Efficient Household Appliances

Simple ways to save money, energy and carbon

Time to Change
for a more efficient appliance

AMDEA™
The Association of Manufacturers of Domestic Appliances

Energy in, energy out

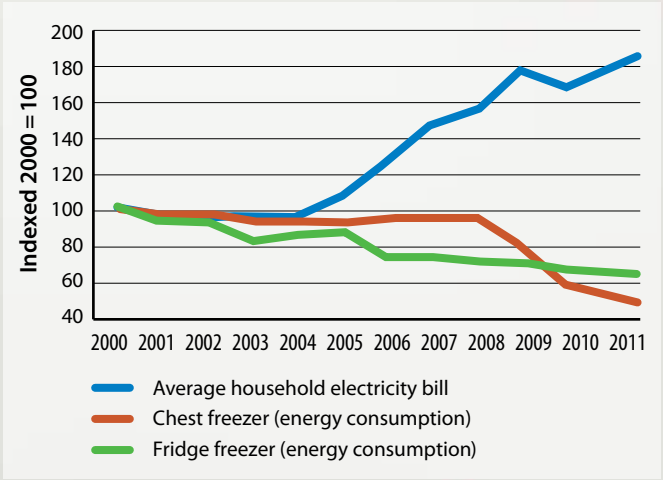
Between 2000 and 2011 household electricity bills increased by an average of 85% and electricity prices by 81%.[1]

By contrast the members of AMDEA, the Association of Manufacturers of Domestic Appliances, have transformed the energy efficiency of major domestic appliances such as fridges, freezers, washing machines and tumble dryers, for example since 1990:

- Fridge freezer electricity consumption has practically halved (-49%)
- Chest freezer consumption has dropped by almost two thirds (-65%)[2]

This matters because:

- large kitchen appliances that chill, wash, dry or cook comprise between them around 44% of total household electricity consumption[3]
- energy prices are often highest for those who can least afford them
- the oldest appliances are often in the homes of the elderly
- in the UK more than 11 million 'cold appliances' are more than ten years old[4]



1 DECC, Domestic Energy Consumption in the UK, Table 2.2.2 Average annual domestic standard electricity bills for UK countries (standard credit accounts) England/Wales

2 Ibid, Table 3.13: Energy consumption of new cold appliances

3 Intertek, 2012, Report R66141, Household Electricity Survey A study of domestic electrical product usage, Fig 289

4 Market Transformation Programme, 2007, Domestic Appliances Early Replacement DBN Table 2

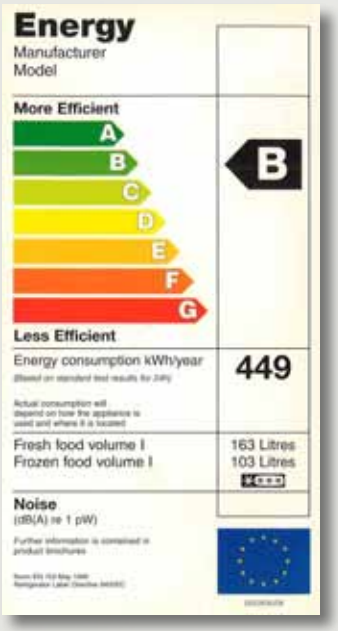
‘Off the scale’ energy savings

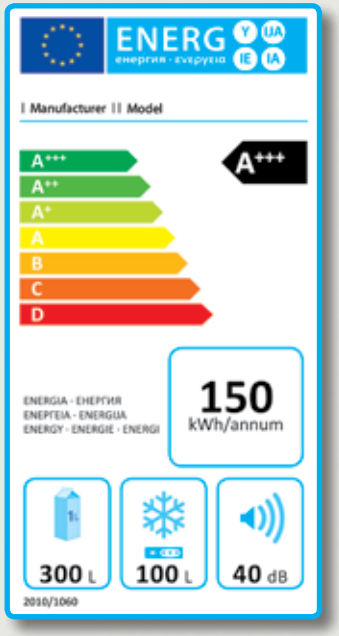
Energy labels were brought in across the EU in the early 1990s to help consumers to identify the relative energy efficiency of appliances at a glance.

Manufacturers immediately responded with continual innovation to deliver ever greater energy efficiency, whilst improving effectiveness and reliability. Just some of these innovations were:

- High efficiency motors
- Greater insulation
- More water efficient wash cycles
- Heat pumps integrated into tumble dryers

When added together these made a great deal of difference, quickly driving inefficient technologies from the market and leading the EU to add new higher efficiency bands such as A+, A++ and A+++ and remove lower bands as they have become obsolete.





Real life savings

Whilst official data demonstrate savings, real life measurements on appliances in use in the UK suggest that these can be very significantly understated. There are also considerable savings from changing consumer habits.

University of Surrey pilot study

AMDEA commissioned the University of Surrey, to investigate in depth the link between consumer behaviour, the energy efficiency of appliances and householder attitudes in real 'green-minded' homes. This showed:

- Perceived cost was the major, or principal, factor driving their environmental behaviour
- All were keen to switch off lights and phone chargers, avoid standby etc
- They had limited understanding of energy labels

When their 5-10 year old appliances were changed for fairly standard up-to-date (A or A+) models:

- fridge freezer replacement typically yielded electricity savings of 40% to 60%
- dishwashers and washing machines saved between 8% and 21%
- an A++ tumble dryer saved 39%

All of these savings were achieved with no changes at all to consumer behaviour.

When consumers were asked to adjust their habits the further savings were dramatic. Simply switching to a lower temperature wash yielded energy savings of:

- between 35% and 59% on washing machines
- 19% to 34% on dishwashers

These savings are also potentially cumulative – saving money by changing appliance AND behaviour leading to greatly increased overall savings.

Household Electricity Use Survey

The *Household Electricity Use Survey* (2012) sponsored by DEFRA, DECC and the Energy Saving Trust estimated that the average household saving in the event that all cold appliances, of whatever age, were replaced with A+ or A++ models would be 310kWh/yr (p404).

AMDEA/Time to Change case studies

The replacement of older 'cold appliances' offers far greater savings. The AMDEA Time to Change initiative replaced, for example:

- a 30 year old fridge freezer with an 80% energy saving (986kW/yr)[5]
- a 20 year old fridge freezer with a 70% energy saving (705kWh/yr)[6]

5 http://www.t2c.org.uk/chilling/case-study/
6 http://www.t2c.org.uk/chilling/new-case-study-of-20-yr-old-fridge/

Policy comparisons

The Government has initiated energy-saving initiatives such as the Green Deal in 2012 and the Boiler Scrappage Scheme in 2010. How would replacing old cold appliances compare?

Green Deal

The Green Deal offers secured loans against the cost of energy efficiency measures such as installing energy efficient glazing. Replacing single glazed windows with A rated double glazing in a typical flat would save 1797kWh of gas heating a year.[7]

AMDEA research suggests that replacing a 20 or 30 year old fridge would save significantly more in terms of energy, cash and carbon dioxide for just a fraction of the cost and inconvenience.

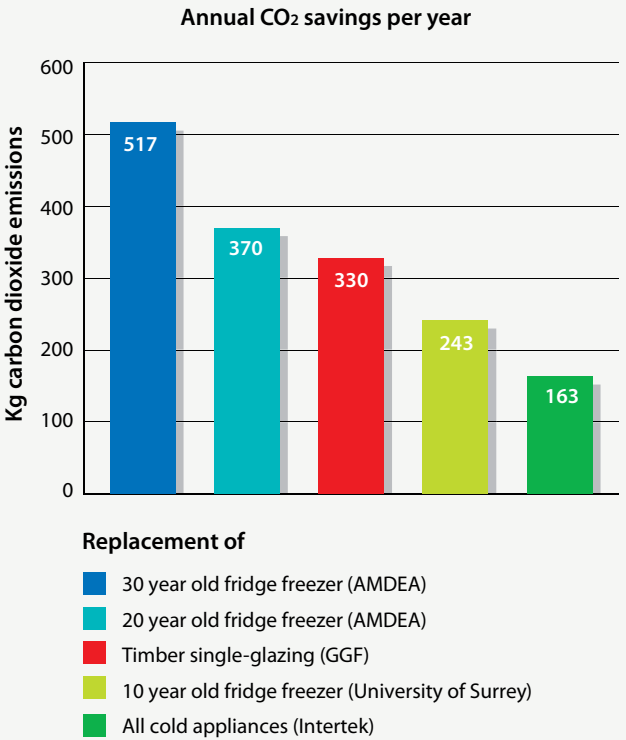
Boiler Scrappage Scheme

This offered a £400 voucher for each G-rated boiler replaced by homeowners. The scheme took almost 120,000 old and inefficient boilers out of commission in a matter of months, stimulating spending by the consumer of over £2000 per voucher (a ratio of 5:1 private:public money).[8]

A similar mechanism could easily be used to replace the 11million or more cold appliances that are ten or more years old, leveraging considerable private investment in kitchen refurbishment, creating skilled and unskilled work.

7 Glass and Glazing Federation online calculator http://www.ggf.org.uk/energy-savings-calculator replacing 6.7m^2 of timber single-frame windows with A rated double glazing

8 Energy Saving Trust, February 2011, English Boiler Scrappage Scheme 2010 Evaluation Report



Industry proposition

Today, the investment and innovation of the domestic appliance industry has delivered high efficiency technology that consumes a fraction of the energy used by previous generations of large appliances.

Due partly to the recession a huge number of old inefficient appliances – especially fridges, freezers and fridge freezers – remain in people's homes, particularly those of the elderly and the disadvantaged.

Replacing these can be as efficient in cutting household bills and carbon dioxide emissions as installing double glazing – at a fraction of the cost.

In the **Green Deal**, **ECO** and the **2010 Boiler Scrappage Scheme** the Government has appropriate tools to capture these benefits as well as:

- Stimulating consumer spending
- Creating jobs
- Cutting fuel imports
- Improving living standards

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AMDEA, Rapier House, 40- 46 Lambs Conduit Street, London WC1N 3NW, UK

Tel: **+44 (0)20 7405 0666** | Fax: **+44 (0)20 7405 6609** | E-mail: **info@amdea.org.uk** | **www.amdea.org.uk** | **www.t2c.org.uk**

BWC 3380 10/12