

# TELEVISION ENERGY

PERFORMANCE STANDARDS & COMPARATIVE ENERGY



EQUIPMENT ENERGY EFFICIENCY COMMITTEE **E3**

## THE CASE FOR **TELEVISION ENERGY PERFORMANCE**

### **STANDARDS AND COMPARATIVE ENERGY LABELS**

Australians have enjoyed televisions in their homes since 1956. Television has become the focal point for much of our family entertainment, so much so that there are now the equivalent of 2.4 televisions in each household, with total stock exceeding 18 million television receivers in Australia.<sup>1,2</sup> There soon will be one TV for each person in Australia.<sup>3</sup>

Televisions were originally rejected as a candidate for energy labeling in the early 1990s. The mandatory energy rating label enables consumers to compare the efficiency of domestic appliances on a fair and equitable basis. The label also encourages manufacturers to improve the energy performance of appliances by communicating differences to consumers. The label was mandated nationally for refrigerators, freezer, clothes washers, clothes dryers, dishwashers and consumer air-conditioners from 1992.

The reasons for rejecting a mandatory label for televisions ranged from the practical – no simple measurement test method was then available – to the potential impact on consumer choice – televisions' power use was then relatively small and screen size determined power consumption. Before 2000 most televisions were cathode ray tube types averaging 51cm screen size and consuming around 70 W in "on-mode". Standby power consumption was minimal, as most TVs still had a mechanical On/Off switch ensuring no power consumption when the television was not being used. The number of televisions was only slightly higher than one in each household and few peripheral devices were attached to televisions.

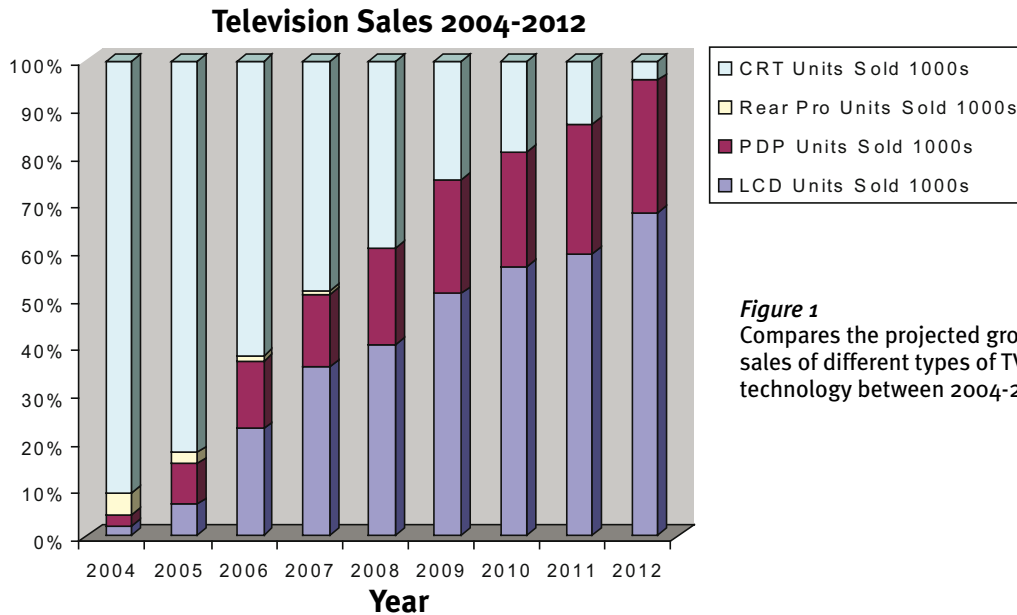
Power consumed by televisions has changed dramatically in just the last decade. Industry experts predict that by 2012 (the date for the phase-out of the analogue signal) over 90% of new televisions sold will

be LCD or Plasma types. In November 2006, Australia became the first western country where sales of these technologies overtook cathode ray tube sales. Today, the average Australian home has 2.4<sup>4</sup> televisions watched by at least one family member for between 5<sup>5</sup> -8 hours a day<sup>6</sup>. Televisions are on sale which consume almost 700 kWh each year or almost twice the mandatory maximum allowance of a small family-sized refrigerator.

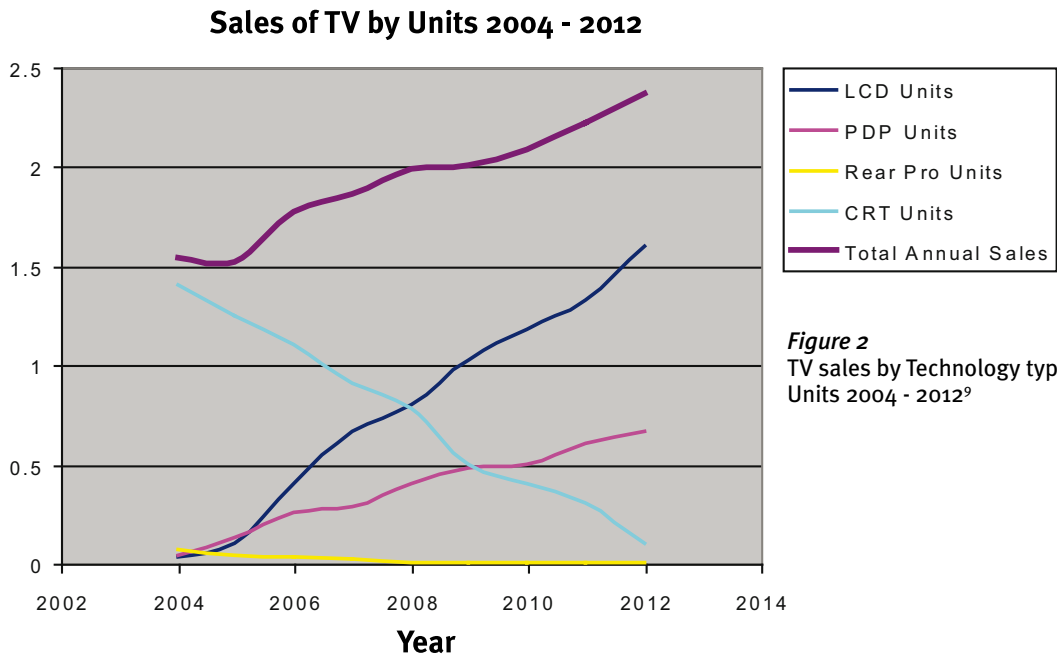
Viewing of TV is also changing. In 2006 there were 1.8 million subscription TV viewers. Given the increased

choice that exists with 'Pay TV', due to the number of channel offerings, it seems reasonable to postulate that the increased choice will lead to longer viewing hours. Currently a 10% increase in viewing time is evident.<sup>7</sup>

*Figs 1 and 2* also show the dramatic change that has already started to occur, and is forecast to continue, between the differing technologies. The lower power consuming CRTs are being replaced with the much more energy thirsty LCD and Plasma TVs.



**Figure 1**  
Compares the projected growth in sales of different types of TV technology between 2004-2012.



**Figure 2**  
TV sales by Technology type in Units 2004 - 2012<sup>9</sup>

<sup>1</sup> 7.6 million households, Australian Bureau of Statistics Year Book Australia 2007  
<sup>2</sup> ACA Submission to House of Representatives Standing Committee on Communications, Technology and the Arts May 2004.  
<sup>3</sup> 20.3 million people, Australian Bureau of Statistics Year Book Australia 2007  
<sup>4</sup> ACA Submission to House of Representatives Standing Committee on Communications, Technology and the Arts May 2004.  
<sup>5</sup> Get the Picture Fast Facts [www.afc.gov.au](http://www.afc.gov.au)  
<sup>6</sup> Sydney Morning Herald September 25th 2006 and Television Bureau of Advertising 2006  
<sup>7</sup> Get the Picture Fast Facts [www.afc.gov.au](http://www.afc.gov.au)  
<sup>8</sup> Forecast form Australian Digital Suppliers Industry Forum (A Forum of AEEMA) 2006  
<sup>9</sup> Forecast form Australian Digital Suppliers Industry Forum (A Forum of AEEMA) 2006  
<sup>10</sup> Programs such as the USA's Energy Star and Japan's Top Runner program have already influenced the introduction of more energy efficient product.

## Annual Power Consumption of Household Appliances by Appliances per Household

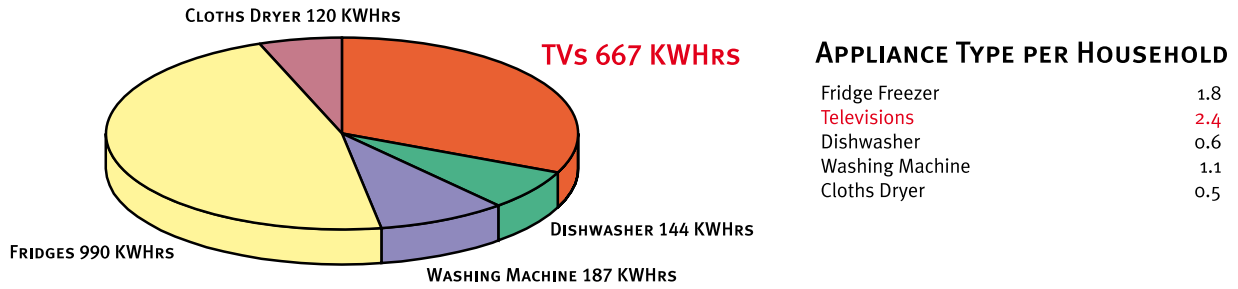
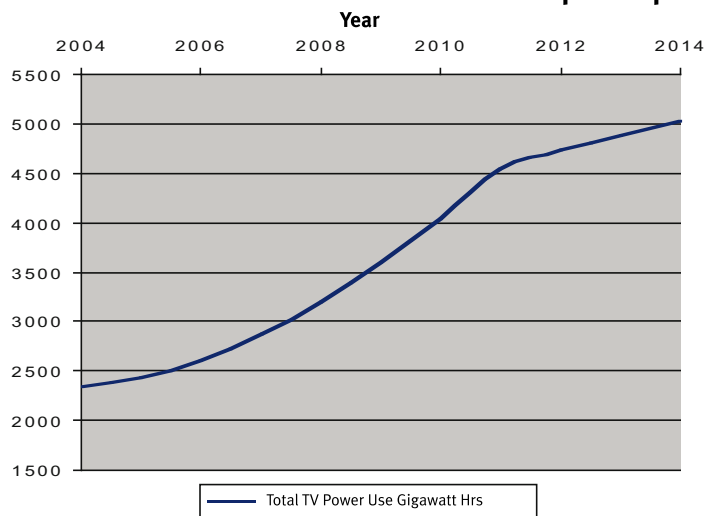


Figure 3 - Comparative Power Consumption of Selected Household Appliances.

Television now ranks behind three already regulated product types: domestic refrigeration; space heating & cooling, together with water heating, as major contributors to greenhouse gas emissions from the stationary household sector.

### Total Annual TV Power Use from 2004 - 2014



'The energy consumption of televisions is also projected to get worse, in the absence of market interventionist measures. Figure 4 projects future television energy use doubling over the decade commencing 2004. The reasons for the substantial increase in power consumption are consumers' preference for larger screen sizes overlaid by the rapid adoption of LCD and plasma technologies replacing CRT. In 2006/7 the anticipated dominant CRT screen size will be 68 cm (up from 51cm). For LCD, the anticipated average screen size will be in excess of 81cm and for plasma greater than 106cm (or more than double the size when television measures were rejected for this energy hungry technology).

Figure 4  
TV Power use projected to 2014

Since the initial rejection of labeling for televisions, a number of fundamental changes have occurred that suggest the question of regulation should be re-considered. Under the auspices of the International Electrotechnical Commission (IEC), a simple measurement standard is being developed to measure the energy consumption of televisions. This method is developing global acceptance from governments and industry groups. Some countries like China have even introduced mandatory energy performance standards while Japan and the USA have long supported voluntary measures demonstrating local measures can now be based around international practice.

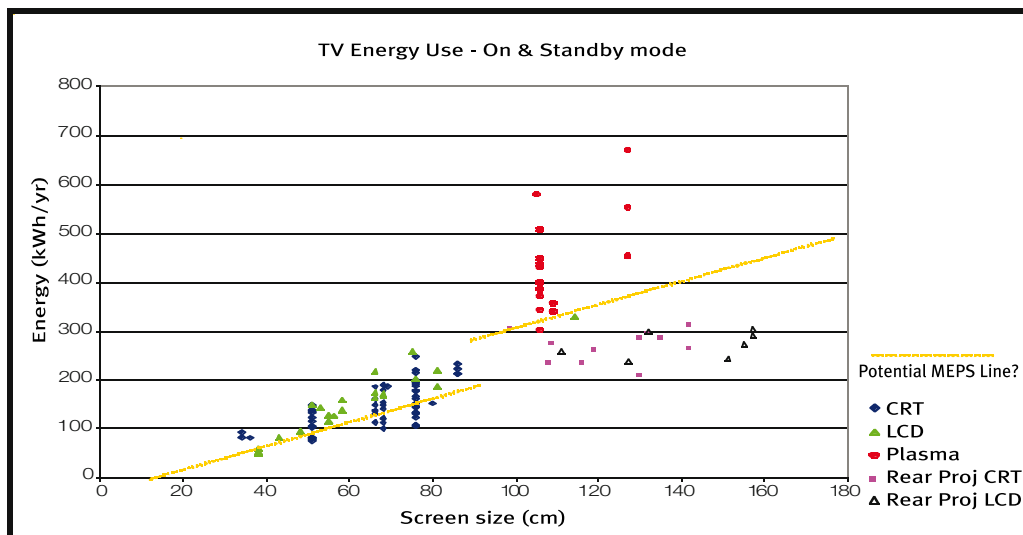


Figure 5  
TV Energy Use by screen size derived from In Store Measurements<sup>10</sup>

Figure 5 shows the wide spread of measured power use for televisions using different technology when compared by screen size. For any given screen size there is large variation between the low and high energy use, by orders of magnitude. This data indicates that not only is there excellent scope for effective minimum energy performance standards to eliminate poorer performing TVs from the market in Australasia, but that a mandatory labeling program would empower consumers to make informed choices, both within technologies, and across all technologies for this product category.

Televisions remain an unregulated part of the residential sector, but the reasons for maintaining that status have disappeared. Moreover, consumers cannot be expected to undertake the detailed market research to compare the energy efficiency of differing technology types in such a volatile and changing marketplace. This is the legitimate role of government especially where suppliers have not informed customers of the energy and greenhouse impacts caused by televisions nor of the looming problems in the future.

In this situation where television energy requirements continue to grow unabated, and given the lack of any effective information schemes operated by suppliers in

Australia or New Zealand, it is no wonder the community has little understanding of how, in such a short period of time, television power consumption has risen to its present levels. Regulation in the form of mandatory labeling and performance standards represent a cost effective way of addressing this market failure.

Compelling evidence exists that there is scope to reduce television energy usage through an energy labeling scheme. Survey results (see below) also indicate that consumers are strongly in favour of energy labels on television.

As consumers begin to understand the energy consumption issues of TVs through a labeling scheme and favour the more energy efficient, manufacturers will respond with improved designs that will lower energy consumption to attract consumers to their product.

The world-wide efforts within the IEC (with Australasian expert participation) provides a timely window for a coordinated MEPS and labeling scheme to be introduced in Australasia improving TV efficiency across all technology types.

# Results of AC Nielsen Telephone Omnibus Survey

n=1400 nationally 18yrs+

March 8 – 10, 2007

Q. A Should the government and leading industry suppliers introduce mandatory energy efficiency labels on television sets, or not? PROBE: Should they definitely or probably (not) introduce mandatory energy efficiency labels?

Should definitely introduce labels	63	} 85% favour TV labels
Should probably introduce labels	22	
Should probably not introduce labels	7	} 12%
Should definitely not introduce labels	5	
Unsure	3	
TOTAL	100%	

Q.B If mandatory energy efficiency labels were introduced for TVs, how likely is it that you would take the label information into account when purchasing your next TV... extremely likely, very likely, quite likely, not very likely, or not at all likely?

Extremely likely	37	} 86% likely to use TV labels
Very likely	29	
Quite likely	20	
Not very likely	5	} 11%
Not at all likely	6	
Unsure	2	
Would not buy (another) TV set	1	
TOTAL	100%	