EFFICIENCY POLICY BR

Mapping & Benchmarking of Televisions



The IEA's 4E Mapping and Benchmarking Annex provides policy makers with evidence based comparisons of the performance of products sold in various national markets. This allows benchmarking of the success of national policies in managing product energy consumption and efficiency and enables identification of opportunities to further encourage the uptake of energy efficient products.

This briefing describes the outcomes of the international comparison of televisions. The analysis includes information drawn from Australia, Austria, EU, France, Republic of Korea, Switzerland, United Kingdom and USA.

Observations for Policy Makers

- Growth in screen size: The area of the average television screen in Switzerland, which is the only available indicator of longer term EU trends, doubled between 2000 and 2008, equivalent to 60% higher on-mode power. But all available data suggests that screen area growth slowed to only 4% between 2007 and 2009, which would add some 7% to energy consumption for the same usage and efficiency.
- Impact of large plasma screens: The average new plasma screen consumed twice the power of the average new LCD screen in 2009, when plasma screens had market shares between 8% and 30% in different countries. Plasma screens consume more energy partly because they tend to be larger, but in 2009 their efficiency (power per unit screen area) also appeared at least 35% poorer than LCD screens. However, there are signs that the efficiency of plasma screens is improving.
- New and emerging technologies are improving screen energy efficiency and could offset the impact of increasing screen size depending upon their ability to capture market share.
- The introduction of new functionality in televisions may increase on-mode power slightly and also increase viewing hours leading to increased energy consumption. Additional tuners, Web/Internet features or 3D technologies may add a few watts each to power demand.

More Information

All publicly available Annex mapping and benchmarking outputs are available on the Annex website at **http://mappingandbenchmarking.iea-4e.org**. For further information email: **contact@mapping.iea-4e.org**

Key Findings

Screen Size and Technology

The average screen size (all types) was 82 cm diagonal in 2009. Growth has slowed significantly in recent years: 2007 to 2009 showed under 3% screen size growth for LCD and 2% for plasma. LCD sales dominated in 2009 accounting for nearly 50% of the market in the Republic of Korea to just over 90% in Austria. CRT represented less than 5% of sales in most markets but almost 25% of sales in the Republic of Korea. The uptake of new technologies, such as LED back-lit LCD screens and OLED screens, is improving the average energy efficiency in many countries.

On Mode Power

On mode power (W) is a useful indicator of energy consumption. The 2009 average across three countries was 145 W for new sales of all technologies. Average on mode power for CRT was 74 W (2007); LCD 134 W (2009); and plasma 287 W (2009). These figures reflect the variations between the different technologies in both efficiency levels and average screen size.

Energy Efficiency Index (EEI)

EEI indicates overall efficiency regardless of screen size; with the range lying between 0.3 (the most efficient products) and over 2 (the poorest). The overall average EEI for all technologies for 2009 was 0.95 - an 8% improvement from 2008. The EEI in 2009 for LCD screens was 0.87 and for plasma was 1.19.

Standby Power

There has been continued improvement in the average passive standby power of televisions across all reported countries, with levels falling from 4.4 W in 2000 to 0.6 W in 2009. However, higher power (non-default) standby modes are emerging such as rapid start where examples have been found to draw over 17 W.

This policy brief is based on a full report published in October 2010. Data quality varies between countries and graphs. See full report for details. The IEA Implementing Agreement on Efficient Electrical End Use Equipment has made its best endeavours to ensure the accuracy and reliability of the data used herein, however makes no warranties as to the accuracy of data herein nor accepts any liability for any action taken or decision made based on the contents of this report.