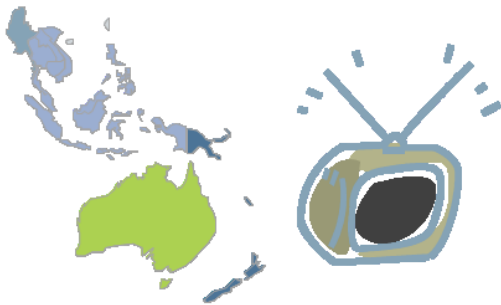
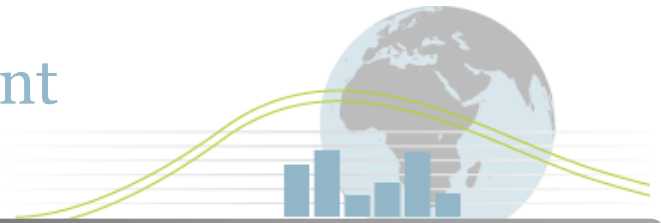


4E

Mapping Document



Country:	Australia
Technology:	Televisions
Sub Category:	All Televisions

Introduction

The first stage in the Mapping and Benchmarking process is the definition of the products, i.e. clearly setting the boundaries that define the products for use in data collection and analysis. Doing this ensures that comparison between the participating countries is done against a specific and consistent set of products.

The summary definition for this product is:

Television sets, defined as:

'A commercially available and mains electricity powered product consisting of a display and one or more tuner(s)/receiver(s) combined in a single housing. It is designed to receive, decode and display audiovisual signals and reproduce sound from analogue sources and/or digital sources that are decoded directly broadcast via satellite, cable or antenna signals. In the case of digital sources, decoding may be via any external adaptor or receiver.'

Data will be analysed based upon actual screen size, but may be presented if necessary in three size 'bins':

Additional later analysis may be planned using data requested on:

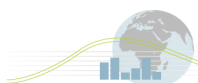
- Screen technology
- Analogue or integrated digital
- HD or not

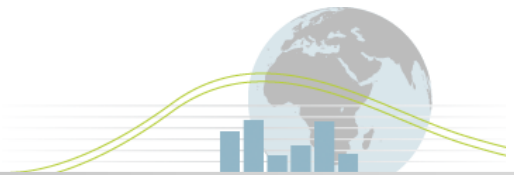
Exclude:

- Combination products (i.e. with integrated DVD player, VCR player / recorder, hard drive).
- Screen sizes under 28cm
- Television monitors and computer displays

The detailed product definitions can be found at the Annex website:

<http://mappingandbenchmarking.iea-4e.org/>





Energy Efficiency of New Televisions Australia

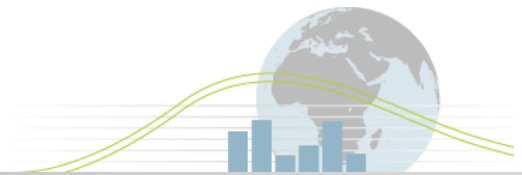


Worst product												7.42	7.42	
Product Weighted Average												4.93	5.07	
Sales Weighted Average												4.98	4.34	
Best Product												3.15	2.64	
Sales weighted average screen size (cm)												76.3	84.4	

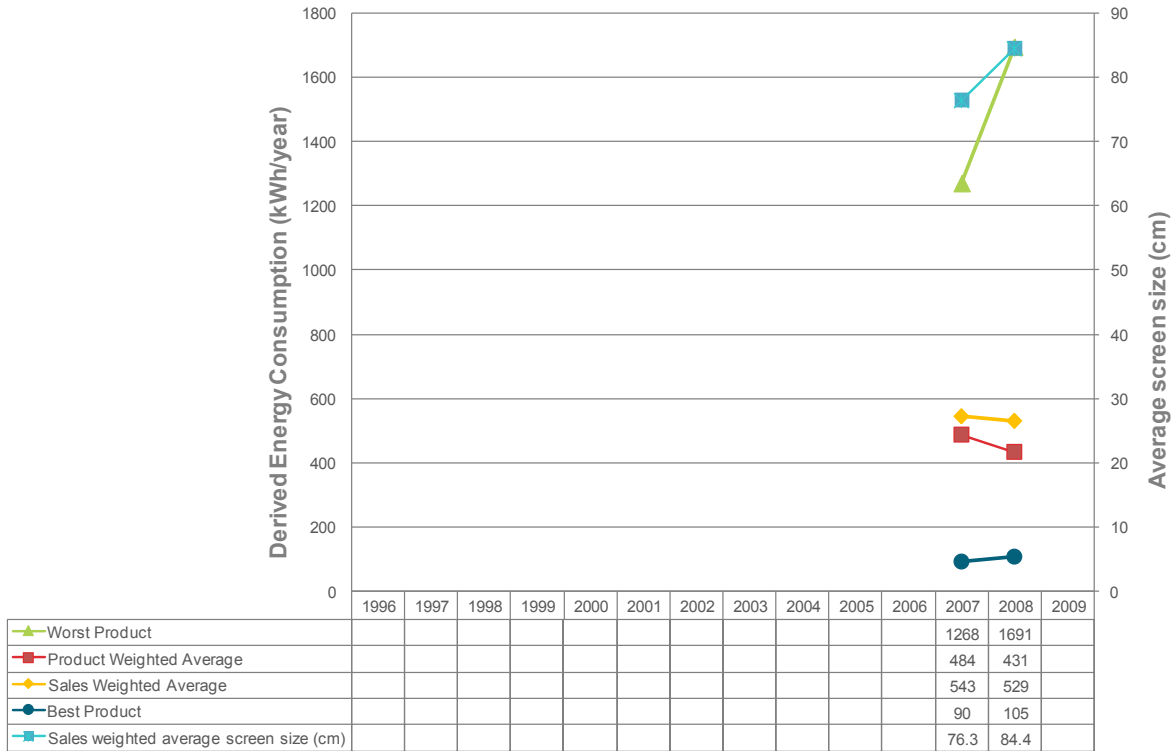
Key notes on Graph (see notes section 1)

- Graph is based upon on mode consumption only per unit screen area (W/dm^2) – not standby.
- Sales weighted screen size data are robust (complete sales data for c. 2,000 products).¹
- Energy efficiency data is statistically much less robust (sample size represented less than 1% of sales for 2008; 20% for 2007) and a mixture of lab test results and manufacturers declared data. Hence 2007 data is more robust than 2008, but may still not be representative of the full market and trends in efficiency may not be reliable.
- In 2008, the most efficient product (per unit screen area) is an 86cm TV (no data for technology type) with $2.63 W/m^2$. The least efficient is a 38cm LCD TV with $7.42 W/m^2$.
- In the 2008 dataset, the screen technology distribution (product weighted, not sales weighted) was: Standard: 0%; LCD: 77%; Plasma: 20%; Other (incl. OLED): 2%.
- Note: Analysis of product efficiency in the benchmarking part of this analysis (comparison between different countries) was based upon an Energy Efficiency Index (EEI), in preference to W/dm^2 . This was to enable fair comparison of efficiencies, since W/dm^2 data is highly dependent upon average screen size which varies between countries.*

¹ Note that sales weighting by screen area (rather than by diagonal dimension) was used to calculate efficiency data, which is necessary for full accuracy.



Energy Consumption of New Televisions Australia

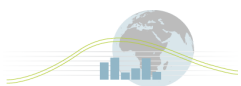


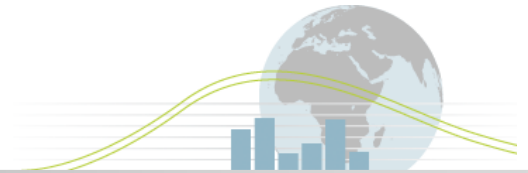
Key notes on Graph (See notes section 2)

- For the purposes of this analysis, a simplified annual consumption is calculated (the Australian Government’s own assumptions are more complete) assuming 2640 hours per year in on mode (2007) and 2660 hours per year in on mode (2008), the remainder in standby, for 365 days per year.

Note that daily viewing is assumed to be 7.3 hours. As this is higher than other countries, consumption data should be compared with caution to others. For this reason on mode consumption (Watts) is used as the metric for consumption in the benchmarking report.

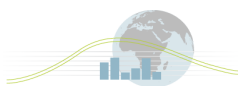
- For 2008, the lowest consuming product is a 43cm LCD television (105 kWh per year).
- For 2008, the highest consuming product is a 178cm LCD screen television (1,690 kWh per year).

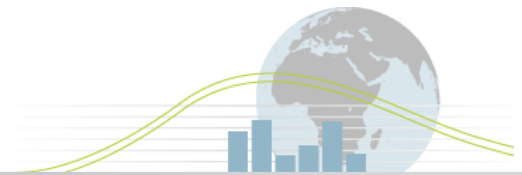




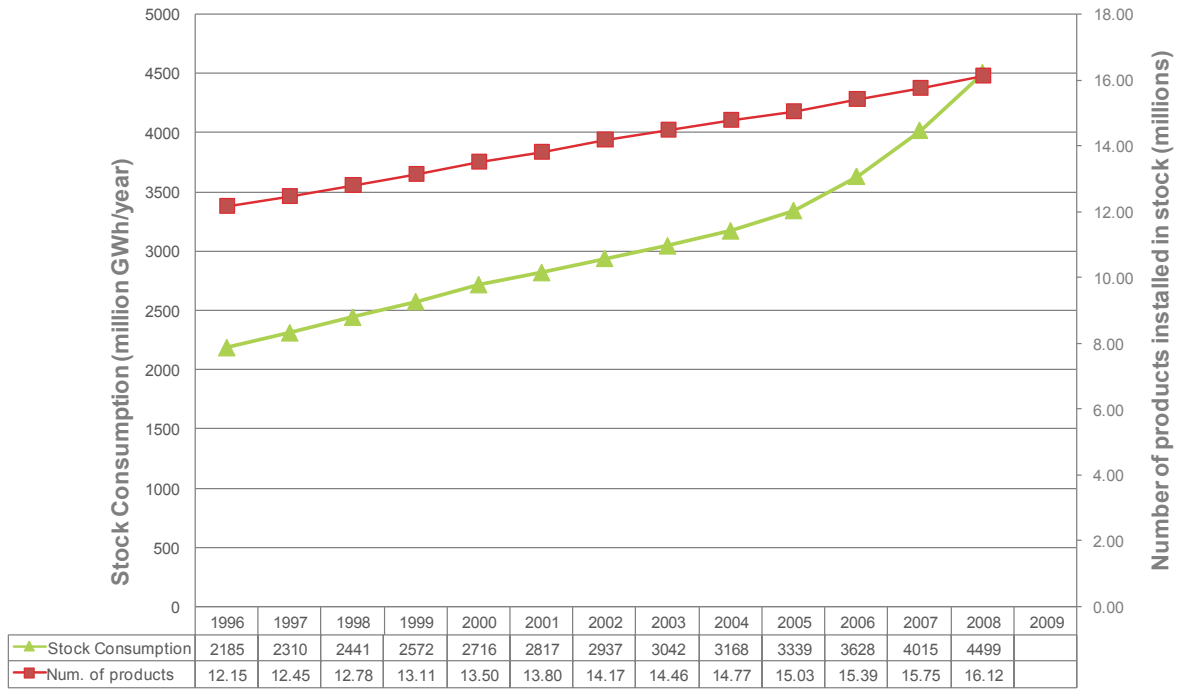
Energy Efficiency in the Installed Television Stock Australia

Insufficient data available for analysis.



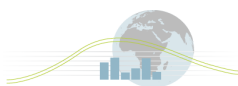


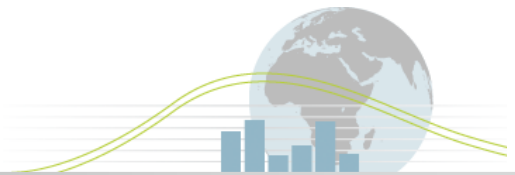
Energy Consumption in the Installed Television Stock Australia



Key notes on Graph (see Notes Section 4)

- Consumption data are Government estimates of total consumption for televisions.
- Stock is calculated from Australian Bureau of Statistics survey data of number of televisions per household multiplied by (ABS) household numbers.
- It is estimated that the average number of television sets per household in 2008 was 1.93.



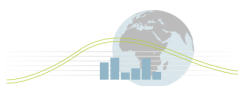


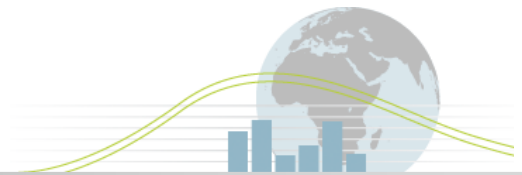
Major Policy Interventions (See notes Section 5)

Voluntary energy labelling of televisions was introduced in Australia in July 2008. The labelling scheme became mandatory on 1 October 2009.

In addition, all models are required to be registered for import and meet mandatory Minimum Energy Performance Standards (MEPS) from 1 October 2009.

A second tier of MEPS is planned to be introduced in October 2012.

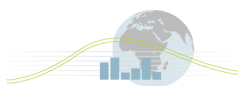


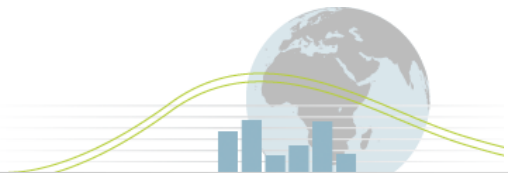


Cultural Issues (See Notes Section 6)

Cultural factors include:

- Increasing floor area in Australian homes (allowing more space for televisions, both in number and screen size)
- Australia is a wealthy country





Notes on data

Section 1: Notes on Product Efficiency

1.1 Test methodologies, Performance Standards and Labelling Requirements

The test methodology for the Australian labelling scheme is AS/NZS 62087.1(Int):2009, requiring use of the same method and video test clip as IEC 62087 Edition 2 (the globally adopted standard).

All televisions imported on or after 1st October 2009 must meet or exceed the Tier One MEPS (Minimum energy performance standards), which is set at the 1 star level (called the Base Energy Consumption) on the mandatory comparative energy label for any given screen size. MEPS are assessed against an annual energy consumption figure which is based on a defined usage profile as set out in the standard. The algorithm for determining the Tier One MEPS level and 1 star rating is set out in AS/NZS 62087.2.2 (Int) 2009 energyrating.gov.au/.

1.2 Product Efficiency Graphic

Source: Two distinct datasets were merged for this analysis: A full list of some 2,000 models with sales figures and product characteristics (but no power data) for 2007 and 2008 was used to derive the sales weighted screen size and screen technology breakdown. Secondly, a mixture of lab test results and manufacturers own declared data (52 models for 2008; 105 models for 2007) were matched by means of model numbers with the sales data set.

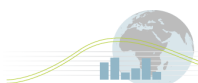
Key calculations undertaken:

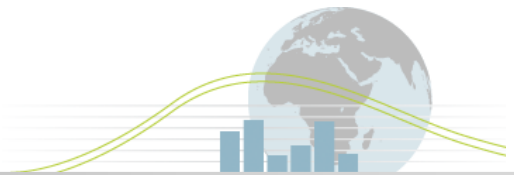
Calculating screen areas: Firstly, convert diagonal screen size cm to dm (divide by 10), square the number, then multiply by the factor below. If no aspect ratio is known, an assumed ratio is used (based on statistical profile of TVs at 2008).

Aspect Ratio	Factor
16:9	0.427299703
16:10	0.449438202
4:3	0.48
Unknown	0.427299703

Usage assumptions:

Hours spent in each mode for all sets were provided (see below). On mode power (W) is multiplied by hours in on mode per year and divided by 1000 to get kWh per year. In this simplified analysis, standby consumption is calculated by multiplying the standby mode power (W) by the remaining hours in the year and again dividing by 1000 to get kWh per year.





Year	Hrs/year
1996	2300
1997	2350
1998	2400
1999	2450
2000	2500
2001	2520
2002	2540
2003	2560
2004	2580
2005	2600
2006	2620
2007	2640
2008	2660

Efficiency (W/dm^2) is W in on mode, divided by screen area in square decimetres (1 dm = 10 cm). Note that for the (subsequent) benchmarking analysis, Energy Efficiency Index is used.

Sales Weighted Energy Efficiency of New Models: (Sum of (Model Energy Efficiency multiplied by sales volume of Model in year) for all Models) divided by (Sum of sales volume of all Models in year)

Model Weighted Energy Efficiency of New Models (used where no sales data is available): (Sum of Model Energy Efficiency for all models sold in year) divided by (Number of Models sold in year)

Proportion of data set included:

Complete sales statistics by model were provided for the Australian market (c. 2,000 models). Whilst this did contain size, technology and other details, it contained no energy performance data. Some energy performance data from laboratory tests (24 in 2008; 49 in 2007) and from manufacturers declared data (28 in 2008; 56 in 2007) were matched to the models in the sales data set. The proportions of the total data sets that were used for energy analysis were as follows:

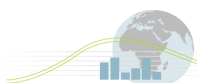
	2007	2008
Products analysed	105	52
Products removed	1988	1814
% of products submitted that were analysed	5%	3%

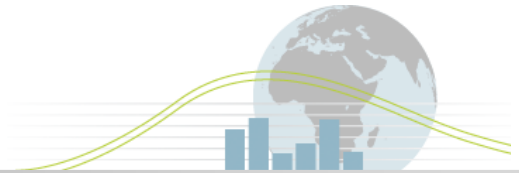
Coverage of Australian data should increase rapidly due to the new policy measures.

Section 2: Notes on Product Consumption

2.1 Test methodologies, Performance Standards and Labelling Requirements

Refer to section 1.1.





2.2 Product Consumption Graphic

Refer to section 1.2.

Section 3: Notes on Efficiency of Stock

No data were available on the screen sizes of installed stock, and so no efficiency calculations could be performed.

Section 4: Notes on Consumption of Stock

This is quoted from Government estimates, published in a 2008 Residential Study: <http://www.energyrating.gov.au/library/details2008-energy-use-aust-res-sector.html>

Section 5: Notes on Policy Interventions

Details are available from <http://www.energyrating.gov.au/library/details2009-factsheet-tv-labelling.html>.

Section 6: Notes on Cultural Issues

None to add.

