4E Efficient Electrical End-Use Equipment
International Energy Agency

iea Energy Technology Network

ENERGY EFFICIENCY POLICY BRIEF

Mapping & Benchmarking of Domestic Washing Machines

MB2

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 domestic washing machines (clothes washers). The analysis includes information drawn from Australia, Austria, Canada, China, Denmark, the EU, Republic of Korea, Switzerland, UK, USA.

Observations for Policy Makers

- **Significant initial differences in washing machine unit energy consumption between countries** have reduced markedly in recent years with normalised unit energy consumption per cycle in almost all countries converging.
- **Challenging and *regularly revised* MEPS appear to have been the most effective method of reducing consumption,** while the combination of mandatory labelling and a voluntary agreement with industry has had mixed effects.
- **Where the market penetration of top loader units is still high,** implementation of policy to encourage consumer switching to more efficient front loader units would yield significant energy savings.
- **Increasing unit capacities are partially responsible for improvements in unit energy efficiency.** However, if the actual size of laundry loads is not increasing in line with increases in unit capacity, consideration should be given to limiting unit size and/or capping energy consumption for products over a certain size.
- **Spin effectiveness is improving in all countries where measured.** However, as manufacturers strive to reduce energy consumption, it is possible that spin effectiveness *may* be reduced thereby increasing drying energy. Therefore, consideration should be given to following the Canadian and USA example of including residual moisture requirements for labelling and MEPS.

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**

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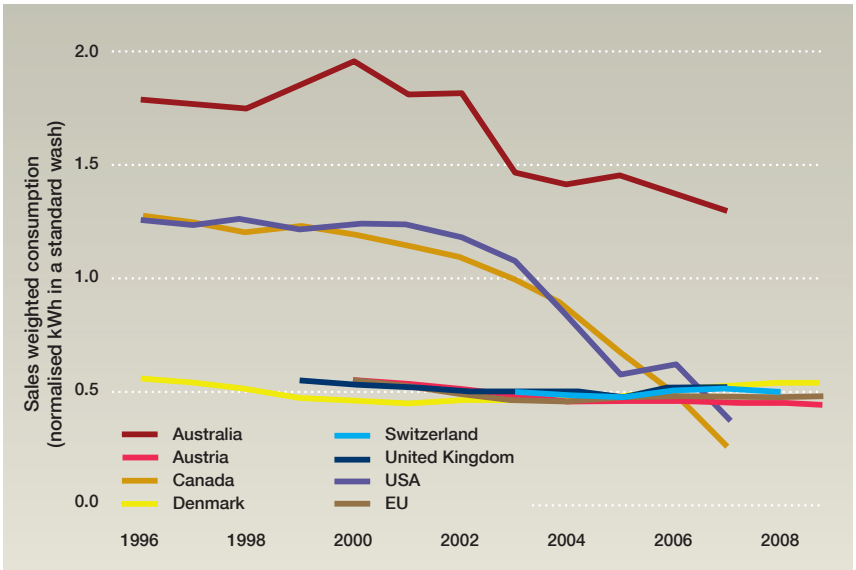
Key Findings

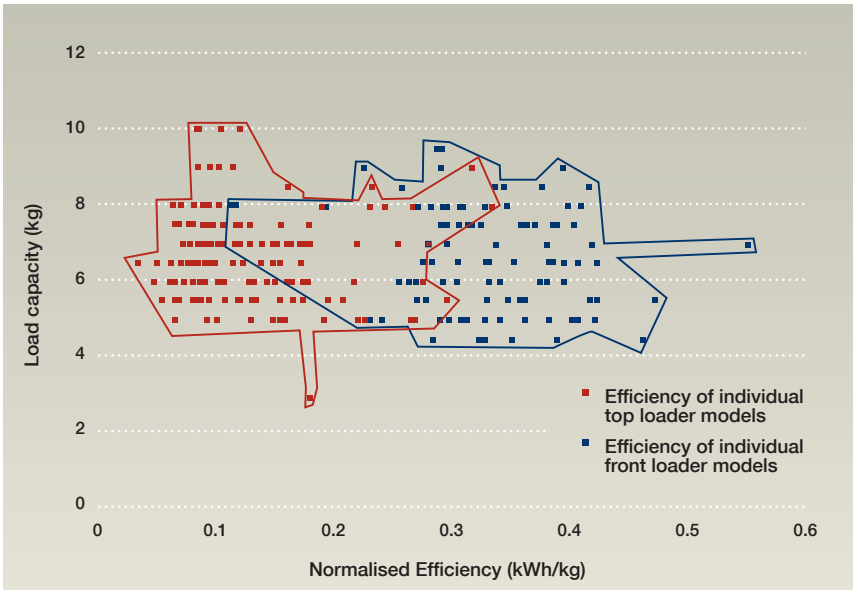


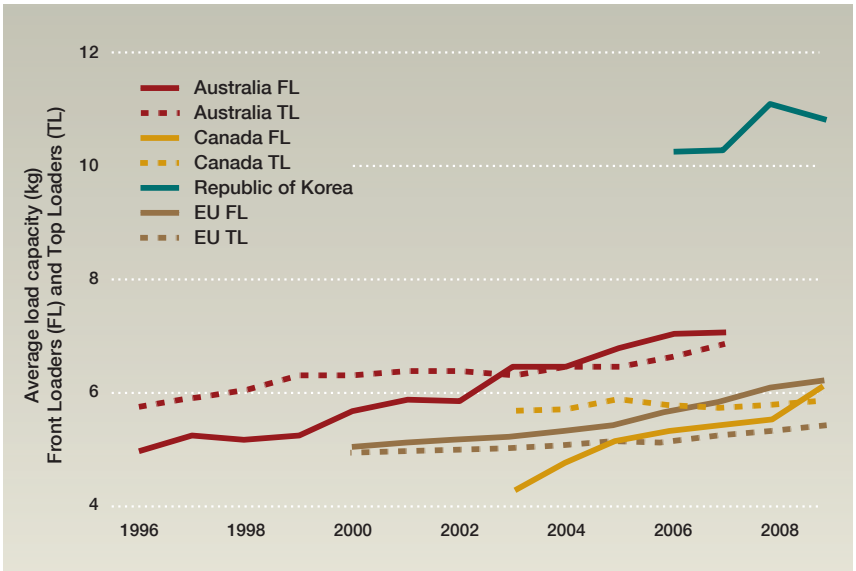
Energy Consumption

All countries have seen improvements in unit energy consumption. It is likely that the normalised average unit energy consumption is broadly comparable across all countries at around 0.5 kWh per wash cycle. Australia appears to have significantly higher consumption when normalised, however this is misleading since most Australians use cold washes, and the market is regulated accordingly.

Differences in Top and Front Loader Energy Efficiency

In a number of markets there is a distinct difference in the efficiency (consumption per kilogramme of load capacity) of top and front loader units. Where this is the case, vigorous policy to promote efficiency of top loading units, or to encourage consumer switching from top to front loader units, will yield significant improvements in overall product efficiencies.





Trends in Load Capacity

The rated load capacities of washing machines are increasing in almost all countries and there is no indication that these increases are reaching a plateau. This ongoing increase in volume is at least partly responsible for increasing product efficiency. However, the benefit of this capacity driven efficiency improvement diminishes if consumers no longer load the larger machines to capacity.

This policy brief is based on a full report published in April 2012. Data quality varies between countries and graphs. See full report for details.