

# Mapping & Benchmarking of Dishwashers

The IEA's 4E Mapping and Benchmarking Annex provides policy makers with evidence based comparisons of the performance of products across international boundaries. This allows benchmarking of the success of national policies in managing product energy consumption and efficiency and enables identification of opportunities to further optimise product performance.

This briefing describes the outcomes of an international comparison of the energy consumption of dishwashers and includes data analysis of information drawn from Australia, Austria, Canada, Denmark, the European Union (EU), the Republic of Korea, Switzerland, the UK and the USA. It is one of a series of briefings covering commercial, domestic and industrial products.



## Observations for Policy Makers

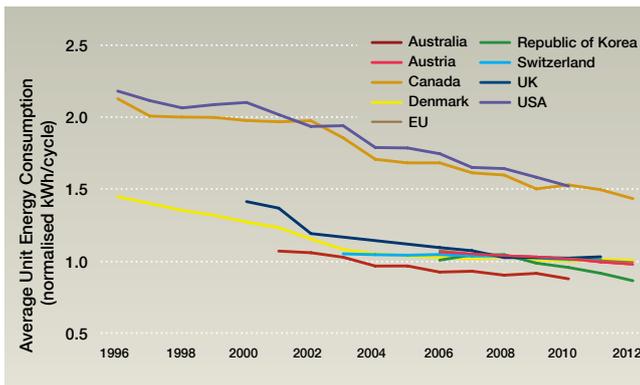
- **The average unit energy consumption (UEC) of dishwashers has fallen** in all regions by an average of 1.9% each year since 1996. Since average capacities have remained relatively stable over the same period, the energy efficiency of dishwashers is improving at a similar rate.
- **Dishwashers in Canada and the USA typically use over 40% more energy than those in other markets.** This is largely driven by products that use a hot water fill and have powered drying. Policy makers in North America may wish to consider whether it is beneficial to replicate the more efficient approach to these aspects used in other markets.
- **There is evidence that regulations (such as minimum energy performance standards (MEPS) and energy labels) have helped to drive improvements in energy efficiency** in all markets. However, the best performing products still use considerably less energy than the average, suggesting that there remains scope for more aggressive measures.
- **The average UEC is similar for both larger capacity dishwashers and mid-sized models.** In larger machines, energy savings are achieved partly through the use of technologies designed to create additional space within the dishwasher. Although these may carry a price premium, this suggests savings will also be possible in smaller models.
- **Energy savings are also being delivered by lengthening cycle times** which have increased by as much as 200% in one market since 1996. Understanding the price impact of different energy saving technologies and the acceptability of longer cycle times will help policy makers set appropriate MEPS and label levels.

## 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](mailto:contact@mapping.iea-4e.org)

## Key Findings

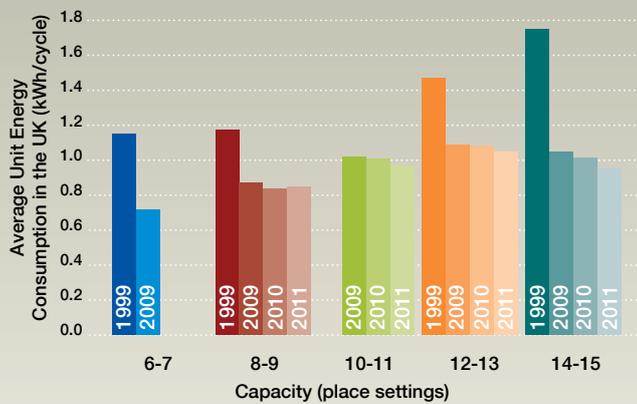
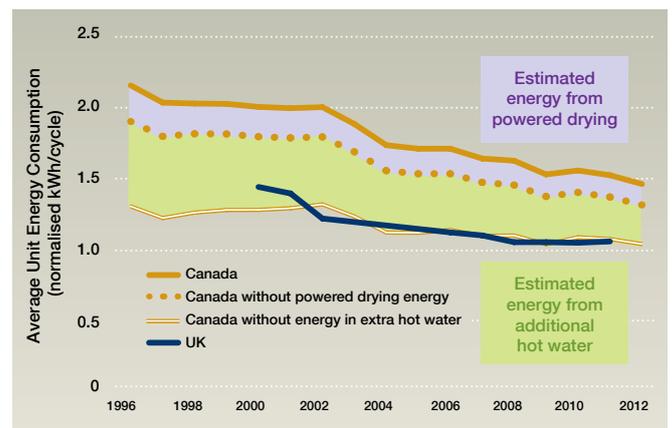


### Significant reductions in consumption

All countries/regions have seen consistent reductions in the unit energy consumption (UEC) of dishwashers over the past decade. Although the rate of reduction has diminished in recent years, in most markets the average UEC is now at or below 1 kWh/cycle. Despite having very similar capacities however, dishwashers in Canada and the USA use significantly more energy.

### Differing products between markets

Two important differences in Canada and the USA are responsible for these higher UECs. Firstly, most north American dishwashers have a powered drying function where hot air dries the load. Secondly, north American dishwashers not only use more water, but typically all of it is from a hot feed. The larger amount of hot water is estimated to account for around 70% of the difference between Canadian and UK models.



### Size matters less

Unusually, average energy consumption changes little with variations in the capacity of a dishwasher. This is partly because additional place settings do not require significantly more hot water. However, more energy will be needed to raise the temperature of the extra dishes themselves. Larger capacity models save energy partly by utilising more efficient technologies that also take less space. It should be possible to extend the use of these technologies to make similar savings in smaller models.

### Continued scope for improving efficiency

In Australia the best performing products use 35% less energy than the current average. This illustrates the potential for further savings, particularly since the Australian market has the most efficient product range of all markets examined.

