn on	9 3%
No. of Respondents	338 100%



**Question 21a:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day one</u> would you turn on your air conditioner?

#### BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	43 12%
Late morning (9am - 12pm)	70 19%
Afternoon (12pm-6pm)	145 40%
Evening (6pm-10pm)	28 8%
Night (10pm-5am)	1 0%
Would not turn on	73 20%
No. of Respondents	360 100%

**Question 21b:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day two</u> would you turn on your air conditioner?

#### BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	41 11%
Late morning (9am - 12pm)	78 22%
Afternoon (12pm-6pm)	155 43%
Evening (6pm-10pm)	30 8%
Night (10pm-5am)	1 0%
Would not turn on	55 15%
No. of Respondents	360 100%



**Question 21c:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day three</u> would you turn on your air conditioner?

BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	50 14%
Late morning (9am - 12pm)	89 25%
Afternoon (12pm-6pm)	162 45%
Evening (6pm-10pm)	32 9%
Night (10pm-5am)	1 0%
Would not turn on	26 7%
No. of Respondents	360 100%

**Question 21d:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day four</u> would you turn on your air conditioner?

BASE: Have air conditioning

	TOTAL
Early morning (6am-9am)	57 16%
Late morning (9am - 12pm)	93 26%
Afternoon (12pm-6pm)	155 43%
Evening (6pm-10pm)	36 10%
Night (10pm-5am)	2 1%
Would not turn on	17 5%
No. of Respondents	360 100%



Question 21e: If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day five</u> would you turn on your air conditioner? BASE: Have air conditioning

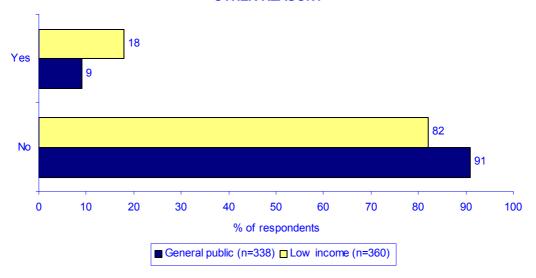
	TOTAL
Early morning (6am-9am)	60 17%
Late morning (9am - 12pm)	91 25%
Afternoon (12pm-6pm)	154 43%
Evening (6pm-10pm)	36 10%
Night (10pm-5am)	4 1%
Would not turn on	15 4%
No. of Respondents	360 100%



# 3.8 Specific Cooling Needs

- 3.8.1 Respondents were asked if they had any specific cooling needs due to illness, disability, age or any other reason.
- 3.8.2 Approximately one in five (18%) of those from the low income segment indicated that they had specific cooling needs due to illness, disability, age or other reasons. This is significantly above the 9% recorded amongst those from the general public.
- 3.8.3 The main reasons given were as follows:
  - > Disability/health reasons general public (3%), low income (12%)
  - Young baby/children general public (3%), low income (2%)
  - Aged/elderly general public (2%), low income (4%)

# DOES ANYONE LIVING IN YOUR HOUSEHOLD HAVE SPECIFIC COOLING NEEDS DUE TO ILLNESS, DISABILITY, AGE OR ANY OTHER REASON?





**Question 22:** Does anyone living in your household have specific cooling needs due to illness, disability age or any other reason?

	TOTAL
TOTAL YES	37 9%
Yes	37 9%
No	368 91%
No. of Respondents	405 100%

#### ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS- MAY 2004

**Question 22:** Does anyone living in your household have specific cooling needs due to illness, disability age or any other reason?

#### BASE: Have air conditioning

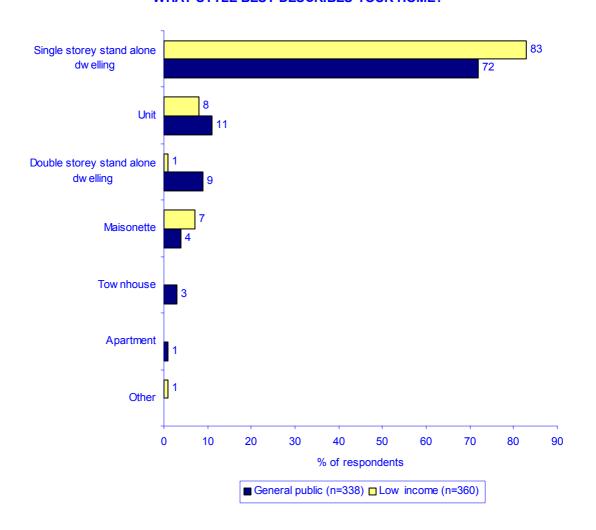
	TOTAL
TOTAL YES	63 18%
Yes	63 17%
No	297 82%
No. of Respondents	360 100%



# 3.9 Type of Dwelling

- 3.9.1 Those surveyed were asked what style best described their home.
- 3.9.2 The overwhelming majority of those surveyed lived in single storey stand alone dwellings (general public 72%, low income segment 83%).
- 3.9.3 Higher proportions from the general public indicated that they lived in double storey stand alone dwellings (9%, compared to the low income segment, 1%) and units (11%, low income segment, 8%), while those from the low income group were more likely to live in a maisonette (7%, general public, 4%).

#### WHAT STYLE BEST DESCRIBES YOUR HOME?





# Question 23: What style best describes your home?

Maisonette	TOTAL ————————————————————————————————————
Single storey stand alone dwelling	292 72%
Double storey stand alone dwelling	36 9%
Unit	45 11%
Townhouse (double storey)	12 3%
Apartment	3 1%
TOTAL OTHER	1 0%
Other	1 0%
No. of Respondents	405 100%



# Question 23: What style best describes your home?

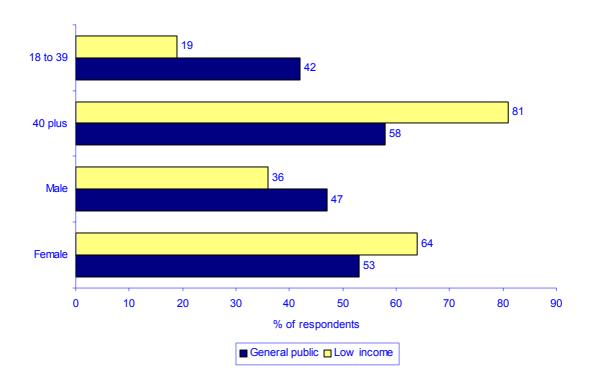
Maisonette	TOTAL ——— 27 7%
Single storey stand alone dwelling	332 83%
Double storey stand alone dwelling	5 1%
Unit	31 8%
Townhouse (double storey)	1 0%
Apartment	0 0%
TOTAL OTHER	4 1%
Other	4 1%
No. of Respondents	400 100%

# 3.10 Segment Characteristics

# Gender and Age

3.10.1 Compared to the general public, there were higher proportions of females, and those aged 40 and over, in the low income segment.

#### **AGE AND GENDER**

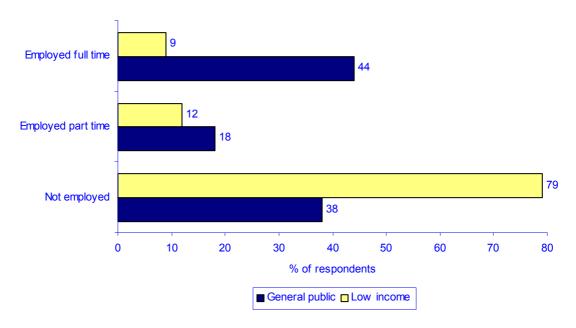


# **Employment Status**

3.10.2 Those in the low income segment were significantly less likely to be in employment, particularly full time employment.

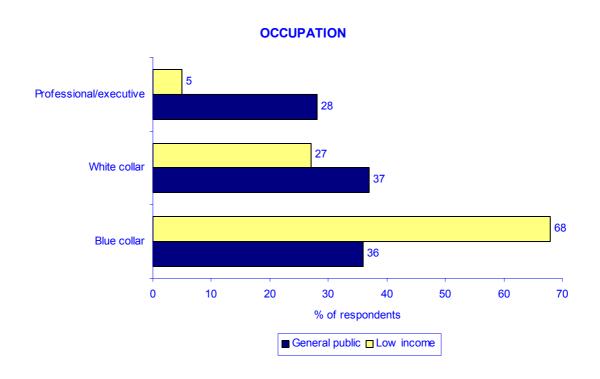


#### **EMPLOYMENT STATUS**



# **Occupation**

3.10.3 There was a relatively even mix of occupations among the general public, while more than two thirds of those in the low income segment who were in employment were blue collar workers.

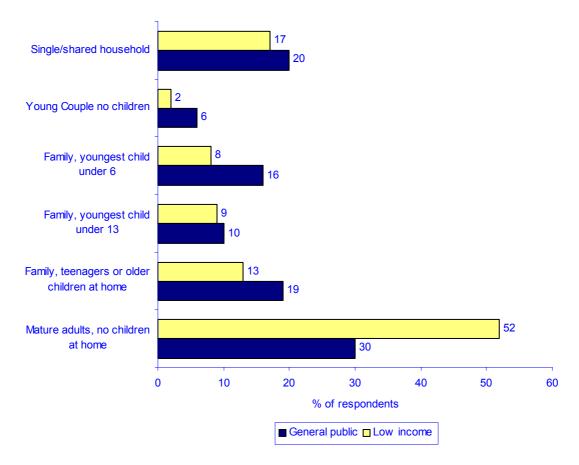




## **Household Structure**

3.10.4 The low income segment comprised a significantly higher proportion of mature adults without children at home. Conversely the general public segment was made up of more families with children.

#### **HOUSEHOLD STRUCTURE**

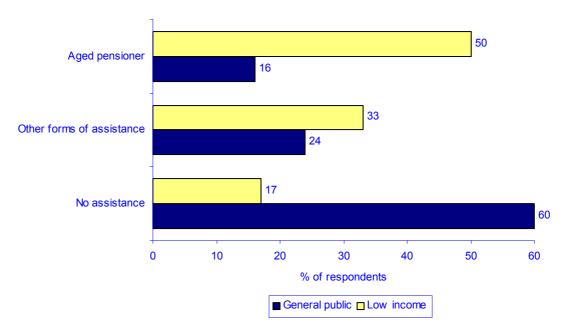


## **Government Assistance**

3.10.5 There were 83% of those from the low income segment who were receiving some form of government assistance (aged pensioners 50%, other forms of assistance 33%), compared to 40% from the general public.



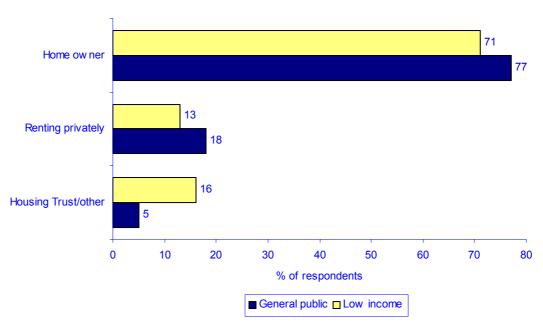
#### **GOVERNMENT ASSISTANCE**



# **Home Ownership**

3.10.6 Those in the low income segment were more likely than those from the general public to live in Housing Trust/other residences, and less likely to be home owners or renting privately.

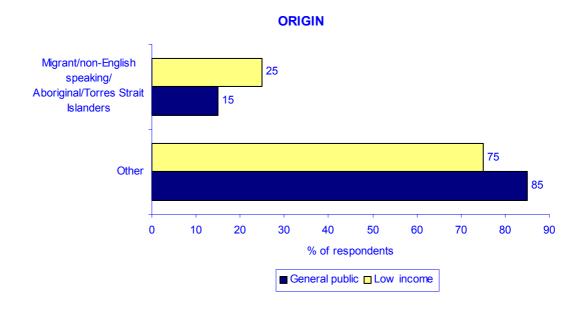
#### **HOME OWNERSHIP**





## **Origin**

3.10.7 One quarter of those from the low income segment were from migrant/non-English speaking backgrounds, or Aboriginals or Torres Strait Islanders, compared to 15% from the general public.

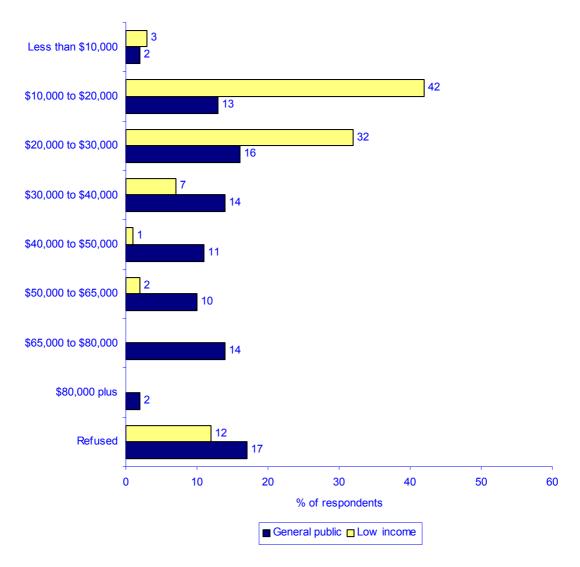


# **Gross Household Income**

3.10.8 As expected, those from the low income segment had significantly higher representation in the lower ranges of gross household income.



#### **GROSS HOUSEHOLD INCOME**





# Question 25: Record gender

	TOTAL
Male	191 47%
Female	214 53%
No. of Respondents	405 100%

#### ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS - MAY 2004

# Question 25: Record gender

	TOTAI
Male	145 36%
Female	255 64%
No. of Respondents	400 100%



# Question 26: In which of these age groups do you fall?

TOTAL 18-39	TOTAL —— 170 42%
18 to 24	45 11%
25 to 30	52 13%
31 to 39	73 18%
TOTAL 40+	235 58%
40 to 54	114 28%
55 to 64	48 12%
65+	73 18%
No. of Respondents	405 100%



Question 26: In which of these age groups do you fall?

TOTAL 18-39	TOTAL  75 19%
18 to 24	24 6%
25 to 30	12 3%
31 to 39	39 10%
TOTAL 40+	325 81%
40 to 54	64 16%
55 to 64	75 19%
65+	186 47%
No. of Respondents	400 100%



# Question 27: Are you currently employed?

	TOTAL
Yes - full time employment	177 44%
Yes - part time/ casual employment	73 18%
Not currently employed	155 38%
No. of Respondents	405 100%

#### ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS - MAY 2004

# Question 27: Are you currently employed?

	TOTAL
Yes - full time employment	38 9%
Yes - part time/ casual employment	46 12%
Not currently employed	316 79%
No. of Respondents	400 100%



# Question 28: What is your occupation?

#### BASE: Currently employed

	TOTAL
Professional/ executive	69 28%
White collar	92 37%
Blue collar	89 36%
No. of Respondents	250 100%

## ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS - MAY 2004

# Question 28: What is your occupation?

#### BASE: Currently employed

	TOTAL
Professional/ executive	4 5%
White collar	23 27%
Blue collar	57 68%
No. of Respondents	84 100%



# Question 30: Which of these groups best describes this household?

	TOTAL
Single or shared household, no children	81 20%
Younger couple, no children	24 6%
Family, youngest child under 6 years	64 16%
Family, younger child under 13 years	41 10%
Family, teenage children or older at home	75 19%
Mature couple or single, no children at home	120 30%
No. of Respondents	405 100%

#### **ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS - MAY 2004**

## Question 30: Which of these groups best describes this household?

	TOTA
Single or shared household, no children	67 17%
Younger couple, no children	8 2%
Family, youngest child under 6 years	30 8%
Family, younger child under 13 years	36 9%
Family, teenage children or older at home	e 51 13%
Mature couple or single, no children at home	208 52%
No. of Respondents	400 100%



# **Question 33:** Are you the recipient of some form of government assistance?

	TOTAL
Yes - aged pensioner	<b>64</b> 16%
Yes - disability pensioner	<b>15</b> 4%
Yes - child allowance	<b>48</b> 12%
TOTAL YES OTHER ASSISTANCE	<b>33</b> 8%
Yes - other assistance - not coded	2 0%
Student allowance/ Austudy	5 1%
Carer payment	5 1%
Unemployment Benefit - Newstart/ Youth allowance	14 3%
Parenting payment - Single/ Partnered	1 0%
Family Tax Benefit	2 0%
Veterans Affairs Pension	4 1%
No	<b>245</b> 60%
No. of Respondents	405 100%



# Question 33: Are you the recipient of some form of government assistance?

Yes - aged pensioner	TOTAL ——— 201 50%	
Yes - disability pensioner	<b>40</b> 10%	
Yes - child allowance	<b>28</b> 7%	
TOTAL YES OTHER ASSISTANCE	<b>61</b> 15%	
Yes - other assistance - not coded	8 2%	
Student allowance/ Austudy	3 1%	
Carer payment	6 1%	
Unemployment benefit - Newstart/ Youth Allowance	18 5%	
Parenting payment - single/ partnered	15 4%	
Family Tax Benefit	1 0%	
Veterans Affairs Pension	10 3%	
No	<b>70</b> 17%	
No. of Respondents	400 100%	



# **Question 24:** What best describes your home ownership status? **READ OUT**

Home owner	TOTAL 311 77%
Renting privately	72 18%
Renting Housing Trust home	17 4%
Live in a retirement village	2 0%
TOTAL OTHER	3 1%
Other	3 1%
No. of Respondents	405 100%



# **Question 24:** What best describes your home ownership status? **READ OUT**

	TOTAL
Home owner	283 71%
Renting privately	50 13%
Renting Housing Trust home	59 15%
Live in a retirement village	5 1%
TOTAL OTHER	3 1%
Other	3 1%
No. of Respondents	400 100%



# Question 32: Which of the following if any applies to your household?

	TOTAL
Migrant/ Non-English speaking background	55 14%
Aboriginal or Torres Strait Islander	5 1%
None of these	345 85%
No. of Respondents	405 100%

## **ESCOSA AIR CONDITIONING SURVEY - LOW INCOME EARNERS - MAY 2004**

## Question 32: Which of the following if any applies to your household?

	TOTAL
Migrant/ Non-English speaking background	96 24%
Aboriginal or Torres Strait Islander	2 0%
None of these	302 75%
No. of Respondents	400 100%



Question 31: Gross Household Income including any pensions, Government benefits, etc. received?

	TOTAL
Under \$10,000 pa	 8 2%
\$10,001-15,000 pa	23 6%
\$15,001-20,000pa	27 7%
\$20,001-25,000 pa	34 8%
\$25,001-30,000 pa	31 8%
\$30,001-35,000 pa	25 6%
\$35,001-40,000 pa	32 8%
\$40,001-45,000 pa	20 5%
\$45,001-50,000 pa	24 6%
\$50,001-65,000 pa	40 10%
\$65,001-80,000 pa	33 8%
\$80,001-100,000 pa	26 6%
\$100,001-120,000 pa	10 2%
\$120,001-140,000 pa	2 0%
\$140,001+ pa	1 0%
Refused	69 17%
No. of Respondents	405 100%



Question 31: Gross Household Income including any pensions, Government benefits, etc. received?

Under \$10,000 pa	TOTAL —— 10 3%
\$10,001-15,000 pa	68 17%
\$15,001-20,000pa	102 25%
\$20,001-25,000 pa	81 20%
\$25,001-30,000 pa	47 12%
\$30,001-35,000 pa	19 5%
\$35,001-40,000 pa	9 2%
\$40,001-45,000 pa	4 1%
\$45,001-50,000 pa	2 0%
\$50,001-65,000 pa	8 2%
\$65,001-80,000 pa	1 0%
\$80,001-100,000 pa	0 0%
\$100,001-120,000 pa	1 0%
\$120,001-140,000 pa	0 0%
\$140,001+ pa	0 0%
Refused	48 12%
No. of Respondents	400 100%



# Section 4 Low Income Segment Sub Group Comparisons



This section compares the findings of the research amongst a number of sub groups from the Low Income Segment, namely:

- Age groups those aged 18 to 39 compared to those aged 40 plus
- Employment status those who were employed compared to those who were not employed
- Welfare recipients those on aged pensions compared to those obtaining other forms of assistance compared to those receiving no assistance
- Origin Aboriginals or Torres Strait Islanders/migrants/non-English speaking backgrounds compared to those who were from other backgrounds
- Home ownership home owners compared to private renters compared to Housing Trust renters/others

The key findings were as follows...

# 4.1 Outside Temperature at Which the Air Conditioner is Turned On

- 4.1.1 We calculated the average outside temperature for each sub group of the low income segment at which people usually start their air conditioners for cooling.
- 4.1.2 This average was calculated by using the following temperature points for each of the identified temperature ranges, and weighting by the proportional responses, as outlined:
  - Less than 24 degrees Celsius 24 degrees Celsius
  - 25 to 29 degrees Celsius 27 degrees Celsius
  - 30 to 35 degrees Celsius 32.5 degrees Celsius
  - Greater than 35 degrees Celsius 35 degrees Celsius



- 4.1.3 There was little variance to this average temperature across all sub groups, with these averages falling within a temperature range of less than one degree Celsius.
- 4.1.4 The highest average temperature was 33.1 degrees (those renting privately), while the lowest average temperature was 32.5 degrees (aged pensioners, those not receiving any welfare benefits and those renting Housing Trust homes/other accommodation).
- 4.1.5 The results for all groups are outlined in the table below.

Sub Group	Average Temperature
Age	
18 to 39	32.8
40 plus	32.6
Employment Status	
Employed	32.8
Not employed	32.6
Welfare Recipient Status	
Aged Pensioner	32.5
Other pension/assistance	32.9
None	32.5
Origin	
Aboriginal/Torres Strait Islander/Non-English speaking	32.7
Other	32.6
Home Ownership	
Home owner	32.6
Renting privately	33.1
Renting Housing Trust/other	32.5



**Question 16:** At what (outside) temperature range do you usually start to use your air conditioning system for cooling? **READ OUT** 

#### BASE: Have air conditioning

		AGE GF	ROUP	EMPLOYMEN	IT STATUS	ORI	GIN	GOVERNI	MENT ASS	SISTANCE	HOME	E OWNER	RSHIP
	TOTAL	All 18-39	All 40+	Employede	Not mployed	Migrant Non Eng Aborig		Aged Pension	Other form of Assist	None	Home Owner	Private Renter	Housing Trust/ Other
Less than 24 degrees	5 1%	1 2%	4 1%		2 1% 	0 0%	5 2%	2 1%	0 0%	3 5% +++	3 1%	0 0%	2 4%
25-29 degrees	33 9%	4 6%	29 10%		29 10%	11 12%	22 8%	21 11%	8 7%	4 7%	29 11% +	1 2%	3 6%
30 to 35 degrees	214 59%	39 60%	175 59%		176 62%	49 53%	165 62%	111 60%	68 60%	35 57%	152 57%	28 68%	34 64%
Greater than 35 degrees	108 30%	21 32%	87 29%		79 28% -	32 35%	76 28%	51 28%	38 33%	19 31%	82 31%	12 29%	14 26%
No. of Respondents	360 100%	65 100%	295 100%		286 100%	92 100%	268 100%	185 100%	114 100%	61 100%	266 100%	41 100%	53 100%



# 4.2 Average Number of Days per Month Air Conditioning is Used

- 4.2.1 We also calculated the average number of days for each sub group of the low income segment during which people use their air conditioners in summer.
- 4.2.2 These averages were calculated as outlined in Section 3.6.3.
- 4.2.3 There was a range of just over two days across all sub groups from the most number of days that air conditioning was used on average to the least.
- 4.2.4 The least number of days on average was named by aged pensioners and those from backgrounds other than Aboriginal, Torres Strait Islanders, or migrant or non-English speaking and aged pensioners (both 11.0 days), and the highest (13.3 days) named by those aged 18 to 39.

Sub Group	Average Number of Days
Age	
18 to 39	13.3
40 plus	11.1
Employment Status	
Employed	11.2
Not employed	11.5
Welfare Recipient Status	
Aged Pensioner	11.0
Other pension/assistance	12.4
None	11.1
Origin	
Aboriginal/Torres Strait Islander/Non-English speaking	12.9
Other	11.0
Home Ownership	
Home owner	11.1
Renting privately	12.2
Renting Housing Trust/other	12.5



**Question 17:** Thinking about the last few summers in South Australia, on average, how many days per month do you use your air conditioning in summer?

## **READ OUT**

#### BASE: Have air conditioning

		AGE G	ROUP	EMPLOYMEN	IT STATUS	ORI	GIN	GOVERNI	MENT ASS	SISTANCE	HOME	E OWNER	≀SHIP
	TOTAL	All 18-39	All 40+	Employede	Not mployed	Migrant Non Eng Aborig	None of these	Aged Pension	Other form of Assist	None	Home Owner	Private Renter	Housing Trust/ Other
0 days	2 1%	0 0%	2 1%		1 0%	0 0%	2 1%	1 1%	0 0%	1 2%	1 0%	1 2% +	0 0%
1-4 days	60 17%	6 9% -	54 18% +		48 17%	20 22%	40 15%	38 21% ++	13 11% -	9 15%	47 18%	5 12%	
5-8 days	90 25%	15 23%	75 25%		74 26%	15 16% 	75 28% ++	46 25%	29 25%	15 25%	67 25%	10 24%	
9-12 days	83 23%	13 20%	70 24%		62 22%	15 16% -	68 25% +	42 23%	26 23%	15 25%	67 25%	8 20%	
13-20 days	71 20%	19 29% ++	52 18% 		56 20%	20 22%	51 19%	30 16%	26 23%	15 25%	46 17% -	10 24%	15 28% +
more than 20 days	54 15%	12 18%	42 14%		45 16%	22 24% +++	32 12% 	28 15%	20 18%	6 10%	38 14%	7 17%	9 17%
No. of Respondents	360 100%	65 100%	295 100%	74 100%	286 100%	92 100%	268 100%	185 100%	114 100%	61 100%	266 100%	41 100%	53 100%



# 4.3 Times When Air Conditioning is Switched on in Summer Heatwave Periods

4.3.1 The following tables compare the times of day at which air conditioning is switched on in both main living areas and main sleeping areas in summer heatwave conditions for each sub group.

#### Age Groups

- 4.3.2 In relation to the main living areas, higher proportions of those aged 18 to 39 used their air conditioning throughout the day (with the exception of midday to 6pm) than those aged 40 plus.
- 4.3.3 This is also the case for the main sleeping areas. For these areas there was also a significantly higher proportion of those aged 40 plus (41%, compared to those aged 18 to 39, 23%) who indicated that they would not turn their air conditioning on in their main sleeping areas in these conditions.

	Main Living Areas	Main Living Areas	Main Sleeping Areas	Main Sleeping Areas
	18 to 39	40 plus	18 to 39	40 plus
6am to 9am	25%	15%	20%	9%
9am to midday	42%	31%	25%	15%
Midday to 6pm	75%	75%	51%	32%
6pm to 10pm	75%	61%	55%	41%
10pm to 6am	42%	21%	40%	27%
Would not turn on	2%	2%	23%	41%

## **Employment Status**

4.3.4 There were similar air conditioning usage patterns for both those that were employed and those that were not unemployed, with the following exceptions:



- In relation to the main living areas, those who were employed were more likely to use their air conditioning between 6pm and 6am, while a higher proportion of those who were not employed used their air conditioning from midday to 6pm
- For the main sleeping areas, there were higher incidences of those who were employed who used their air conditioning between 6am and midday

	Main Livi	ng Areas	Main Slee	ping Areas
	Employed	Not employed	Employed	Not employed
6am to 9am	19%	16%	16%	9%
9am to midday	36%	31%	22%	15%
Midday to 6pm	69%	77%	36%	35%
6pm to 10pm	72%	62%	47%	43%
10pm to 6am	32%	23%	34%	28%
Would not turn on	4%	1%	39%	37%

## Country of Origin

- 4.3.5 Those from Aboriginal, Torres Strait Islander or migrant or non-English speaking backgrounds were more likely to use their air conditioning in their main living areas from 6am to 9am, while a higher proportion from other backgrounds indicated that they used their air conditioning between midday and 6pm in these areas.
- 4.3.6 Higher proportions of those from Aboriginal, Torres Strait Islander or migrant or non-English speaking backgrounds used their air conditioning in their main sleeping areas across all periods of the day. Those not from these backgrounds were more likely to indicate that they would not turn their air conditioning on in their main sleeping areas in such conditions.



	Main Livi	ing Areas	Main Sleeping Areas				
	Migrant/ NES/ATSI	Other	Migrant/ NES/ATSI	Other			
6am to 9am	23%	15%	15%	9%			
9am to midday	33%	32%	23%	14%			
Midday to 6pm	65%	78%	38%	34%			
6pm to 10pm	64%	64%	52%	41%			
10pm to 6am	28%	24%	35%	28%			
Would not turn on	2%	2%	30%	40%			

## Welfare Recipient Status

- 4.3.7 In relation to the main living areas, those on some form of welfare assistance (aged pension or other assistance) were more likely to use their air conditioning from 9am to 6pm, while those not receiving any assistance were more likely to use their air conditioning from 6pm to 6am.
- 4.3.8 Those who did not receive any form of welfare assistance showed the highest incidences of using the air conditioning in their main sleeping areas, particularly from midday through to 6am.

	ı	Main Living Area	S	Main Sleeping Areas					
	Aged Pensioner	Other Assistance	No Assistance	Aged Pensioner	Other Assistance	No Assistance			
6am to 9am	15%	21%	15%	8%	15%	13%			
9am to midday	30%	40%	25%	13%	20%	20%			
Midday to 6pm	79%	73%	67%	29%	39%	44%			
6pm to 10pm	59%	67%	72%	40%	45%	52%			
10pm to 6am	19%	31%	31%	26%	29%	39%			
Would not turn on	1%	3%	3%	40%	40%	25%			



# Home Ownership

- 4.3.9 The air conditioning usage amongst those with different home ownership status was mixed. The main variances between the groups were:
  - ➤ Higher proportions of home owners used their air conditioning in their main living areas between midday and 10pm, than either those who were renting privately or with the Housing Trust
  - Those who were renting privately were more likely to use their air conditioning in both their main living areas and main sleeping areas between 6am and 9am in the morning

		Main Living Area	as	Main Sleeping Areas					
	Home Owner	Renting Privately	Housing Trust/Other	Home Owner	Renting Privately	Housing Trust/Other			
6am to 9am	15%	32%	15%	10%	22%	8%			
9am to midday	31%	37%	36%	17%	15%	15%			
Midday to 6pm	77%	68%	72%	37%	27%	30%			
6pm to 10pm	66%	56%	60%	44%	39%	43%			
10pm to 6am	24%	24%	28%	29%	32%	28%			
Would not turn on	1%	5%	4%	36%	44%	42%			



**Question 19a:** What periods is/ are your air conditioning system(s) normally operating during <u>summer heat wave</u> <u>periods</u> on <u>weekdays</u> in your <u>main living areas?</u> **READ OUT** 

BASE: Have air conditioning

		AGE GF	ROUP	EMPLOYMEN	IT STATUS	ORI	GIN	GOVERNI	MENT ASS	SISTANCE	HOM	E OWNER	RSHIP
	TOTAL	All 18-39	All 40+	Employede	Not mployed	Migrant Non Eng Aborig	None of these	Aged Pension	Other form of Assist	None	Home Owner	Private Renter	Housing Trust/ Other
Early morning (6am-9am)	60 17%	16 25% +	44 15% -		45 16%	21 23% +	39 15% -	27 15%	24 21%	9 15%	39 15% -	13 32% +++	8 15%
Late morning (9am-12pm)	117 32%	27 42% +	90 31% -		90 31%	30 33%	87 32%	56 30%	46 40% ++	15 25%	83 31%	15 37%	19 36%
Afternoon (12pm-6pm)	270 75%	49 75%	221 75%	51 69%	219 77%	60 65% 	210 78% ++	146 79% +	83 73%	41 67%	204 77%	28 68%	38 72%
Evening (6pm-10pm)	230 64%	49 75% ++	181 61% 	53 72%	177 62%	59 64%	171 64%	110 59%	76 67%	44 72%	175 66%	23 56%	32 60%
Night (10pm-5am)	89 25%	27 42% +++	62 21% 	32%	65 23% -	26 28%	63 24%	35 19% 	35 31% +	19 31%	64 24%	10 24%	15 28%
Would not turn on	7 2%	1 2%	6 2%		4 1%	2 2%	5 2%	2 1%	3 3%	2 3%	3 1% -	2 5%	2 4%
No. of Respondents	360 100%	65 100%	295 100%		286 100%	92 100%	268 100%	185 100%	114 100%	61 100%	266 100%	41 100%	53 100%



Question 19b: What periods is/ are your air conditioning system(s) normally operating during <u>summer heat wave</u> <u>periods</u> on <u>weekdays</u> in your <u>main sleeping areas?</u>
READ OUT

BASE: Have air conditioning

		AGE GF	ROUP	EMPLOYMEN	NT STATUS	ORI	GIN	GOVERNI	MENT ASS	SISTANCE	HOME	OWNER	RSHIP
	TOTAL	All 18-39	All 40+	Employede	Not employed	Migrant Non Eng Aborig	None of these	Aged Pension	Other form of Assist	None	Home Owner	Private Renter	Housing Trust/ Other
Early morning (6am-9am)	39 11%	13 20% +++	26 9% 	16%	27 9% -	14 15%	25 9%	14 8% 	17 15% +	8 13%	26 10%	9 22% ++	4 8%
Late morning (9am-12pm)	59 16%	16 25% ++	43 15% 	22%	43 15%	21 23% +	38 14% -	24 13% -	23 20%	12 20%	45 17%	6 15%	8 15%
Afternoon (12pm-6pm)	126 35%	33 51% +++	93 32% 		99 35%	35 38%	91 34%	54 29% 	45 39%	27 44% +	99 37%	11 27%	16 30%
Evening (6pm-10pm)	157 44%	36 55% ++	121 41% 	35 47%	122 43%	48 52% +	109 41% -	74 40%	51 45%	32 52%	118 44%	16 39%	23 43%
Night (10pm-5am)	106 29%	26 40% ++	80 27% 		81 28%	32 35%	74 28%	49 26%	33 29%	24 39% +	78 29%	13 32%	15 28%
Would not turn on	135 38%	15 23% 	120 41% +++	39%	106 37%	28 30%	107 40%	74 40%	46 40%	15 25% 	95 36%	18 44%	22 42%
No. of Respondents	360 100%	65 100%	295 100%		286 100%	92 100%	268 100%	185 100%	114 100%	61 100%	266 100%	41 100%	53 100%



### 4.4 Air Conditioning Usage Over Five Consecutive Days When the Temperature Was 35 Degrees Celsius

4.4.1 The following tables reflect the time of day at which the sub groups from the low income segment indicated that they would turn on their air conditioning during five consecutive days where the temperature was 35 degrees Celsius.

#### Age Groups

- 4.4.2 The trends across both age groups were relatively consistent, with an increasing likelihood of air conditioning being turned on earlier in the day
   from 6am to midday as the number of successive days of 35 degree
   Celsius heat continues.
- 4.4.3 Conversely, the incidence of both age groups indicating that they would not turn their air conditioning on increased over this five day period.
- 4.4.4 The main difference among the two sub groups was that higher proportions of those aged 18 to 39 indicated that they would turn on their air conditioning between 9am and midday on days one, two and three in these circumstances.

#### 18 to 39 Year Olds

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	11%	9%	14%	18%	20%
9am to midday	26%	28%	29%	26%	23%
Midday to 6pm	42%	42%	40%	43%	43%
6pm to 10pm	6%	8%	11%	8%	9%
10pm to 6am	0%	0%	0%	0%	2%
Would not turn on	15%	14%	6%	5%	3%



#### 40 Plus Year Olds

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	12%	12%	14%	15%	16%
9am to midday	18%	20%	24%	26%	26%
Midday to 6pm	40%	43%	46%	43%	43%
6pm to 10pm	8%	8%	8%	11%	10%
10pm to 6am	0%	0%	0%	1%	1%
Would not turn on	21%	16%	7%	5%	4%

#### **Employment Status**

- 4.4.5 Similar trends in air conditioning usage emerged for both those that were employed and those that were not employed, with the incidence of not turning on the air conditioning decreasing as the number of days of 35 degrees Celsius heat increased.
- 4.4.6 Higher proportions of those that were not employed, however, turned on their air conditioning between midday and 6pm across all of the five days.

#### **Employed**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	9%	8%	15%	20%	20%
9am to midday	19%	23%	20%	18%	16%
Midday to 6pm	35%	38%	36%	36%	36%
6pm to 10pm	16%	16%	22%	20%	20%
10pm to 6am	0%	0%	0%	0%	1%
Would not turn on	20%	15%	7%	5%	5%



#### **Not Employed**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	13%	12%	14%	15%	16%
9am to midday	20%	21%	26%	28%	28%
Midday to 6pm	42%	44%	47%	45%	44%
6pm to 10pm	6%	6%	6%	7%	7%
10pm to 6am	0%	0%	0%	1%	1%
Would not turn on	20%	15%	7%	5%	4%

#### Country of Origin

- 4.4.7 Again, similar trends in air conditioning usage emerged for both those who were among the Aboriginal, Torres Strait Islander, migrant or non-English speaking background sub group and those that were not. The incidence of not turning on the air conditioning decreased as the number of days of 35 degrees Celsius heat increased.
- 4.4.8 Higher proportions of those that were not Aboriginals, Torres Strait Islanders, migrants or from non-English speaking backgrounds turned on their air conditioning between midday and 6pm.

#### Aboriginals, Torres Strait Islanders, Migrants, Non-English Speaking Background

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	14%	13%	16%	17%	20%
9am to midday	24%	26%	29%	33%	30%
Midday to 6pm	34%	37%	37%	34%	34%
6pm to 10pm	10%	10%	9%	9%	10%
10pm to 6am	0%	0%	0%	0%	1%
Would not turn on	18%	14%	9%	8%	5%



#### Other

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	11%	11%	13%	15%	16%
9am to midday	18%	20%	23%	24%	24%
Midday to 6pm	43%	45%	48%	46%	46%
6pm to 10pm	7%	8%	9%	10%	10%
10pm to 6am	0%	0%	0%	1%	1%
Would not turn on	21%	16%	7%	4%	4%

#### **Welfare Status**

4.4.9 Similar trends in air conditioning usage emerged for aged pensioners, those who received other forms of assistance and those who did not receive any government assistance. The incidence of not turning on the air conditioning again decreased as the number of days of 35 degrees Celsius heat increased.

4.4.10 There were, however, higher proportions of those who did not receive any form of government assistance who turned on their air conditioning either later in the day, or did not turn it on at all across each of the five days.

#### **Aged Pensioner**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	14%	14%	16%	18%	19%
9am to midday	18%	19%	24%	26%	26%
Midday to 6pm	40%	43%	46%	44%	43%
6pm to 10pm	6%	6%	6%	8%	8%
10pm to 6am	1%	1%	1%	1%	1%
Would not turn on	21%	17%	8%	4%	4%



#### **Other Assistance**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	10%	8%	12%	12%	12%
9am to midday	18%	23%	25%	27%	26%
Midday to 6pm	47%	50%	50%	47%	48%
6pm to 10pm	9%	11%	8%	10%	11%
10pm to 6am	0%	0%	0%	1%	1%
Would not turn on	17%	9%	6%	3%	2%

#### No Assistance

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	10%	10%	11%	16%	18%
9am to midday	26%	26%	28%	23%	21%
Midday to 6pm	28%	31%	33%	33%	33%
6pm to 10pm	11%	10%	18%	18%	16%
10pm to 6am	0%	0%	0%	0%	3%
Would not turn on	25%	23%	10%	10%	8%

#### Home Ownership

- 4.4.11 For home owners and private renters, the trends identified for the other sub groups also emerged, with the incidence of not turning on the air conditioning again decreased as the number of days of 35 degrees Celsius heat increased.
- This trend was, however, far less pronounced amongst Housing Trust/other residents. For this group, the responses were significantly more consistent across each of the five days.



#### **Home Owner**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	12%	11%	12%	14%	14%
9am to midday	20%	21%	24%	25%	25%
Midday to 6pm	39%	42%	46%	45%	44%
6pm to 10pm	8%	8%	9%	10%	10%
10pm to 6am	0%	0%	0%	0%	1%
Would not turn on	22%	17%	9%	6%	5%

#### **Private Rental**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	10%	12%	22%	27%	29%
9am to midday	15%	15%	15%	20%	17%
Midday to 6pm	44%	56%	51%	39%	41%
6pm to 10pm	5%	5%	7%	10%	10%
10pm to 6am	0%	0%	0%	2%	0%
Would not turn on	27%	12%	5%	2%	2%

#### **Housing Trust/Other**

	Day 1	Day 2	Day 3	Day 4	DAY 5
6am to 9am	15%	13%	15%	17%	19%
9am to midday	23%	30%	34%	34%	32%
Midday to 6pm	42%	36%	36%	36%	36%
6pm to 10pm	11%	11%	11%	9%	9%
10pm to 6am	2%	2%	2%	2%	2%
Would not turn on	8%	8%	2%	2%	2%



**Question 21a:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day one</u> would you turn on your air conditioner?

#### BASE: Have air conditioning

		AGE G	ROUP	EMPLOYMENT STATUS		S OR	ORIGIN		GOVERNMENT ASSISTANCE			HOME OWNERSHIP			
	TOTAL	All 18-39	All 40+	Employede	Not employed	Migrant Non Eng Aborig	None of these	Aged Pension	Other form of Assist	None	Home Owner	Private Renter	Housing Trust/ Other		
Early morning (6am-9am)	43 12%	7 11%	36 12%		36 13%	13 14%	30 11%	26 14%	11 10%	6 10%	31 12%	4 10%	8 15%		
Late morning (9am - 12pm)	70 19%	17 26%	53 18%		56 20%	22 24%	48 18%	34 18%	20 18%	16 26%	52 20%	6 15%	12 23%		
Afternoon (12pm-6pm)	145 40%	27 42%	118 40%		119 42%	31 34%	114 43%	74 40%	54 47% +	17 28% 	105 39%	18 44%	22 42%		
Evening (6pm-10pm)	28 8%	4 6%	24 8%	12 16% +++	16 6% 	9 10%	19 7%	11 6%	10 9%	7 11%	20 8%	2 5%	6 11%		
Night (10pm-5am)	1 0%	0 0%	1 0%	0 0%	1 0%	0 0%	1 0%	1 1%	0 0%	0 0%	0 0%	0 0%	1 2% ++		
Would not turn on	73 20%	10 15%	63 21%		58 20%	17 18%	56 21%	39 21%	19 17%	15 25%	58 22%	11 27%	4 8% 		
No. of Respondents	360 100%	65 100%	295 100%	74 100%	286 100%	92 100%	268 100%	185 100%	114 100%	61 100%	266 100%	41 100%	53 100%		



**Question 21b:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day two</u> would you turn on your air conditioner?

#### BASE: Have air conditioning

		AGE G	ROUP	EMPLOYMENT STATUS ORIGIN G		GOVERNI	MENT ASS	SISTANCE	HOME OWNERSHIP				
	TOTAL	All 18-39	All 40+	Employede	Not employed	Migrant Non Eng Aborig	None of these	Aged Pension	Other form of Assist	None	Home Owner	Private Renter	Housing Trust/ Other
Early morning (6am-9am)	41 11%	6 9%	35 12%		35 12%	12 13%	29 11%	26 14%	9 8%	6 10%	29 11%	5 12%	
Late morning (9am - 12pm)	78 22%	18 28%	60 20%		61 21%	24 26%	54 20%	36 19%	26 23%	16 26%	56 21%	6 15%	
Afternoon (12pm-6pm)	155 43%	27 42%	128 43%		127 44%	34 37%	121 45%	79 43%	57 50% +	19 31% 	113 42%	23 56% +	36%
Evening (6pm-10pm)	30 8%	5 8%	25 8%		18 6% 	9 10%	21 8%	12 6%	12 11%	6 10%	22 8%	2 5%	
Night (10pm-5am)	1 0%	0 0%	1 0%	0 0%	1 0%	0 0%	1 0%	1 1%	0 0%	0 0%	0 0%	0 0%	
Would not turn on	55 15%	9 14%	46 16%		44 15%	13 14%	42 16%	31 17%	10 9% 	14 23% +	46 17% +	5 12%	
No. of Respondents	360 100%	65 100%	295 100%		286 100%	92 100%	268 100%	185 100%	114 100%	61 100%	266 100%	41 100%	53 100%



**Question 21c:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day three</u> would you turn on your air conditioner?

#### BASE: Have air conditioning

		AGE GF	ROUP	EMPLOYMENT STATUS		ORIGIN		GOVERNMENT ASSISTANCE			HOME OWNERSHIP		
	TOTAL	All 18-39	All 40+	Employede	Not employed	Migrant Non Eng Aborig	None of these	Aged Pension	Other form of Assist	None	Home Owner	Private Renter	Housing Trust/ Other
Early morning (6am-9am)	50 14%	9 14%	41 14%	11 15%	39 14%	15 16%	35 13%	29 16%	14 12%	7 11%	33 12%	9 22%	
Late morning (9am - 12pm)	89 25%	19 29%	70 24%		74 26%	27 29%	62 23%	44 24%	28 25%	17 28%	65 24%	6 15%	
Afternoon (12pm-6pm)	162 45%	26 40%	136 46%		135 47% +	34 37%	128 48% +	85 46%	57 50%	20 33% 	122 46%	21 51%	19 36%
Evening (6pm-10pm)	32 9%	7 11%	25 8%		16 6% 	8 9%	24 9%	12 6%	9 8%	11 18% +++	23 9%	3 7%	
Night (10pm-5am)	1 0%	0 0%	1 0%	0 0%	1 0%	0 0%	1 0%	1 1%	0 0%	0 0%	0 0%	0 0%	
Would not turn on	26 7%	4 6%	22 7%		21 7%	8 9%	18 7%	14 8%	6 5%	6 10%	23 9% +	2 5%	
No. of Respondents	360 100%	65 100%	295 100%		286 100%	92 100%	268 100%	185 100%	114 100%	61 100%	266 100%	41 100%	53 100%



**Question 21d:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day four</u> would you turn on your air conditioner?

#### BASE: Have air conditioning

		AGE G	ROUP	EMPLOYMENT STATUS ORIGIN GO		GOVERNI	GOVERNMENT ASSISTANCE			HOME OWNERSHIP			
	TOTAL	All 18-39	All 40+	Employede	Not mployed	Migrant Non Eng Aborig	None of these	Aged Pension	Other form of Assist	None	Home Owner	Private Renter	Housing Trust/ Other
Early morning (6am-9am)	57 16%	12 18%	45 15%		42 15%	16 17%	41 15%	33 18%	14 12%	10 16%	37 14% -	11 27% ++	9 17%
Late morning (9am - 12pm)	93 26%	17 26%	76 26%		80 28% +	30 33% +	63 24%	48 26%	31 27%	14 23%	67 25%	8 20%	18 34%
Afternoon (12pm-6pm)	155 43%	28 43%	127 43%	27 36%	128 45%	31 34% 	124 46% ++	81 44%	54 47%	20 33% -	120 45%	16 39%	19 36%
Evening (6pm-10pm)	36 10%	5 8%	31 11%	15 20% +++	21 7% 	8 9%	28 10%	14 8%	11 10%	11 18% ++	27 10%	4 10%	5 9%
Night (10pm-5am)	2 1%	0 0%	2 1%		2 1%	0 0%	2 1%	1 1%	1 1%	0 0%	0 0%	1 2% +	1 2%
Would not turn on	17 5%	3 5%	14 5%	4 5%	13 5%	7 8%	10 4%	8 4%	3 3%	6 10% ++	15 6%	1 2%	1 2%
No. of Respondents	360 100%	65 100%	295 100%	74 100%	286 100%	92 100%	268 100%	185 100%	114 100%	61 100%	266 100%	41 100%	53 100%



**Question 21e:** If there were five consecutive days where the temperature was 35 degrees Celsius, at what time of the day on <u>day five</u> would you turn on your air conditioner?

#### BASE: Have air conditioning

		AGE G	ROUP	EMPLOYMENT STATUS ORIGIN GC		GOVERNI	GOVERNMENT ASSISTANCE			HOME OWNERSHIP			
	TOTAL	All 18-39	All 40+	Employede	Not mployed	Migrant Non Eng Aborig	None of these	Aged Pension	Other form of Assist	None	Home Owner	Private Renter	Housing Trust/ Other
Early morning (6am-9am)	60 17%	13 20%	47 16%	15 20%	45 16%	18 20%	42 16%	35 19%	14 12%	11 18%	38 14% 	12 29% ++	10 19%
Late morning (9am - 12pm)	91 25%	15 23%	76 26%		79 28% ++	28 30%	63 24%	48 26%	30 26%	13 21%	67 25%	7 17%	17 32%
Afternoon (12pm-6pm)	154 43%	28 43%	126 43%		127 44%	31 34% 	123 46% ++	79 43%	55 48%	20 33% -	118 44%	17 41%	19 36%
Evening (6pm-10pm)	36 10%	6 9%	30 10%		21 7% 	9 10%	27 10%	14 8%	12 11%	10 16% +	27 10%	4 10%	5 9%
Night (10pm-5am)	4 1%	1 2%	3 1%	1 1%	3 1%	1 1%	3 1%	1 1%	1 1%	2 3% +	3 1%	0 0%	1 2%
Would not turn on	15 4%	2 3%	13 4%		11 4%	5 5%	10 4%	8 4%	2 2%	5 8% +	13 5%	1 2%	1 2%
No. of Respondents	360 100%	65 100%	295 100%	74 100%	286 100%	92 100%	268 100%	185 100%	114 100%	61 100%	266 100%	41 100%	53 100%



### Appendix 1: About The Research



#### How We Did The Research

McGregor Tan Research conducted telephone surveys with the following two segments:

- The general public which comprised a random sample of 405 adults over the age of 18 from within the Adelaide metropolitan area
- Low income earners, which comprised a sample of 400 adults over the age of 18 in the Adelaide metropolitan area who met the following criteria:
  - If they were single, their gross household income was \$20,000 or less per year
  - If they lived with a partner or spouse, their gross household income was \$25,000 or less per year
  - If they were single adults with a dependent child or children, their gross household income was \$30,000 or less
  - If they lived in a household with two or more adults with dependent children, their gross household income was \$35,000 or less

These telephone interviews were conducted in May 2004.



## Appendix 2: Additional Comments



This section lists the responses, made by individual interviewees, which did not fit within the coded responses. Each is a single response, except where specified by a number of respondents shown in brackets.

These comments are included for completeness, but always remember they are minor responses, negligible in relation to the main, coded data. *In other words, remember that these are generally isolated comments, providing flavour but not constituting the main ingredients.* 

#### ESCOSA AIR CONDITIONING SURVEY GENERAL PUBLIC SEGMENT - MAY 2004

Question 13: Do you adjust the thermostat setting when leaving home?

Other specify

Have not used it yet

Question 22: Does anyone living in your household have specific cooling needs due to illness, disability age or any other reason?

Yes - specify reasons for specific cooling (e.g. MS, new bay)

Feel the heat a lot, makes me feel sick Heat exhaustion Yes

Question 23: What style best describes your home?

Other - specify

Terrace House

Question 24: What best describes your home ownership status?

Other

Buying home lives with his parents Looking after a home for a family member

Question 29: Could you please tell me which of the following best describes your situation?

BASE: Q29 Other specify

On Work Cover

Question 33: Are you the recipient of some form of government assistance?

Yes - other assistance

Partner allowance

Question 13: Do you adjust the thermostat setting when leaving home?

Other specify

Do no t use it



### Question 22: Does anyone living in your household have specific cooling needs due to illness, disability age or any other reason?

Yes - specify reasons for specific cooling (e.g. MS, new bay)

BASE: Q22 other

Husband is very heat sensitive! Shift Worker Wife and children need cooling when very hot

#### Question 23: What style best describes your home?

#### Other - specify

2 bedroom Villa Attached housing double brick Bluestone villa. Semi-detached single story

#### Question 24: What best describes your home ownership status?

#### Other

Refused Refused. Renting- co-op

#### Question 29: Could you please tell me which of the following best describes your situation?

#### BASE: Q29 Other specify

Full Time Carer Health care benefits Recovering from an accident. Volunteer

#### Question 33: Are you the recipient of some form of government assistance?

#### BASE: Q33 Yes other assistance

Centrelink
No told of this
Partner Allowance
Partner allowance
Partnered Allowance
partners allowance (husband on invalid pension)
widow allowance
Widows assistance



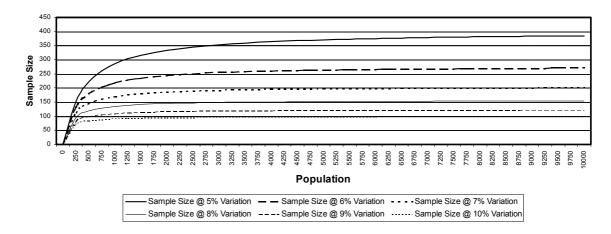
# Appendix 3: Sampling Tolerance



It should be borne in mind throughout this report that all data based on sample surveys are subject to a sampling tolerance. That is, where a sample is used to represent an entire population, the resulting figures should not be regarded as absolute values, but rather as the mid-point of a range plus or minus x% (see sampling tolerance table below). Only variations clearly designated as *significantly* different are statistically valid differences and these are clearly pointed out in the Key Findings section of this report. Other divergences are within the normal range of fluctuation at a 95% confidence level; they should be viewed with some caution and not treated as statistically reliable changes.

	MARGIN OF ERROR TABLE										
	ı		(95% (	confide	nce lev	el)					
SAMPLE		Percentages giving a particular answer									
SIZE	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	
Ψ	95%	90%	85%	80%	75%	70%	65%	60%	55%	50%	
50	6	9	10	11	12	13	14	14	14	14	
100	4	6	7	8	9	9	10	10	10	10	
150	4	5	6	7	7	8	8	8	8	8	
200	3	4	5	6	6	6	7	7	7	7	
250	3	4	5	5	6	6	6	6	6	6	
300	3	4	4	5	5	5	6	6	6	6	
400	2	3	4	4	4	5	5	5	5	5	
500	2	3	3	4	4	4	4	4	4	5	
600	2	2	3	3	4	4	4	4	4	4	
700	2	2	3	3	3	4	4	4	4	4	
800	2	2	3	3	3	3	3	4	4	4	
900	2	2	2	3	3	3	3	3	3	3	
1000	1	2	2	3	3	3	3	3	3	3	
1500	1	2	3	2	2	2	3	3	3	3	
2000	1	1	2	2	2	2	2	2	2	2	
3000	1	1	1	2	2	2	2	2	2	2	

### Optimum Sample Sizes to Ensure the Given Maximum Variation





# Appendix 4: Questionnaire



Project No: 7134

	ESCOSA AIR CONDITIONING QUESTIONNAIRE
mar	od my name is from McGregor Tan Research, the Adelaide independent ket research company. We are conducting a survey about air conditioning in different seholds and would appreciate your opinions.
	tly, we are interested in talking to people in different household situations. Can you please me
1.	Which of the following broad categories best describes your household situation?  Read out, single response  1 Single, live on my own  2 Single, live in a shared household  3 Live with partner/spouse without dependent children  4 Single adult, with dependent child or children  5 Two adults with dependent child or children  6 Two or more adults with dependent child or children
2.	If Single (codes 1-2 in Q1): Is your gross household income, (this includes salary, pension and other concessions, other income sources etc.) Read out, single response 1 \$20,000 or less 2 More than \$20,000
3.	If Live with partner/spouse (code 3 in Q1): Is your gross household income, (this includes salary, pension and other concessions, other income sources etc.) Read out, single response 1 \$25,000 or less 2 More than \$25,000
4.	If Single adult with dependent child/children (code 4 in Q1): Is your gross household income, (this includes salary, pension and other concessions, other income sources etc.) Read out, single response 1 \$30,000 or less 2 More than \$30,000
5.	If Two adults with dependent child/children OR Two or more adults with dependent child/children (codes 5 or 6 in Q1): Is your gross household income,(this includes salary, pension and other concessions, other income sources etc.) Read out, single response 1 \$35,000 or less 2 More than \$35,000
6.	<b>ASK ALL:</b> Do you currently receive a concession for your electricity bills? 1 Yes 2 No
If an	not ask: ny 1 in Question 2-6 – define as low income ny 2 in Question 2-6 – define as non-low income
7.	How many rooms does your home have (excluding bathrooms, toilets and laundry)?



8. For each of the following types of air conditioners in your home, please fill in the number installed, the number of rooms serviced by this type of air conditioner, whether it is primarily used for cooling during the day, at night or both and the approximate age of the air conditioner.

If do not have a particular type of air conditioner, please enter a 0 in the number installed column.

			U	sed durin	ıq	
	Number Installed	No. of rooms serviced	Day	Night	Both	Approx. Age
TYPE 1: Evaporative		Serviceu	1	2	3	
Portable	7	16	34			43
Fixed	8	18	35			45
Ducted	9	20	36			47
TYPE 2: Reverse Cycle (heat	and cool)					
Window/Wall	10	22	37			49
Split System	11	24	38			51
Ducted (Multi Room)	12	26	39			53
TYPE 3: Refrigerative (coolin	g only)					
Window/Wall	13	28	40			55
Split System	14	30	41			57
Ducted (Multi room)	15	32	42			59
		e) do you have in yo	our hom	e?		
Unprompted si						
1 fan	2 fans 3 f	ans 4 fans		5 fans o	r more	None 
<b></b> ,		3			5	6
10. If have ceiling response	fans (code 1-5 in	<b>Q9)</b> : Do you use th	ne fans	. Read	d out	multiple
As an alternative to air conditioning when not too hot	To supplement air co on hot days		s that are no onditioned	ot		Don't use them
<b></b> ,			3			4
11. Do you have a t	hermostat setting o	on any of your air c		ers?		



12.		•		•	_		ummer, what is ' <b>Read out sin</b> g	,
	18°-19°	20°-21°	22°-23°	24°-25°	26°-27	7° 28°-	.29° 30°-31°	Does not display temperature
	1	2	3	4		5		is in polation of
13.		ermostat ( Read out s			o you a	djust the	thermostat sett	ing when leaving
	not adjust ave it on)	Adjust every ti		ust often or st every time	Adjust	occasionally	Turn off the air con when leaving h	-
	<b>_</b> ,			3		4	5	
Specif	y: <sub>(5-100)</sub>							
14.	Have the	ermostat (	Code 1 i	<b>n Q11):</b> C	On very h	ot days o	do you: <b>Read c</b>	out single response
		hermostat settir r temperature	ng		the thermos lower tempe	stat setting to erature		Do not change thermostat setting
	[	1						<b></b> ,
15.							our air condition od out single re	ner on a 35+ degree esponse
18°-	19° 20°-21	l° 22°-23°	24°-25°	26°-27°	28°-29°	30°-31°	Don't know/Does n display temperatur	
	], 🔲	2 3	4	5	6	7	8	9
16.	,	(outside) te or cooling?	•	_	•	•	art to use your	air conditioning
	Less than 2	4°C	25°	C to 29°C		30°C	to 35°C	Greater than 35°C
				2		Ţ	3	4
17.	_						a, on average, ead out single	how many days per response
	0 days	1-4 da	ays	5-8 day	S	9-12 days	13 to 20 c	days more than 20 days
	1		2	3		4		6



18. What periods are your air conditioning system(s) is/are normally operating during <u>average</u> temperature summer week days:

	Main Living areas	Main Sleeping Areas
	79-83	84-88
Early morning (6am – 9am)	1	1
Late morning (9am – 12pm)	2	2
Afternoon (12pm - 6pm)	3	3
Evening (6pm - 10pm)	4	4
Night (10pm - 5am)	5	5

19. What periods are your air conditioning system(s) is/are normally operating during **summer** heat wave periods on week days:

	Main Living areas	Main Sleeping Areas
	89-93	94-98
Early morning (6am – 9am)	1	1
Late morning (9am – 12pm)	2	2
Afternoon (12pm - 6pm)	3	3
Evening (6pm - 10pm)	4	4
Night (10pm - 5am)	5	5

**Read out:** We would now like you to ask you about air conditioner usage for two different temperature scenarios, firstly five consecutive days of 30 degrees Celsius, and secondly five consecutive days of 35 degrees Celsius.

20. If there were five consecutive days where the temperature was 30 degrees Celsius, on what days would you turn on your air conditioner and at what time?

Read out each day and possible times

	Day 1	Day 2	Day 3	Day 4	Day 5
Early morning (6am – 9am)	1	1	1	1	1
Late morning (9am – 12pm)	2	2	2	2	2
Afternoon (12pm - 6pm)	3	3	3	3	3
Evening (6pm - 10pm)	4	4	4	4	4
Night (10pm - 5am)	5	5	5	5	5



21. If there were five consecutive days where the temperature was 35 degrees Celsius, on what days would you turn on your air conditioner and at what time?

Read out each day and possible times

	Day 1	Day 2	Day 3	Day 4	Day 5
Early morning (6am – 9am)	1	1	1	1	1
Late morning (9am – 12pm)	2	2	2	2	2
Afternoon (12pm - 6pm)	3	3	3	3	3
Evening (6pm - 10pm)	4	4	4	4	4
Night (10pm - 5am)	5	5	5	5	5

22.	Does anyone living in your household have specific cooling needs due to illness,	disability,
	age or any other reason?	

1 ..... Yes - specify reasons for specific cooling needs (e.g. MS, new baby)

2 ..... No

#### **CLASSIFICATIONS**

23. What style best describes your home? Unprompted single response

Maisonette	Single storey stand alone dwelling	Double story stand alone dwelling	Unit	Townhouse (double storey)	Apartment	Other please specify below
1		3	4	<b></b> 5	6	7
Specify: (301-400)						

24.	Home	ownership	status:
-----	------	-----------	---------

01 ... Home owner

02 ... Renting privately

03 ... Renting Housing Trust home

04 ... Live in a Retirement Village

05 ... Other - specify

25. Record gender:

1 ..... Male

2 ..... Female

26. In which of these age groups do you fall? 1 ..... 18 to 24 2 ..... 25 to 30 3 ..... 31 to 39 4 ..... 40 to 54 5 ..... 55 to 64 6 ..... 65+ 27. Are you currently employed? 1 ..... Yes - full time employment Go to Q27 2 ..... Yes - part time/casual employment Go to Q27 3 ..... Not currently employed Go to Q28 Currently employed (codes 1-2 in Q26): What is your occupation? 1 ..... Professional/executive 2 ..... White collar 3 ..... Blue collar 29. Not currently employed (code 3 in Q26): Could you please tell me which of the following best describes your situation? 01 ... Home duties 02 ... Retired 03 ... Student 04 ... Unemployed 03 ... Other - specify 30. Which of these groups best describes this household? 1 ..... Single or shared household, no children 2 ..... Younger couple, no children 3 ..... Family, youngest child under 6 years 4 ..... Family, younger child under 13 years 5 ..... Family, teenage children or older at home 6 ..... Mature couple or single, no children at home 31. Gross Household Income including any pensions, Government benefits, etc. received 1 ..... Under \$10,000 pa 2 ..... \$10,001-15,000 pa 3 ..... \$15,001-20,000 pa 4 ..... \$20,001-25,000 pa 5 ..... \$25.001-30.000 pa 5 ..... \$30,001-35,000 pa 6 ..... \$35,001-\$40,000 pa 7 ..... \$40,001-\$45,000 pa 8 ..... \$45,001-\$50,000 pa 9 ..... \$50,001-\$65,000 pa 10 ... \$65,001-\$80,000 pa 11 ... \$80,001-\$100,000 pa

- 166 -

12 ... \$100,001-\$120,000 pa 13 ... \$120,001-\$140,000 14 ... \$140,001 + pa

15 ... Refused



- 32. Which of the following if any applies to your household?
  - 1 ..... Migrant/ non-English speaking background
  - 2 ..... Aboriginal or Torres Strait Islander
  - 3 ..... None of these
- 33. Are you the recipient of some form of government assistance?
  - 01 ... Yes aged pensioner
  - 02 ... Yes disability pensioner
  - 03 ... Yes child allowance
  - 04 ... Yes other assistance specify
  - 05 ... No
- 34. Record Suburb



# Appendix 5: How To Read The Computer Tabulations



The computer tabulations in the report show the comparisons between [1] the answers given by the total number of respondents and [2] those given by the various subgroups. This is done in the form of percentages. Under certain data, you may notice the presence of + or - signs. These indicate where there is a statistically significant difference between the responses of the subgroup (e.g. males, people over 65, etc) and the group as a whole. When the responses of the subgroup are significantly less than the group as a whole, this is shown by a minus (-) sign. If, on the other hand, there is a significantly higher response by the subgroup, then a plus (+) sign appears. The degree of significance of difference is also indicated. Where a single (- or +), double (-- or ++) or triple (--- or +++) sign occurs, you can be, respectively, 90%, 95% or 99% sure that the subgroup is in fact answering differently to the group as a whole, and that it is not just a random fluctuation in the data. (See example below)

Please note that, because of rounding, answers in single response questions will not always sum precisely to 100%.

In addition, as the base for percentages is the number of *respondents* answering a particular question (rather than the number of *responses*) multiple response questions sum to more than 100%.

