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

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

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

**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*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 < 1W
- 1 W => 9 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
• Peak demand drives infrastructure costs
• Reducing peak demand saves money for everyone
• Higher prices encourage shifting demand away from peaks either by time shifting or battery storage
Thank you for listening

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