

EQUIPMENT ENERGY
EFFICIENCY PROGRAM

SURVEY OF ENERGY EFFICIENCY LABELLING

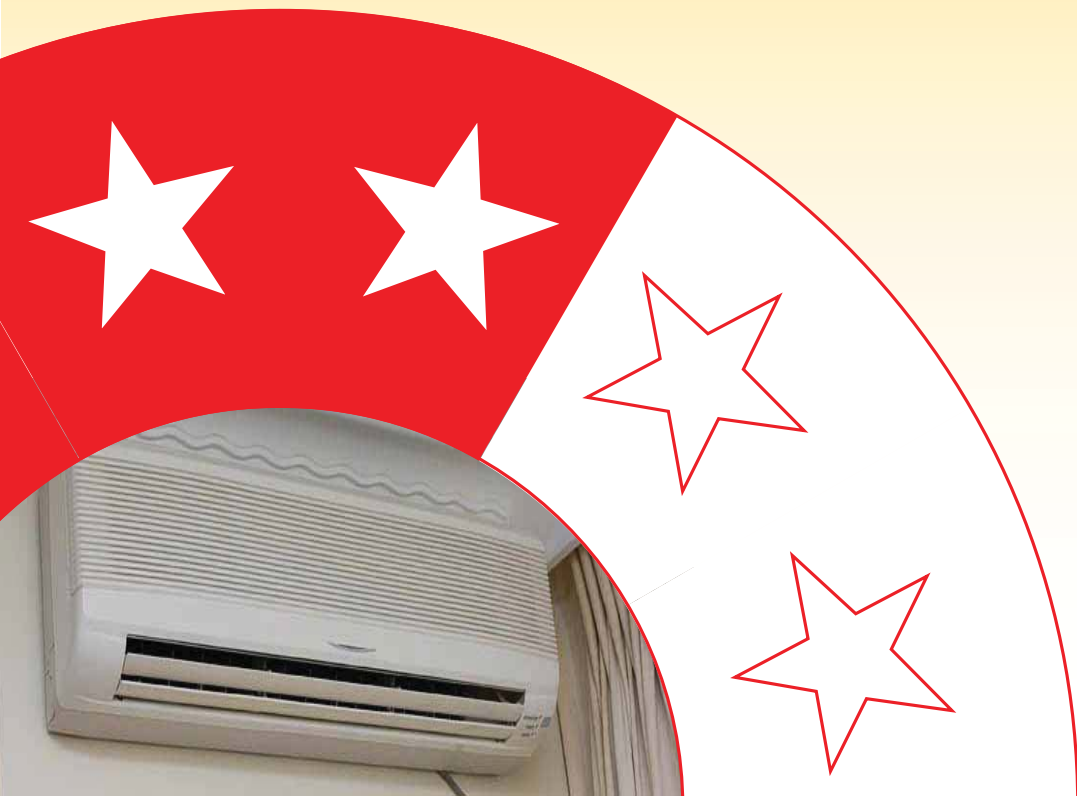
OF AIR CONDITIONERS

A Report on Inspections of 321 Retail Air-Conditioner Outlets in Australia

January 2011



A joint initiative of Australian, State and Territory and
New Zealand Governments



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E3 Report 2011/01 January 2011

Executive Summary	1
Introduction	2
Store Survey	3
Labelling – Australia	6
Labelling by Store Size	7
Labelling by Store Type	9
Labelling by Store Chains	10
Compliance by Brand	11
Registration - Australia	13
Appendices	14
Appendix 1 – Labelling and Registration Requirements	14
Appendix 2 – Survey Scope	14
Appendix 3 – Survey Protocol	14

TABLE OF TABLES

Table 1:	Distribution of Stores and Appliances Surveyed in each State and Territory	3
Table 2:	Distribution of Survey Sample Compared to National Households	3
Table 3:	Incorrectly Labelled Air Conditioners by Store Size	7
Table 4:	Incorrectly Labelled Air Conditioners by Store Type	9
Table 5:	Correctly Labelled Air Conditioners by Chain Size	10
Table 6:	Compliance with Labelling and Registration across Mega chain category	10
Table 7:	Compliance with Labelling and Registration across Table 8: Compliance with Labelling and Registration across Medium chain category	10
Table 8:	Compliance with Labelling and Registration across Medium chain category	10
Table 9:	Incorrectly Labelled Air Conditioners by Brand Size	11
Table 10:	Labelling and Registration Compliance of Brands Surveyed	12

TABLE OF FIGURES

Figure 1:	Number of Stores and Air Conditioners Surveyed by State and Territory	3
Figure 2:	Number of Large Stores and Air Conditioners Surveyed by State and Territory	4
Figure 3:	Number of Medium Stores and Air Conditioners Surveyed by State and Territory	4
Figure 4:	Number of Small Stores and Air Conditioners Surveyed by State and Territory	5
Figure 5:	Distribution of Surveyed Air Conditioners by Type of Outlet	5
Figure 6:	Correctly Labelled Air Conditioners in each State and Territory	6
Figure 7:	Correctly Labelled Air Conditioners by Store Size	7
Figure 8:	Incorrectly Labelled Air Conditioners by Jurisdiction and Store Size	8
Figure 9:	Store Compliance Rate vs Store Size	8
Figure 10:	Incorrectly Labelled Air Conditioners by Store Type	9
Figure 11:	Correctly Labelled Air Conditioners by Chain Size	10
Figure 12:	Distribution of Correct Labelling by Brand	11
Figure 13:	Rate of Correctly Labelled Air Conditioners by Number of Surveyed Products Per Brand	12
Figure 14:	Rate of Compliance with Registration Requirements by State and Territory	13

Executive Summary

All energy efficiency agencies operating under the National Framework for Energy Efficiency agreed to commission a national survey of stores displaying air conditioning equipment for sale to assess compliance with mandatory registration and energy labelling requirements. The survey was project managed by staff within the then Australian Government Department of Environment, Water, Heritage and the Arts and conducted by regional employees of the Australian Refrigeration Council Ltd (ARC).

Energy Efficiency programs have been in operation in some jurisdictions for more than 20 years. State Government legislation give force to the energy performance and efficiency labelling requirements publicly reported in the relevant Australian Standards. These state and territory efforts became applied nationally from 1992. Consumer type air conditioners have been subject to nationally consistent laws since that time.

The survey targeted stores in capital cities, suburban locations and in rural areas as well as stores of varying sizes to gather an impression of the entire market. The survey examined air conditioning products displayed in 321 stores throughout Australia involving individual inspection of all of 3,371 products offered for sale in those stores between May and September 2009.

The survey found that 3,003 (89.1%) air conditioners were labelled correctly. 352 products (10.4%) were not labelled at all and a further 16 products (0.5%) had errors in the way the label was displayed or with the information on the label.

The national compliance rate with mandatory energy labelling of air conditioners can be considered using a range of comparative benchmarks. Almost 9 out of 10 air conditioners carrying an accurate label is an improvement on the previous survey result for this product type conducted in 2005 which found 8 out of 10 air conditioners carried an accurate label (see <http://www.energyrating.gov.au/library/pubs/200910-labelling-compliance-survey.pdf>). This survey result (89.1%) was, however, measurably less than the result of a national whitegoods survey¹ conducted in 2009, involving many of the same stores, that found 98.1% compliance. Since both air conditioners and whitegoods have been subject to mandatory national labelling since 1992, the results suggest that there is still room for substantial improvement in the energy labelling of this product type.

The compliance rates for energy labelling in state and territory jurisdictions varied though the spread of results clustered around the national average. Four jurisdictions had results that were better than the national average:

Northern Territory	96.0%
Victoria	92.8%
South Australia	91.0%
Western Australia	89.5%

The remaining jurisdictions were:

ACT	88.0%
New South Wales	87.7%
Queensland	87.0%
Tasmania	69.4%

The results for the Australian Capital Territory, the Northern Territory and Tasmania were from relatively small sample sizes (though proportional to their share of the national housing stock) which may account for the extremes within the range of findings.

The compliance rate for air conditioners complying with state and territory legal requirements to register all models prior to being offered for sale was 98.9%. Though slightly less than the equivalent figure for whitegoods (99.4%), this result indicates that the registration requirements are well understood by suppliers of air conditioners in Australia.

Compliance across brands and stores of varying sizes is more variable. The survey results suggest that stores selling smaller numbers of air conditioners tend to have poorer rates of labelling compliance compared to larger stores. The results for individual air conditioner brands show substantial variability, but brands with smaller market share (and hence lower representation in this survey) are more likely to have labelling errors, compared to more popular brands.

Survey results have been made available to state regulators and individual stores. The industry associations have been informed of the general findings and all major suppliers have been informed of their comparative standings.

¹ see <http://www.energyrating.gov.au/library/details200910-labelling-compliance-survey.html>

Introduction

Energy efficiency programs are mandatory in Australia under State and Territory legislation and regulations which give force to the relevant Australian Standards. Regulations specify the general requirements for appliances, including offences and penalties if a party does not comply with the requirements. Technical requirements are set out in the relevant appliance standard, which is referred to in State and Territory regulations.

The Australian Refrigeration Council Ltd (ARC) was commissioned to investigate and report on compliance levels for registration and energy labeling in Australia for consumer air conditioners.

The survey was commissioned by the Department of Environment, Water, Heritage and the Arts on behalf of the National Framework for Energy Efficiency. Responsibility within the Australian Government for appliance energy efficiency now resides with the Department of Climate Change and Energy Efficiency (DCCEE).

The hierarchy of the energy efficiency regulatory scheme is as follows:

- The Ministerial Council on Energy (MCE) is represented by Energy Ministers from all jurisdictions and has primary responsibility for national consistency of energy efficiency measures.
- The Equipment Energy Efficiency (E3) Committee is tasked by MCE to investigate the rationale for, and to propose efficiency regulation. Commonwealth, State and Territory regulatory agencies together with New Zealand officials participate in developing and enforcing energy efficiency laws.

The E3 Committee works in partnership with stakeholder groups to introduce programs that encourage market transformation by promoting highly efficient equipment, banning from the market products that do not comply with minimum energy performance standards and by identifying the energy efficiency of products through appliance labeling.

E3 has repeatedly demonstrated that energy efficient products and systems are both cost effective and environmentally responsible to purchase and install – not only because they consume less energy and thus decrease greenhouse gas emissions – but because in most cases they cost very little, if anything, more than equivalent inefficient appliances. As a result, consumers benefit from whole-of-life cost savings due to lower running costs.

Single phase non-ducted air conditioners for household use have been regulated for energy labelling in Australia since 1992. All three phase and single phase ducted air conditioners up to 65kW cooling capacity are regulated for MEPS. Manufacturers may choose to label three phase and ducted air conditioners, but this is not mandatory.

Store Survey

A total of 321 stores were visited in the course of the survey. The stores surveyed were divided into one of three categories based on the total number of air conditioning appliances on display:

Large stores – 20 or more displayed air conditioners

Medium stores – between 6-19 displayed air conditioners

Small stores – 5 or less displayed appliances.

Of the 321 stores surveyed, 45 were Large stores, 163 were Medium stores and the balance of 113 were Small stores. A further 11 websites were included in the survey that offer air conditioners for sale throughout Australia and have therefore not been allocated to particular jurisdictions. The distribution of the surveyed outlets in each State and Territory, together with number of appliances surveyed, is shown in Table 1 and Figure 1.

In undertaking the survey, efforts were made to ensure that the sample was representative. Table 2 indicates that the distribution of products sampled by jurisdiction is comparable to the share of households, although there are a larger number of samples surveyed in smaller States and Territories in order to provide meaningful results.

The number of stores and appliances within each size category surveyed in each State and Territory are illustrated in the following Figures, 2, 3 and 4.

Table 1: Distribution of Stores and Appliances Surveyed in each State and Territory

Jurisdiction	Appliance Sample Size	Stores			
		Total	Small	Medium	Large
NSW	601	58	21	28	9
VIC	470	50	14	28	8
QLD	799	68	25	28	15
SA	548	56	15	34	7
WA	352	39	13	23	3
TAS	98	22	11	11	0
ACT	108	18	9	9	0
NT	139	10	5	2	3
Subtotal	3115	321	113	163	45
INTERNET	256	11	1	3	7
Total	3,371	332	114	166	52

Table 2: Distribution of Survey Sample Compared to National Households

	% National Households	% Survey Appliance Sample
NSW	33%	18%
VIC	25%	14%
QLD	20%	24%
SA	8%	16%
WA	10%	10%
TAS	3%	3%
NT	1%	3%
ACT	2%	4%

Figure 1: Number of Stores and Air Conditioners Surveyed by State and Territory

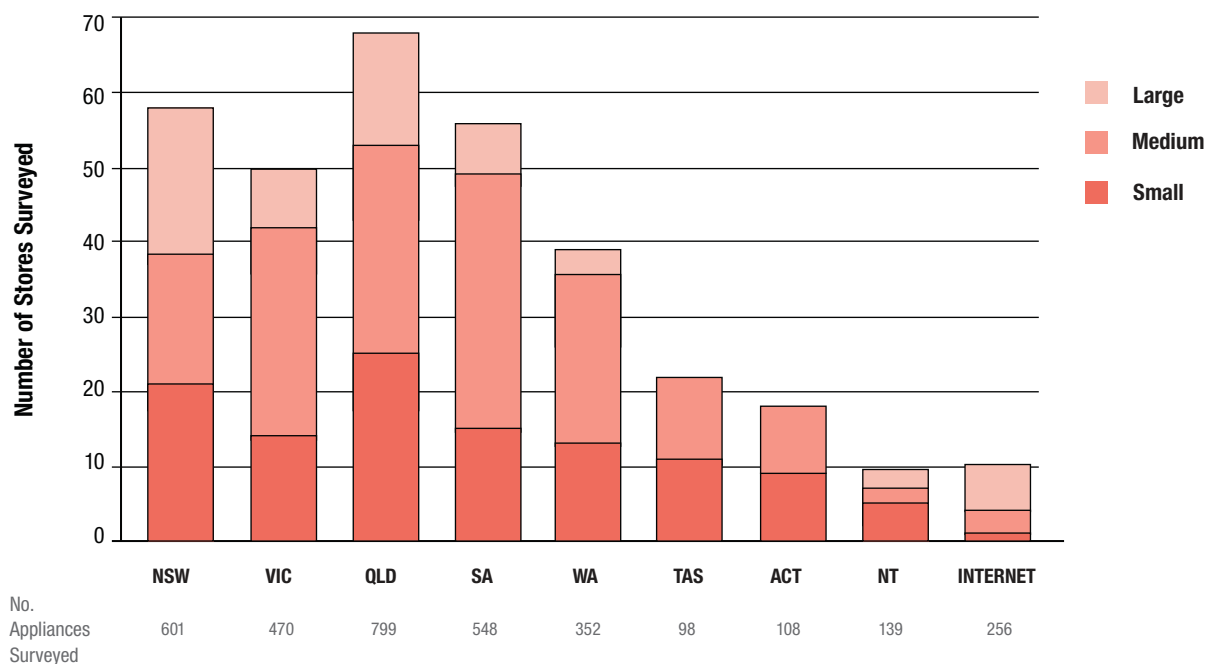


Figure 2: Number of Large Stores and Air Conditioners Surveyed by State and Territory

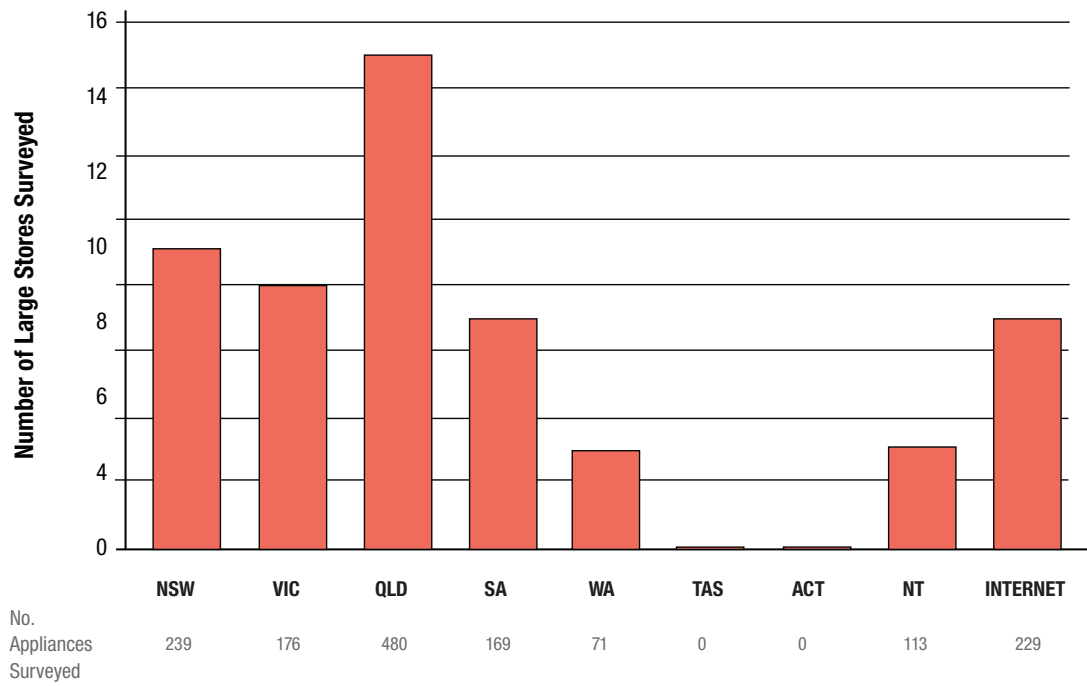


Figure 3: Number of Medium Stores and Air Conditioners Surveyed by State and Territory

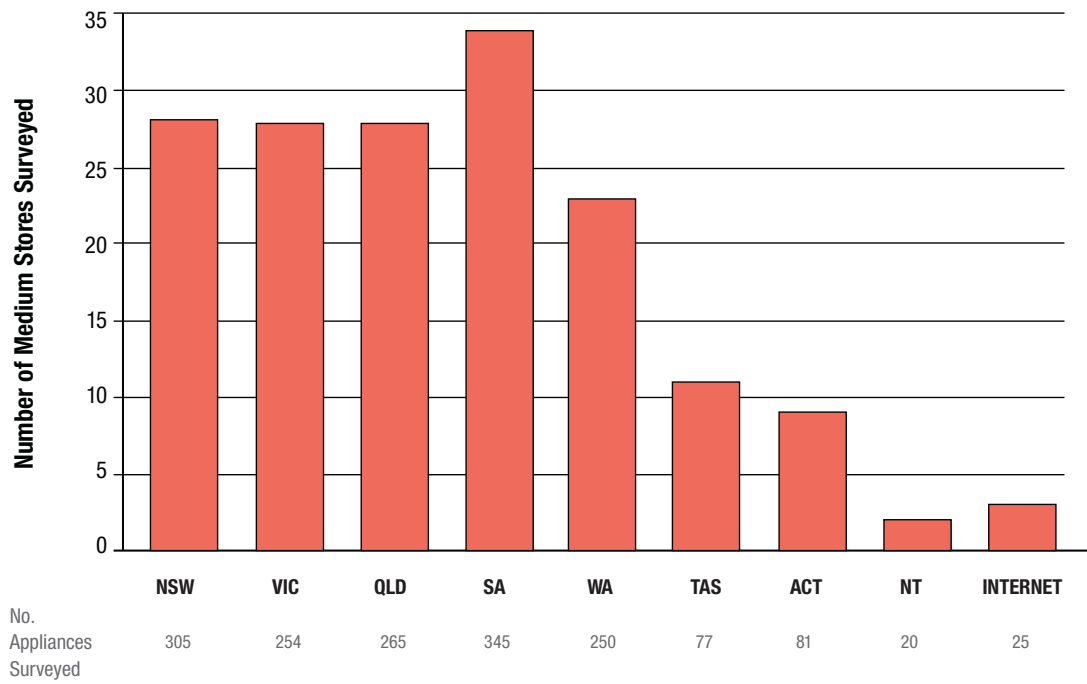
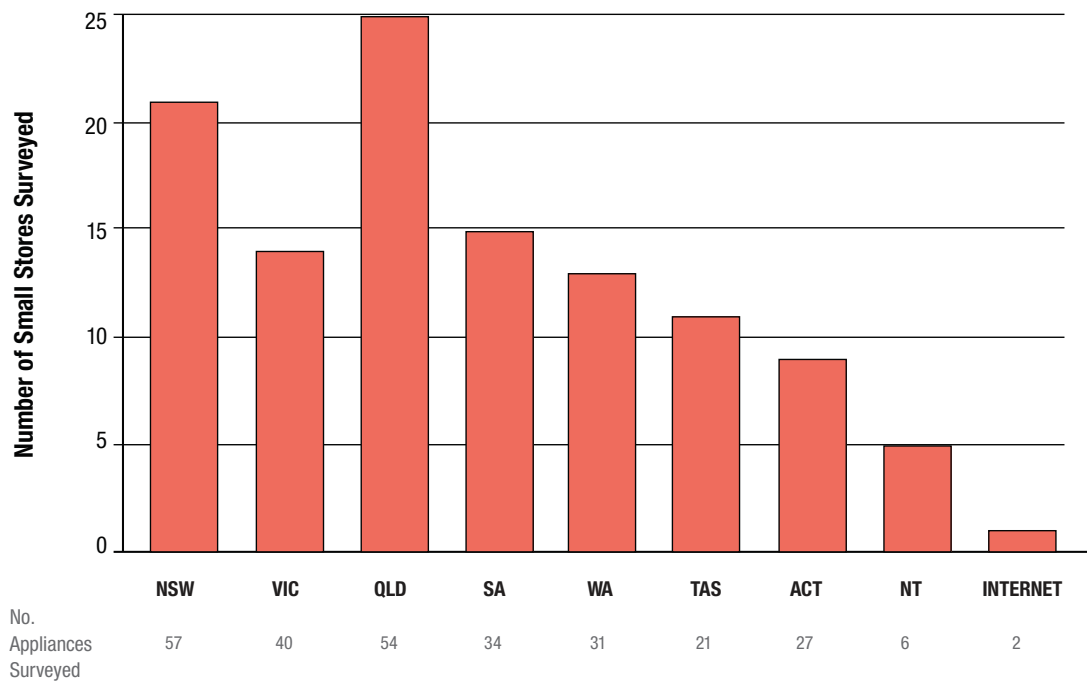
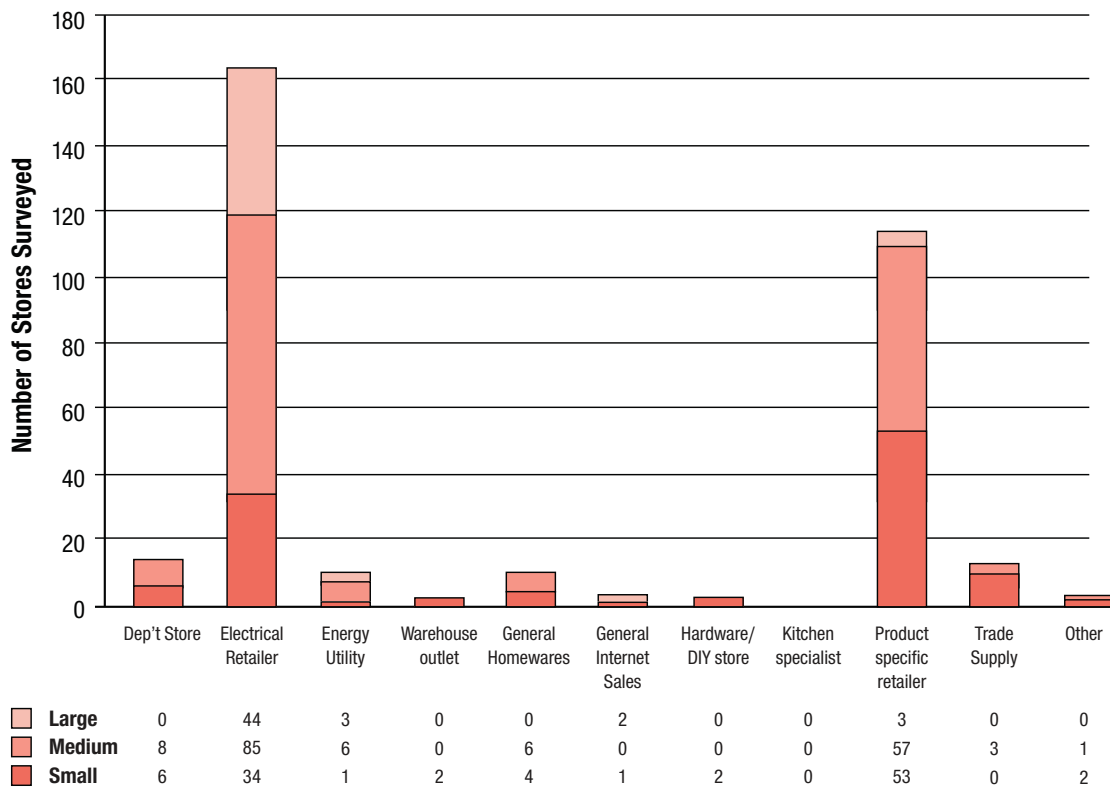


Figure 4: Number of Small Stores and Air Conditioners Surveyed by State and Territory



Nearly 90% of products surveyed were found in electrical retail outlets or retailers that specialised in the supply of air conditioners, as shown in Figure 5.

Figure 5: Distribution of Surveyed Air Conditioners by Type of Outlet



Labelling – Australia

Of all the 3,371 appliances surveyed, 89.1% displayed the correct mandatory energy rating label, 10.4% were unlabelled and 0.5% displayed an incorrect label or had errors in the way the label was displayed or in the information on the label.

The labelling compliance rate in each State and Territory is indicated in Figure 6.

The individual State and Territory results which were equal to or exceeded the national average of 89.1% were:

Northern Territory	96.0%
Victoria	92.8%
South Australia	91.0%
Western Australia	89.5%

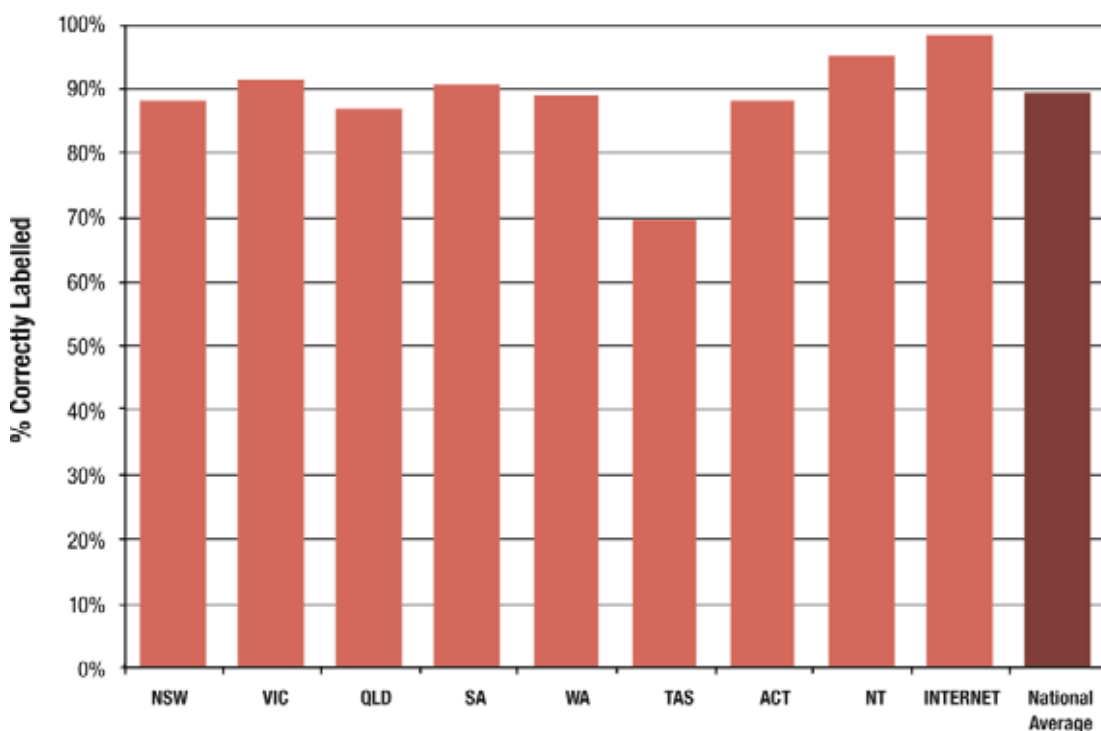
The individual State and Territory results which were below the national average of 89.1% were:

ACT	88.0%
New South Wales	87.7%
Queensland	87.0%
Tasmania	69.4%

The national compliance rate with mandatory energy labelling of air conditioners indicated by this survey was considerably less than the result of a similar national whitegoods survey² that found 98.1% compliance. Since both air conditioners and whitegoods have been subject to mandatory labelling since 1992, the results suggest that there is room for substantial improvement in the energy labelling of air conditioners in Australia.

One possible reason for the lower rate of labelling compliance for air conditioners may be that 'swing tag' labels are still used on some air conditioning equipment, as compared to the adhesive labels on whitegoods. Swing tags could be prone to accidental removal.

Figure 6: Correctly Labelled Air Conditioners in each State and Territory



² see <http://www.energyrating.gov.au/library/details200910-labelling-compliance-survey.html>

Labelling by Store Size

The compliance rates amongst Large and Medium-sized stores are similar, as shown in Table 3 and Figure 7. However, the rate of incorrectly labelled air conditioners in Small stores (less than five displayed appliances) was found to be considerably higher, at over 18%.

The rate of incorrectly labelled air conditioners in Small-sized stores is highest in all jurisdictions except in Queensland and the ACT, when compared with other sized stores. It was particularly high in Victoria and Tasmania, as shown in Figure 8.

While there are stores of all sizes in which all of the air-conditioners offered for sale are correctly labelled, there is a noticeable trend for smaller sized outlets to have higher rates of incorrectly labelled stocks when compared to larger stores. This can be seen in Figure 9 that plots the compliance rate against store size for individual outlets.

Table 3: Incorrectly Labelled Air Conditioners by Store Size

Type of Store	Total Stores	Total Appliances	Unlabelled %
Small Stores	114	272	18.4%
Medium Stores	166	1,622	10.6%
Large Stores	52	1,477	9.9%

Figure 7: Correctly Labelled Air Conditioners by Store Size

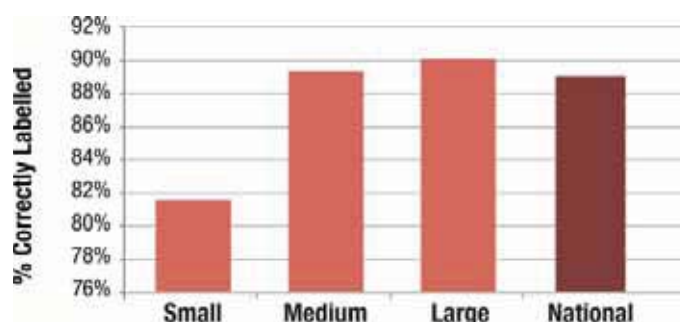


Figure 8: Incorrectly Labelled Air Conditioners by Jurisdiction and Store Size

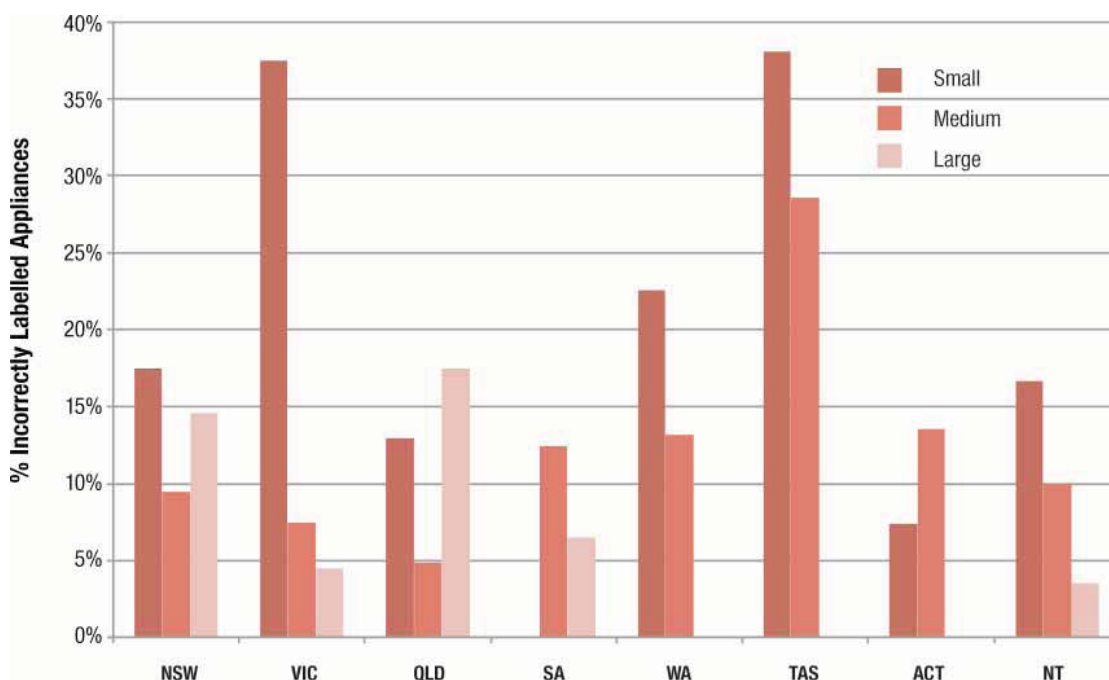
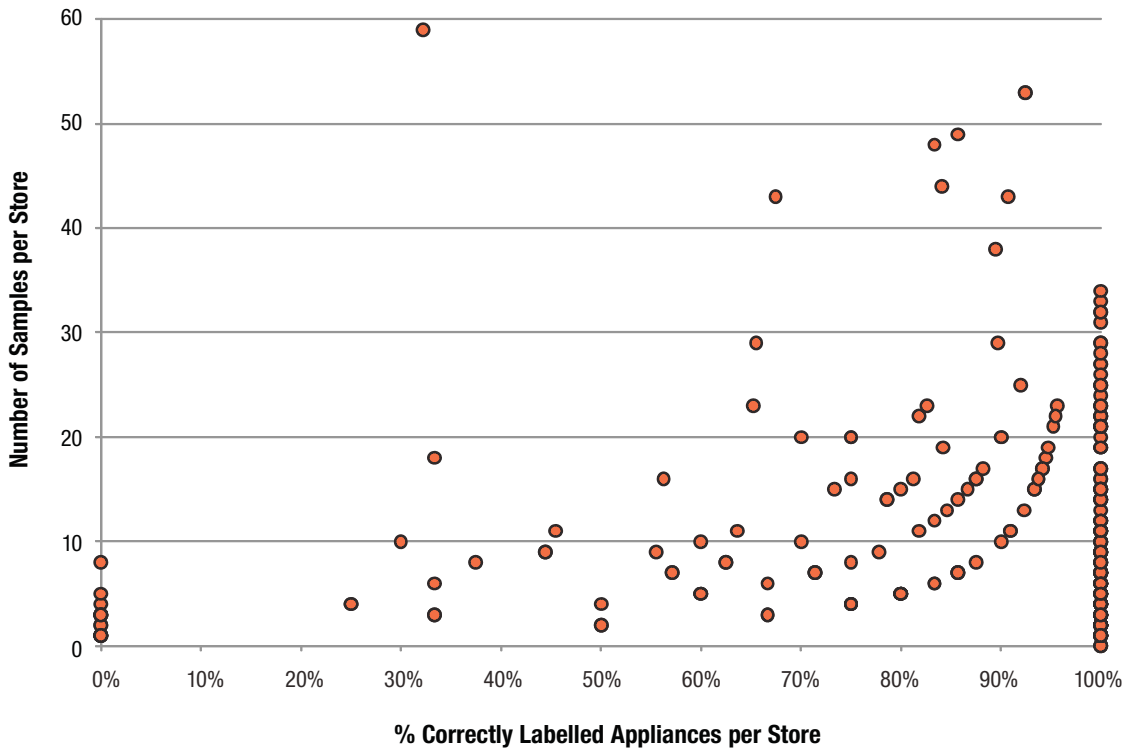


Figure 9: Store Compliance Rate vs Store Size



Labelling by Store Type

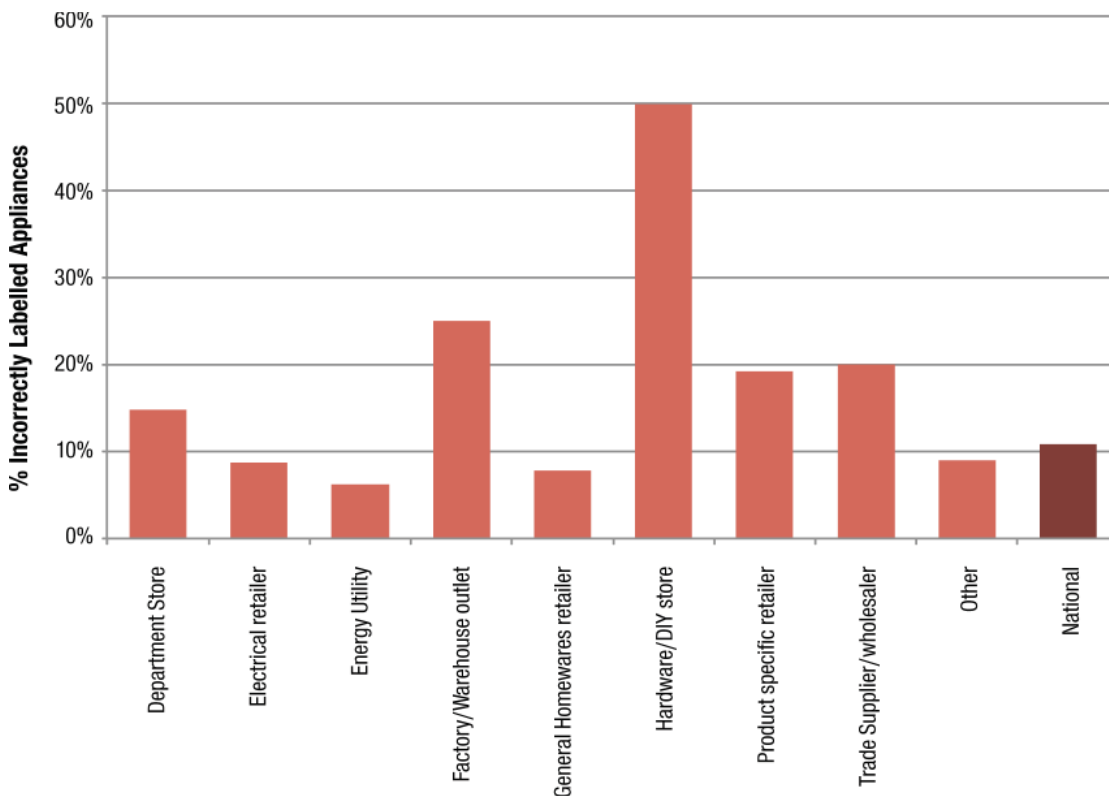
Amongst products surveyed in the different types of outlets, the rates of incorrectly labelled appliances in the categories of 'Product Specific Retailers' and 'Trade Suppliers/wholesalers' were nearly twice the national average, as

shown in Table 4 and Figure 10. Although the rate amongst 'Factory/warehouse outlets' and 'Hardware/DIY stores' were also high, the sample sizes in these cases were too small to draw conclusions, although further investigation may be warranted.

Table 4: Incorrectly Labelled Air Conditioners by Store Type

Outlet Type	Appliance Sample Size	Rate Incorrectly Labelled
Department Store	74	14.9%
Electrical Retailer	2157	9.1%
Energy Utility	107	8.4%
Factory/warehouse outlet	4	25.0%
General Home-wares Retailer	51	7.8%
General Internet sales	256	1.6%
Hardware/DIY store	2	50.0%
Product specific retailer	679	19.9%
Trade Supplier/wholesaler	30	20.0%
Other	11	9.1%
National	3371	10.9%

Figure 10: Incorrectly Labelled Air Conditioners by Store Type



Labelling by Store Chains

75% of all air conditioners surveyed were found in one of 39 chain stores (i.e. stores with multiple outlets). These chains have been disaggregated into four categories based on the observed number of air conditioning appliances:

Mega Chain – with more than 150 appliances inspected

Large Chain – with between 50 and 150 appliances inspected

Medium Chain – with between 10 and 50 appliances inspected

Small Chain – with less than 10 appliances inspected

Almost 50% of air conditioners surveyed were found in a Mega chain. As shown in Table 5 and Figure 11, there is a definite trend towards higher labelling compliance rates amongst larger chains.

Details of the labelling and registration compliance rates for chains in the Mega, Large and Medium categories are included in Table 6, Table 7 and Table 8. Less than four air conditioners are offered on average by individual chains in the Small category, and this is considered too small a sample to provide conclusive results. As result, chains in this category have not been identified below.

Table 5: Correctly Labelled Air Conditioners by Chain Size

Store Category	No.	Appliances Inspected	Incorrectly Labelled	% Correctly Labelled
Mega Chain	4	1,588	130	91.8%
Large Chain	8	631	77	87.8%
Medium Chain	10	232	42	81.9%
Small Chain	17	62	15	75.8%

Figure 11: Correctly Labelled Air Conditioners by Chain Size

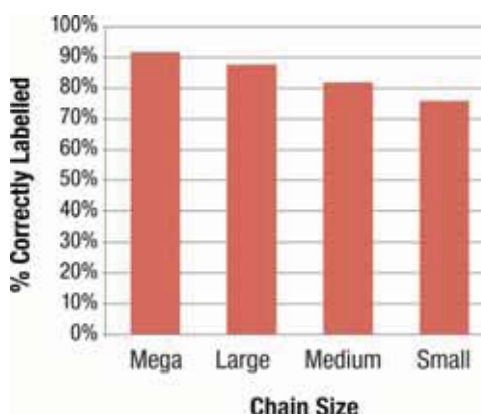


Table 6: Compliance with Labelling and Registration across Mega chain category

Chain	Appliance Sample	% Correctly Labelled	% Correctly Registered
Harvey Norman	583	95.5%	99.7%
The Good Guys	486	88.5%	99.8%
Retravisation	293	92.2%	99.0%
Clive Peters	226	88.9%	99.1%

Table 7: Compliance with Labelling and Registration across Large chain category

Chain	Appliance Sample	% Correctly Labelled	% Correctly Registered
Clive Anthony	123	74.8%	99.2%
Radio Rentals	82	84.1%	100.0%
Betta Electrical	82	97.6%	97.6%
AGL	73	93.2%	100.0%
Mannix Air	71	90.1%	100.0%
Bing Lee	69	91.3%	100.0%
Origin	67	95.5%	97.0%
David Jones	64	84.0%	95.0%

Table 8: Compliance with Labelling and Registration across Medium chain category

Chain	Appliance Sample	% Correctly Labelled	% Correctly Registered
Hearth House	39	46.2%	100.0%
Warehouse Sales	35	94.3%	100.0%
Rite Price	30	80.0%	100.0%
Truscotts Casual Living	27	96.3%	100.0%
Bi-Rite Electrical	26	92.3%	100.0%
Mecair Air Conditioning Solutions	16	81.3%	93.8%
R T Edwards	16	100.0%	100.0%
Seasonmakers	15	80.0%	100.0%
Climate Air Control and Energy Centres	15	80.0%	93.3%
Air Conditioning Warehouse Sales	13	92.3%	100.0%

Compliance by Brand

The 3,371 appliances inspected were produced by 47 brands. The brands are disaggregated as:

Large Brands – more than 100 appliances inspected;

Medium Brands – between 10 and 100 appliances inspected

Small Brands – less than 10 appliances inspected.

The distribution of appliances inspected across the brands is set out in Table 9.

Nearly 40% of brands included in the survey were found to have 100% of their products correctly labelled. However, as shown in Figure 12, products supplied by 17% of brands had none of their air conditioners correctly labelled.

Analysis of rates of labelling compliance by brand size confirm that, while brands supplying only a small number of surveyed air conditioners showed varied rates, more popular brands were more likely to be correctly labelled, as shown in Figure 13.

The compliance rate with labelling and registration requirements for each of the 19 brands with more than ten samples included in the survey is set out in Table 10. The results for the 28 brands with fewer than ten surveyed samples are inconclusive due to the small sample size.

Table 9: Incorrectly Labelled Air Conditioners by Brand Size

Brand Size	Number of Brands	Number of Appliances	Number Unlabelled	Number Wrongly Labelled	% Incorrectly Labelled
Small	28	80	22	1	28.8%
Medium	12	462	69	3	15.6%
Large	7	2,829	261	12	9.7%
Total	47	3,371	352	16	10.9%

Figure 12: Distribution of Correct Labelling by Brand

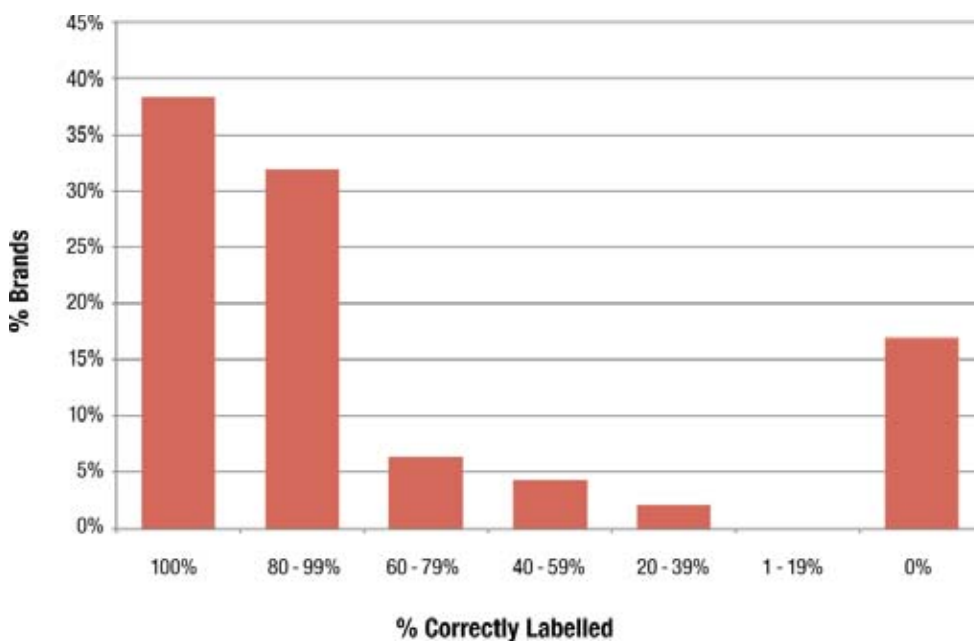


Figure 13: Rate of Correctly Labelled Air Conditioners by Number of Surveyed Products Per Brand

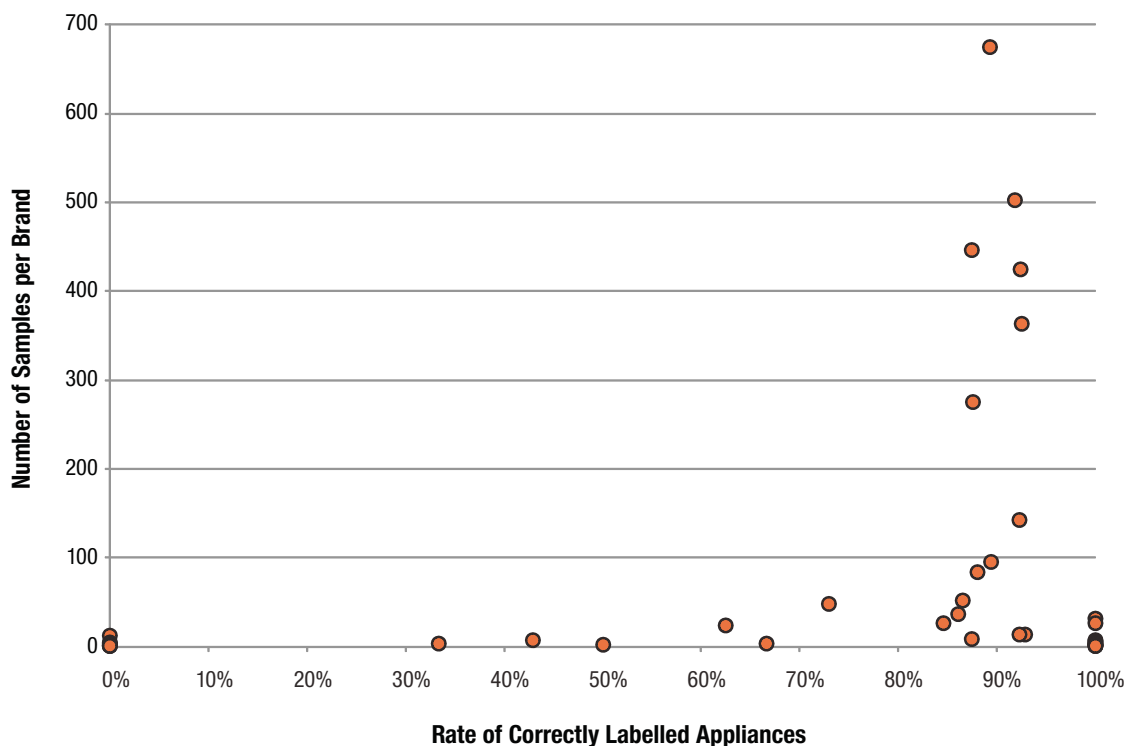


Table 10: Labelling and Registration Compliance of Brands Surveyed

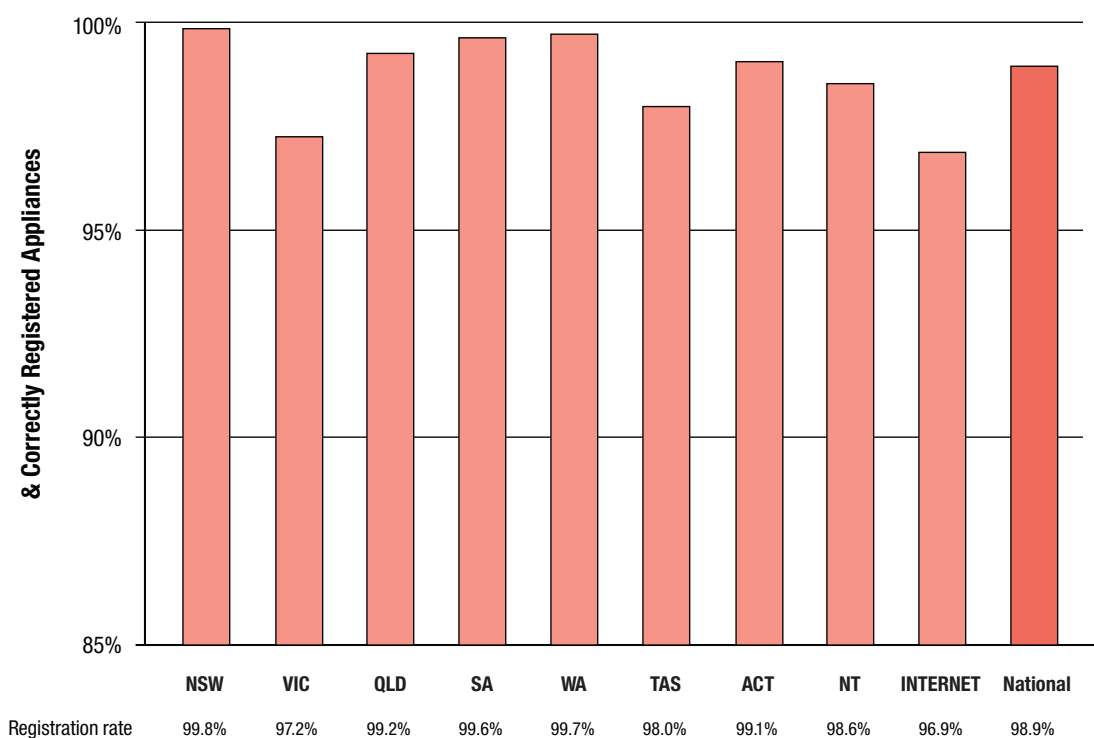
	Appliance Sample	Un-Labelled	Wrongly Labelled	Total % Correctly Labelled	% Registered
LG	675	69	3	89.3%	99.9%
FUJITSU	502	39	2	91.8%	100.0%
ELECTROLUX-KELVINATOR	447	55	1	87.5%	99.8%
PANASONIC	425	30	2	92.5%	98.4%
MITSUBISHI ELECTRIC	363	26	1	92.6%	99.2%
DAIKIN	275	34	0	87.6%	99.3%
TECO	142	8	3	92.3%	99.3%
MITSUBISHI HEAVY INDUSTRIES	95	9	1	89.5%	97.9%
SAMSUNG ELECTRONICS	84	10	0	88.1%	97.6%
TOSHIBA	52	7	0	86.5%	100.0%
DELONGHI	48	11	2	72.9%	100.0%
CARRIER	36	5	0	86.1%	91.7%
HISENSE	31	0	0	100.0%	100.0%
DOMAIN AIR	27	0	0	100.0%	77.8%
MIDEA	26	4	0	84.6%	96.2%
HITACHI	24	9	0	62.5%	100.0%
HELLER	14	1	0	92.9%	100.0%
TCL	13	1	0	92.3%	100.0%
HAIER	12	12	0	0.0%	100.0%

Registration – Australia

Across the country the average compliance with mandatory registration requirements, of the 3,371 air conditioners surveyed, was 98.9%.

Victoria, the Northern Territory and Tasmania had a lower percentage of registered air conditioners than the Australian average, although the differences are small. The actual compliance in each State and Territory is indicated in Figure 14.

Figure 14: Rate of Compliance with Registration Requirements by State and Territory



Appendix 1 – Labelling and Registration Requirements

Regulations specify the general requirements for the energy labelling of appliances, including offences and penalties if a party does not comply with the requirements. Technical requirements for energy labelling are set out in the relevant appliance standard, which is referenced in State and Territory regulations.

All products within the scope of energy labelling must be registered and all energy labels must be approved by a regulatory authority. Applications for registration and labelling compliance are to include:

- Test reports or data to the relevant standard (the number of units to be tested varies);
- Demonstration that the relevant performance requirements have been met by the model in addition to the measurement of energy consumption;
- A sample label (where applicable);
- Evidence that the product meets the energy efficiency requirements (where applicable); and
- The prescribed fee.

The offences typically contained in regulations include:

- Person must not offer to supply (e.g. sell or advertise) a “specified” article which is not registered for energy labelling or where the registration has been cancelled;
- Energy label must not be obscured;
- Other information must not be shown near the label that conflicts with data on the energy label; and
- Making a false or misleading declaration.

For the purposes of this survey the primary functions for which ARC has been contracted are:

- Labelling – check the accuracy of mandatory label against the registration database. The energy label provides buyers with consistent and reliable information so that they can take running costs into account when they purchase new appliances; and
- Registration – check the status of products offered for sale against the registration database.

Appendix 2 – Survey Scope

The scope of the surveys included:

- Store Surveys
 - Mega Stores – Department stores, Warehouse chains > 150 products
 - Large Stores - Regional/Suburban Store 50-150 products
 - Small-Medium Stores < 50 products
- Internet Survey

Specifically, the store surveys included:

- 10 survey staff
- About 30 stores were surveyed by each staff member
- 3 large department stores (e.g. David Jones)
- 5-10 major warehouse chains (e.g. Harvey Norman)
- 3-5 trade suppliers
- 3-5 small city stores
- 3-5 regional stores
- The ARC management selected stores and store locations.

Appendix 3 – Survey Protocol

Given that the survey was undertaken without a regulatory emphasis, strict protocols needed to be in place to ensure that all went smoothly and in partnership with the retailers.

ARC operatives:

- Effectively operated as members of the public
- Provided a letter of introduction from the Commonwealth
- The following approach was undertaken by survey staff:
 - On entry collect relevant brochures
 - Do a walk through the relevant sections
 - Observe the labelling compliance rates
 - Approach the floor staff, and explain your visit
 - Ask if photographs of the products are permitted
 - Request business cards from the floor staff
 - If asked to leave, immediately report eviction to ARC head office and await instruction.

It is important to note that very little concern was expressed by retailers – usually they welcomed the ARC survey staff.

The ARC survey staff reported non-compliance on a mobile device which was linked to the Energy Rating database.