

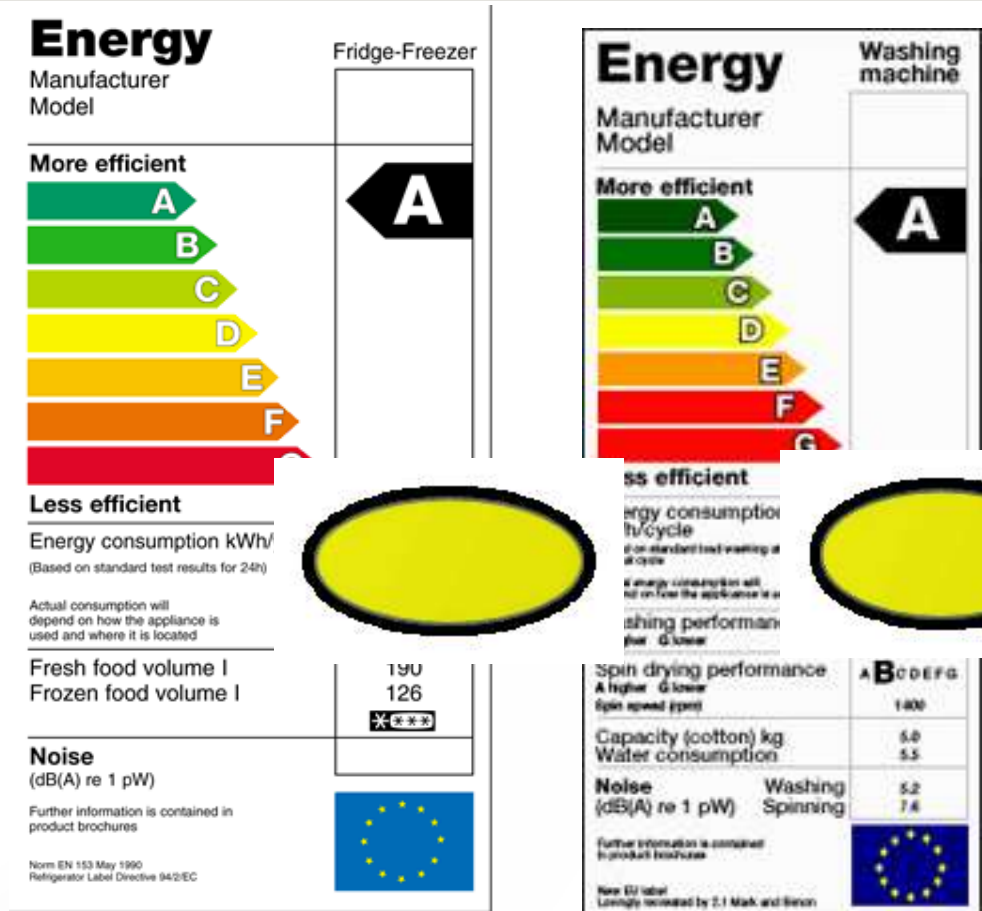
Saving on appliances energy use

Nicola Terry

<http://nicola.qeng-ho.org>

<https://energy-surprises.blogspot.co.uk>

Energy Ratings



Energy ratings compare similar appliances:

- Size
- Functions

Look for the actual energy use

High consuming appliances

Appliance	Proportion consuming more than 365 kWh/year (about £50)
Fridge Freezer	52%
Freezer	36%
Electric cooker	32%
Tumble dryer	35%
Plasma TV	57%
Aquarium	27%
Wine cooler	67%

Data from Household Electricity Survey 2010/2011

Measuring and monitoring

- Monitor your overall consumption
 - Easy with smart meters,
 - Borrow from CCF
- Measure your appliances
 - How much does your TV take on standby?
 - How much to run the washing machine/dishwasher



See <http://nicola.qeng-ho.org/elec-usage/elec-app.php>

kW and kWh

1 kWh = 1 kW for 1 hour

Television: say 100 W

1 kWh = 10 hours * 100 W

Electric shower 10 kW

1 kWh = 6 minutes

Boil the kettle:

3 kW for 2 minutes = $3 \times 2 / 60 = 0.1$ kWh

1 kWh = 10 * boiling the kettle

Typical home electricity use

8-10 kWh/day

(more in winter, less in summer)

Tips

Avoid over-filling the kettle
Boil 1 mug less, 4 times/day
=> 36 kWh/year



Run the dishwasher less often
Save 1 run per week =>
60 kWh/year

Turn down the brightness
on your TV
Save 20 W, 5 hours/day
=> 36 kWh/year



Turn off XXX (4 Watts standby) at the switch
Save 4 W, 24x7
=> 35 kWh/year

Standby power

- Since 2010, by EU directive most appliances must have standby power $< 1\text{W}$
- $1\text{ W} \Rightarrow 9\text{ kWh/year}$ (about £1.20)
- For older appliances 10 W is not unusual.
- Is it warm? If so it has a high standby.

Saving energy with a microwave oven

Cooking vegetables ✓

Heating up rice ✓

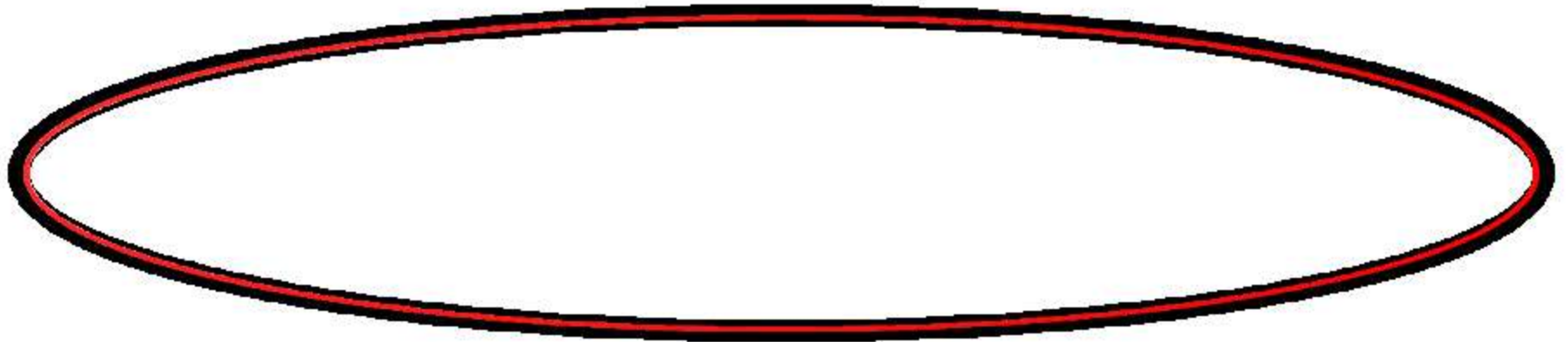
Heating up soup ✗

Defrosting food ✗



What's the point of Smart Meters

- No more estimated bills
- Accurate real time monitoring, facilitates savings
- Potential for TOU pricing: higher prices at peak times



Thank you for listening

- Energy ratings
- Measuring and monitoring
- Energy saving tips
- Why we need smart meters