



# E3

Equipment Energy  
Efficiency

## E3 Check Testing Results

**An examination of the results of  
check tests undertaken for the  
Equipment Energy Efficiency Program  
between 1 July and 31 December 2011**

**February 2012**



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

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# 1. Introduction

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This report presents the results of check tests undertaken on behalf of the Equipment Energy Efficiency (E3) Committee and finalised between 1 July and 31 December 2011. Regulatory decisions or stage 2 tests that have occurred in this period but that resulted from check tests undertaken before 1 July 2011 are also included.

## 2. Headline Results

In the second six months of 2011, 74 stage 1 check tests were completed, and the results finalised for an additional three products that failed stage 1 tests before 1 July 2011. Of these 77 products, 63 (82%) passed a stage 1 check test and one further product passed a stage 2 test and is therefore considered to be compliant with performance requirements.

Among the remaining 13 products that failed a stage 1 check test:

- The registrations of four models were cancelled either at the request of the supplier, or because the supplier did not respond to the regulators notice in sufficient time.
- One product was not registered at the time it was selected for checktesting and as a result of

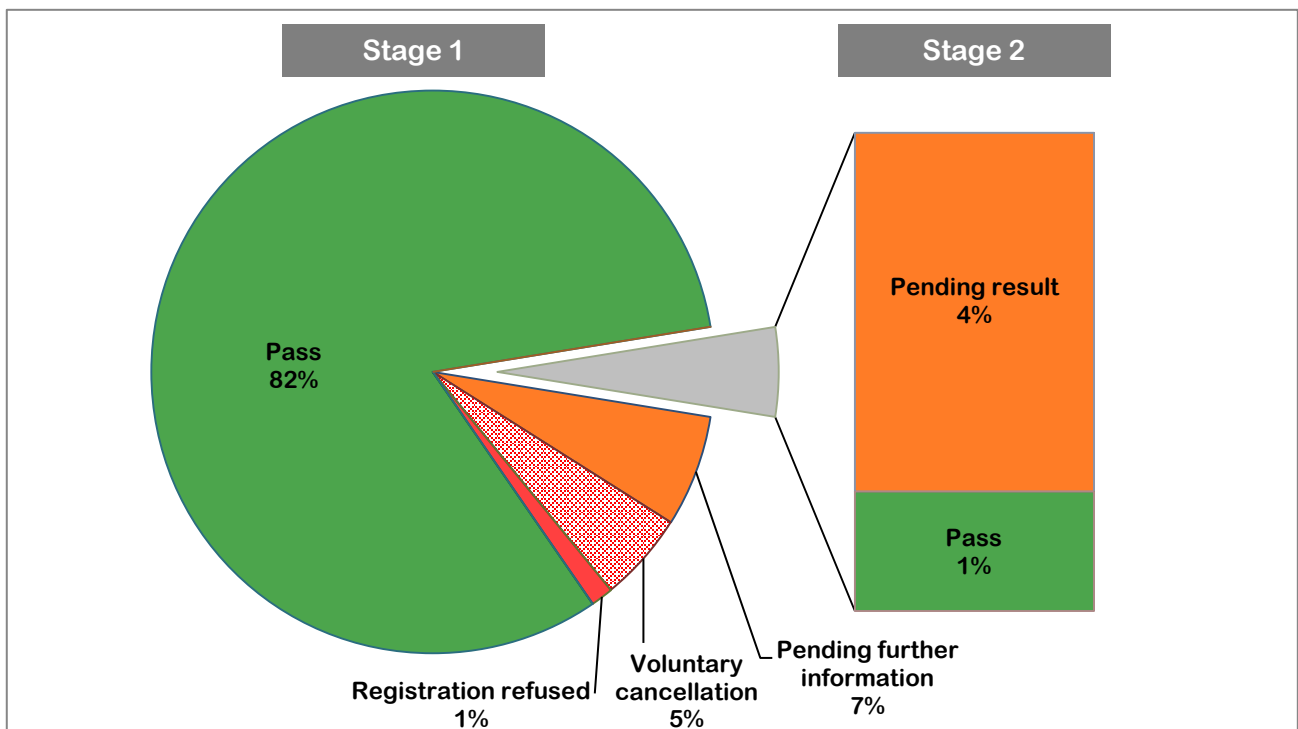
the check test failure, was refused permission to register.

- Five products are either proceeding to stage 2 testing or a decision is pending by the regulator.
- Three products proceeded to stage 2 testing and the results are pending.

The results are shown in Figure 1 and Table 1.

An additional 344 check tests have been commissioned in this six month period, including 330 stage 1 tests on compact fluorescent lamps, nine electric motors, two clothes washers, two dishwashers and one water heater. Due to the long duration of the lamp tests in particular, the results are expected to be reported in the following six month period.

**Figure 1 - Summary of stage 1 check testing results, July-December 2011**



**Table 1: Summary of stage 1 check testing results, July-December 2011**

July-Dec 2011		Results of Stage 1 test failures			
Total	77				
Pass	64	Awaiting further information	Registration refused	Registration cancellation	Proceeding to stage 2 testing
Fail	13	5	1	4	3

# 3. Results by Product Category

This section examines the results for all the 77 products that have been recorded during the period 1 July to December 2011, including those brought forward from the previous period. Results have been recorded on the following eight product categories:

- Air conditioners
- Clothes washers
- Refrigerated display cabinets
- Electric motors

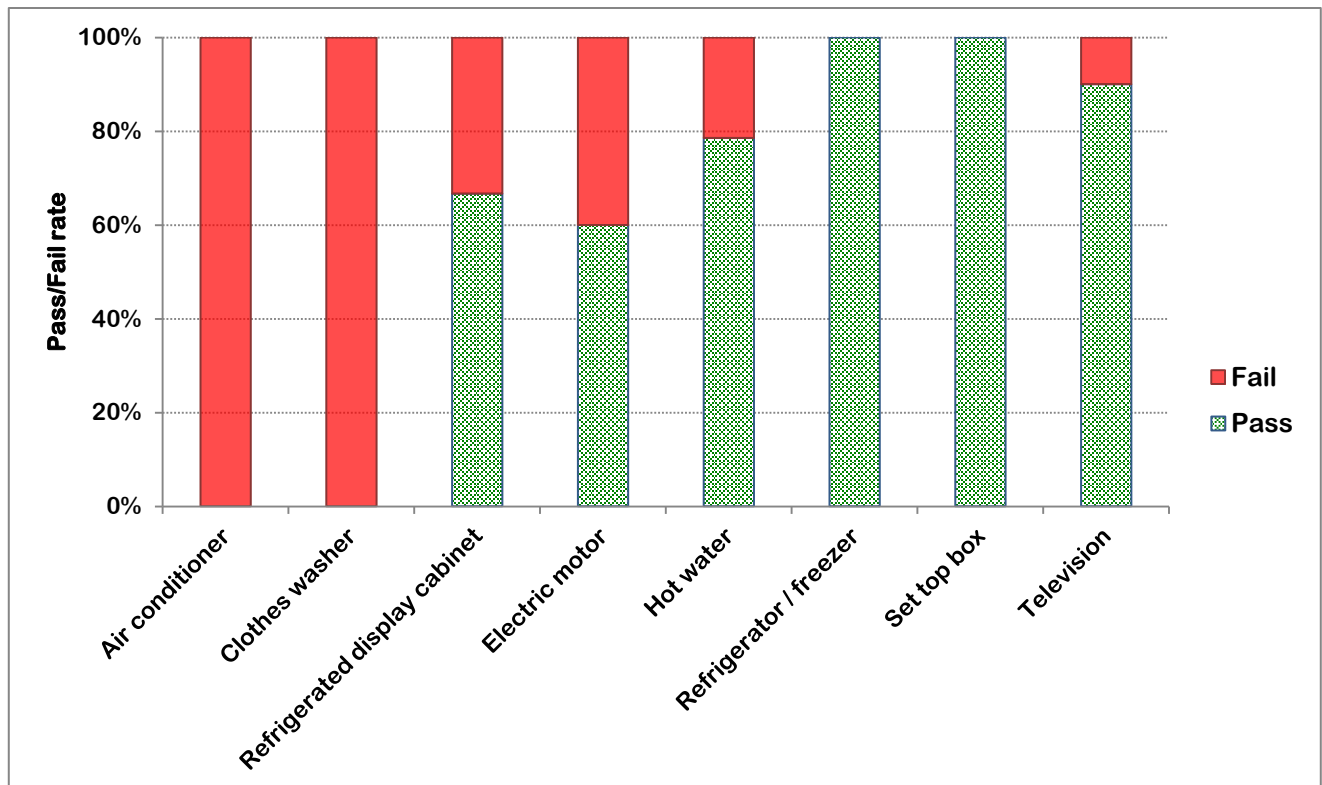
- Water heaters
- Refrigerator/freezers
- Set top boxes
- Televisions

Televisions and water heaters were the most tested products during this period, accounting for 83% of the total. The distribution of tests by product category and the respective results of Stage 1 tests are shown in Table 2 and Figure 2.

**Table 2: Stage 1 test results by product category, July-December 2011**

	Air conditioner	Clothes washer	Refrigerated display cabinet	Electric motor	Hot water	Refrigerator / freezer	Set top box	Television	TOTAL
Total	1	1	3	5	14	1	2	50	77
Pass			2	3	11	1	2	45	64
Fail	1	1	1	2	3			5	13

**Figure 2: Stage 1 test results by product category, July-December 2011**



Overall 64 (83%) products have been judged by regulators to comply with energy regulations with the outcome of 10% of tests still to be resolved. This includes five products that are awaiting a supplier response to failed stage 1 tests and three stage 2 tests that are being finalised.

Of the 13 (17%) products to fail stage 1 tests, four have had their registration cancelled, either at the request of the supplier or because a response was not received to queries from the regulator within the allocated time. Additionally, a television that failed a check test was found not have been registered and was subsequently refused permission to register.

**Table 3: Status of stage 1 failed tests by product category, July-December 2011**

	Air conditioner	Clothes washer	Refrigerated display cabinet	Electric motor	Hot water	Television	TOTAL
Fail Total	1	1	1	2	3	5	13
Awaiting response from supplier				2		2	4
Unregistered product referred to regulator						1	1
Voluntary cancellation of registration	1	1	1			1	4
Registration refused						1	1
Pending stage 2 result					3		3

## 4. Products Tested by Brand

The 77 models tested (including stage 2 tests) represented 44 individual brands, as shown in Table 4. This is a slightly less diverse mix than in the first

half of 2011 when the 74 models tested represented 57 individual brands. 16 brands were common across both periods.

**Table 4: Brands of tested models, July-December 2011**

Brands	Number Tested	Brands	Number Tested	Brands	Number Tested
ABB	1	FISHER & PAYKEL	1	RINNAI	2
AKAI	0	GRUNDIG, BUSH	1	SAMSUNG ELECTRONICS	6
AQUAMAX	3	HELLER	1	SANDEN INTERNATIONAL	1
ARISTON	1	HISENSE	2	SHARP	1
ASKO	1	INVERTEK	1	SMEG	1
AWA	1	LG	6	SONIQ	2
BROOK CROMPTON	1	LOEWE	1	SONY	3
CELESTIAL	1	METZ	1	SUNVIEW	1
CHANGHONG	4	NEONIQ	1	TEAC	3
CMG	1	OMEGA	1	TECOVISION	2
CONIA	1	PALSONIC	2	TOSHIBA	3
DICK SMITH	1	PANASONIC	4	VIVO	2
DUX	1	PANGOO	1	VOXSON	1
E.E. GREEN	1	PASTORKALT	1	VULCAN	2
F.E.D.	1	RHEEM	4		

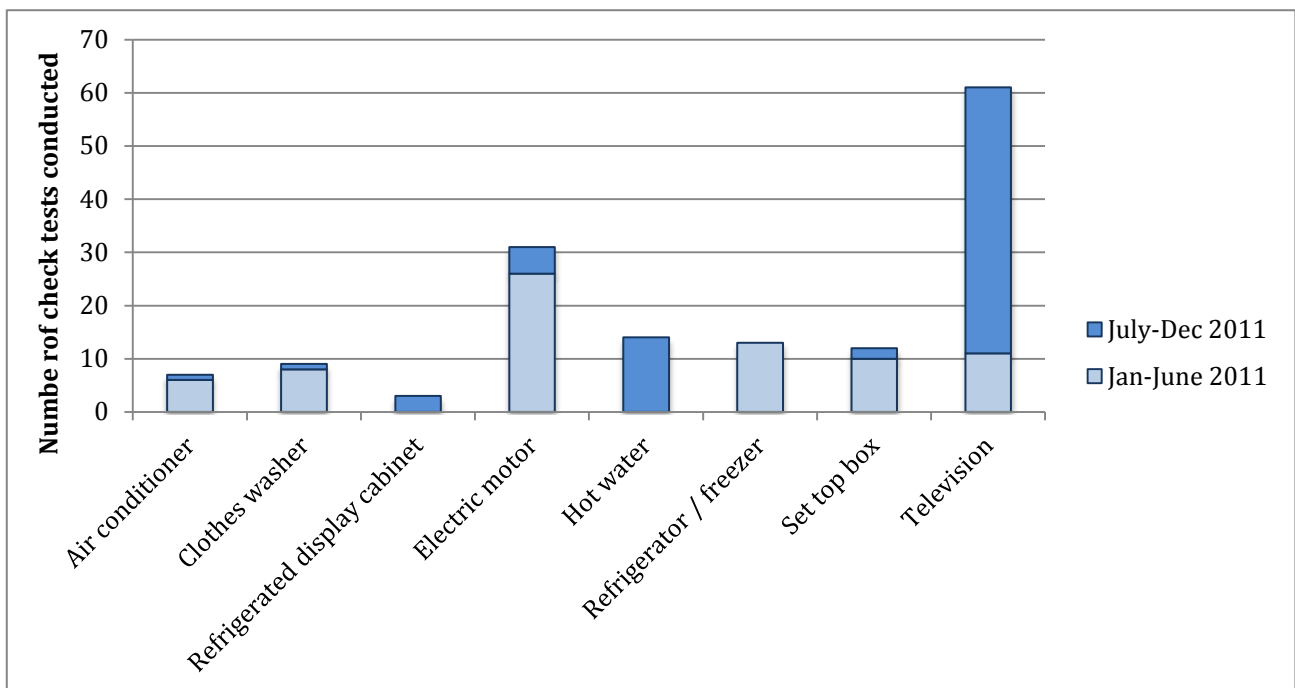


## 5. Comparison with Previous Period

The total number of stage 1 tests concluded between July and December 2011 (76) was slightly higher than the number of stage 1 tests concluded in previous six months (74). As shown in Figure 3, the

majority of tests in the second half of 2011 were conducted on more recently regulated products, in particular televisions.

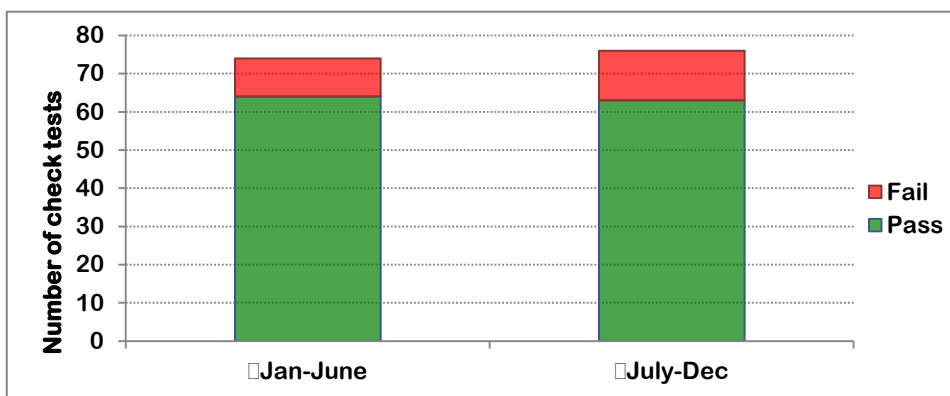
**Figure 3: Distribution of stage 1 tests by product category, July-December 2011**



A comparison of the results between the first and second half of 2011 indicates that the overall stage 1 pass/ fail rate is also very similar (see Figure 4). The results by product category are shown in Table 5,

however due to the difference in the types of products tested in the two periods, a direct comparison of the results is not feasible.

**Figure 4: Comparison of stage 1 test results, Jan-June 2011 vs. July-Dec 2011**



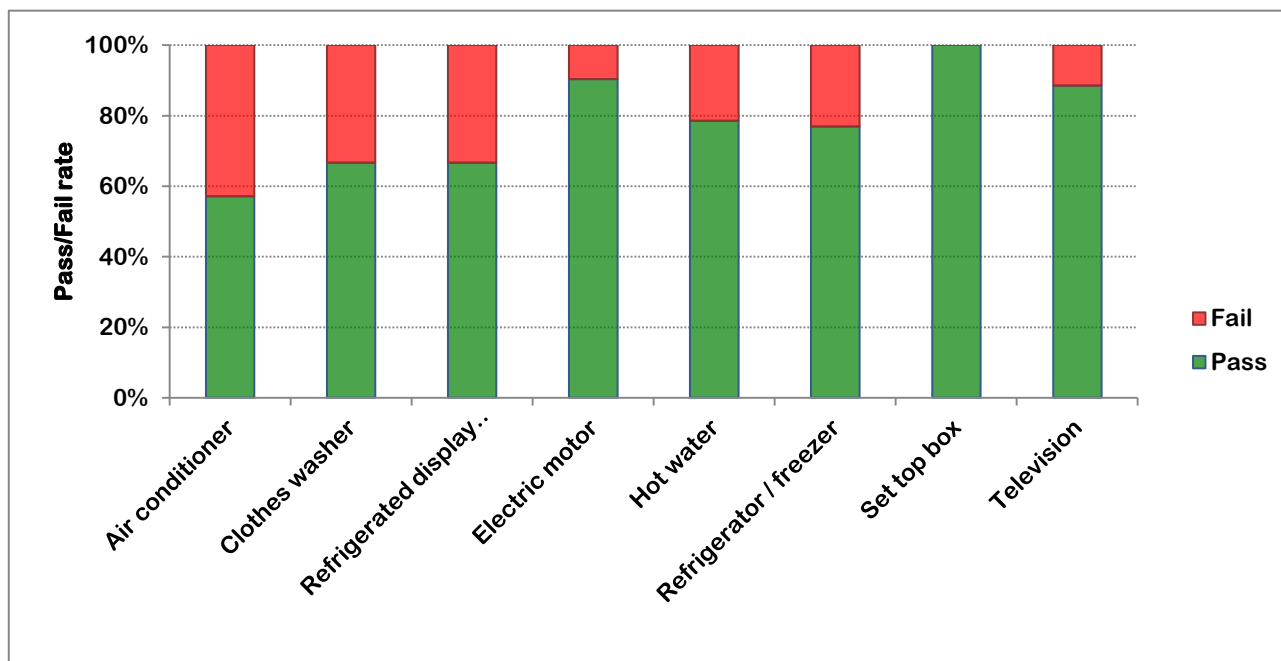
**Table 5: Stage 1 test results by product category, Jan-June vs July-Dec 2011**

	Air conditioner		Clothes washer		Refrigerated Display Cabinet		Electric motor		Hot Water		Refrigerator / Freezer		Set top box		Television		Total	
	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec
<b>Total</b>	6	1	8	1	0	3	26	5	0	14	13	0	10	2	11	50	<b>74</b>	<b>76</b>
<b>Pass</b>	4	0	6	0	0	2	25	3	0	11	10	0	10	2	9	45	<b>64</b>	<b>63</b>
<b>Fail</b>	2	1	2	1	0	1	1	2	0	3	3	0	0	0	2	5	<b>10</b>	<b>13</b>

Combining the results of the two periods suggests an overall pass rate of 85%, although the result of a small number of tests remain unresolved. Clothes washers and refrigerated display cabinets all show a higher than average failure rate (see Figure 5), which could be explained by their small sample sizes. Air conditioners also have a high failure rate, although in this case it was partly due to the pursuit of a

competitor compliant that was supported by a test report from a NATA accredited laboratory, which led to regulators cancelling the registration of three models. It should also be noted that the results for air conditioners and clothes washers have improved relative to tests conducted prior to 2011 (see Table 6). The highest pass rates in 2011 are achieved by set-top boxes, electric motors and televisions.

**Figure 5: Combined stage 1 test results by product category, January-December 2011**



It should be noted that high failure rates for some product categories is not automatically a reflection of higher than average rates of underlying non-compliance in the stock of models, but rather the result of the E3's policy to target check tests at models with a greater likelihood of failure. It is also

difficult to separate these two potential causes, particularly amongst small numbers of tests, where conclusive evidence of non-compliance offered by competitors, for example, can have a major impact on the pass-fail rate.

## 6. Conclusions and Recommendations

**Table 6: Rate of stage 1 check test passes by appliance category, 1991-2010**

Product	Sample No. Tested	Number Stage 1 Pass	Pass Rate
Air Conditioner	220	105	48%
Ballast	25	19	76%
Clothes Dryer	57	42	74%
Clothes Washer	143	68	48%
Distribution Transformer	5	5	100%
Dishwasher	89	51	57%
Electric Motor	90	79	88%
Fluorescent Lamp	29	28	97%
Refrigerated Display Cabinet	35	25	71%
Refrigerator/Freezer	284	170	60%
Water Heater	23	20	87%
<b>Total</b>	<b>1,000</b>	<b>612</b>	<b>61%</b>

The test results from the second half of 2011 are consistent with the pass rates achieved in the first half of the year and compare favorably with the results of 1,000 check tests undertaken between 1991 and 2010.

83% of the 77 tests reported between July and December 2011 passed stage 1 tests and, with the results of 10% still remaining to be finalised, this figure may increase. To date there have been four registration cancellations at the suppliers request as a result of stage 1 failures and one further previously unregistered model was refused registration.

The policy of targeting check tests at products with an above average likelihood of non-compliance means that the results of tests are not a good indication of general compliance rates. However, since the process and criteria for selecting products for testing has remained consistent for many years, the improvement in compliance rates observed in 2011 could suggest that for some product categories there has been a trend towards greater compliance amongst the general stock of products regulated for energy efficiency.

During the second half of 2011, the check testing program has expanded to include a wider selection of product categories, particularly televisions and water heaters. This continues the trend from early 2011 that responds to one of the recommendations from the E3 Report 'Performance Verified'<sup>1</sup> that called for the more equitable distribution of check testing amongst all categories of regulated equipment. Based on tests already commissioned, it appears likely that results during 2012 will include for the first time a significant number of compact fluorescent lamps, however a further expansion of the testing program to include more regulated products is a priority during 2012.

<sup>1</sup> See <http://www.energyrating.gov.au/programs/e3-program/compliance/documents-and-publications/?viewPublicationID=2035>