

Get a smart meter and you could save enough energy to have 26,473 cups of tea in a year

Disclaimer: Based on UK Gov's projected annual savings of 2% and a 1.7 litre kettle using 2.73 kWh. Savings possible by customers measuring energy use and cutting waste. Eligibility may vary. Available by 2020.

Summary

- The average household uses on average 16,437kWh annually
- Real consumer data from a leading energy supplier shows average energy savings per household with a smart meter are 3%.
- This real consumer experience is even better than official government projections: The BEIS impact studies are an average saving of 2.8% for electricity and 2% for gas with a smart meter. We have therefore taken the lowest figure available to us, (2%), for prudence
- A 2% saving equates to a 328kWh per year.
- It takes 0.14kWh to power a boil a 1.7 litre kettle, meaning you could power a 1.7 kettle for 26,473 cups of tea non-stop, with the savings from getting a smart meter

The figure of 328kWh is based on the latest official data.

BEIS's report on energy consumption in the UK (published July 2018) which showed average gas consumption per household to be 12,609kWh and average electricity consumption per household to be 3,828kWh (a total of 16,437kWh); and

- BEIS's finding that customers who switch from an old-fashioned meter to a smart meter can expect average annual savings of 2%; and**
- The basic calculation: 2% of 16,437kWh is 328kWh.**

We will now provide more detail in relation to each of these three points:

- BEIS's report on energy consumption in the UK (published July 2018) which showed average gas consumption per household to be 12,609kWh and average electricity consumption per household to be 3,828kWh (a total of 16,437kWh); and**

The information/figures above come from page 21 of the BEIS official report entitled: *ENERGY CONSUMPTION IN THE UK*, which was published in July 2018. This report is published annually and covers the previous calendar year. This reflects the latest information available when the ads will be broadcast/published.

You can see the full report here.

<https://smartenergygb.box.com/s/h5bcpvs4we400qnnct163t4ws5zfwqzn> (see page 21)

- BEIS's finding that customers who switch from an old-fashioned meter to a smart meter can expect average annual savings of 2%.**

This claim is based on information provided by BEIS in their official report: *Smart Meter Roll-Out Cost-Benefit Analysis*, which was published in August 2016. This was (and remains) the latest smart meter roll-out cost-benefit analysis report to be published by BEIS.

You can see the full report here.

<https://smartenergygb.app.box.com/s/vdywd48l9ckhyf96u93njqpa6usyjurn>

We draw your attention in particular to page 19 of the report, which states as follows (the underlining has been added for emphasis, and the wording in [square brackets] added for clarity):

“The main quantitative sources of evidence on the impacts of feedback are the series of large-scale international review studies, and two major GB studies: the 2011 Energy Demand Research Project (“EDRP”) and the 2015 Early Learning Project (“ELP”) an extensive programme of research into how best to deliver consumer benefits through effective engagement.

The EDRP was co-funded by the [UK] Government to provide information on GB consumers’ responses to a range of forms of feedback, including smart meter-based interventions. EDRP trials generally found that the combination of a smart meter with an IHD [In-Home Display] was associated with significant electricity savings; the trials more closely comparable to the GB roll-out showed statistically robust electricity savings of 2% to 4%. For gas, it was the provision of a smart meter rather than the IHD which was most significant in delivering savings, with savings of around 3%.”

And BEIS concludes that:

“In light of our current analysis of the available evidence and given the continuing uncertainty, we [BEIS] retain a conservative approach and continue to assume that the gross annual reductions in demand will be as follows: 2.8% for electricity and 2% for gas credit customers.

So BEIS considers these figures to represent a ‘conservative approach’ and we have erred on the side of using the most conservative average figure of 2% overall to cover both electricity and gas (rather than using 2.8% and 2% respectively).

Furthermore, since this study was published, leading UK energy provider British Gas found that the cost saving enjoyed by those of its customers who switched to smart meters (compared with households without smart meters) has been even more substantial than 2% in practice. British Gas has found that average customer savings by its own customers has been around 3%.

The source for this is the written evidence submitted by British Gas to the *Commons Science and Technology Select Committee*. British Gas provided the following evidence:

“We have also found that smart consumption savings are largely sustained. When we analysed our customers’ usage into the second year, we found that the savings remained at around 3%.

Explanation

This statement means that when we look at the total post-install consumption for 2 years after the smart install we can observe that our smart meter customers have reduced their mean annual consumption by around 3% more than their equivalent standard customer. This shows that smart consumption savings are largely sustained over a 2 year period.”

A breakdown of how this 3% figure was calculated by British Gas, along with a practical example, can be seen in the document: *Further written evidence submitted by British Gas (SME0045)*, dated September 2016.

You can see the full report here.

<https://smartenergygb.box.com/s/z6hrr1he9ygk004v6ilneyqabqfl2hj1>

Therefore, even though this real-world information from the leading UK provider of gas and electricity (based on its own customers) would indicate the figure was higher than 2%, we chose to base our claims on the more conservative figure of 2% to ensure the average savings claims made in our advertisements are entirely fair, achievable and robust.

iii) The basic calculation: 2% of 16437kWh is 328kWh.

This is factually true and there isn't much more to be said about this.

Kettle usage

To calculate the energy usage for a 1.7 litre kettle, we've taken an average usage figure in kWh from three of the top selling 1.7 litre kettles (*Breville VKJ957, Russell Hobbs 23910 AND Quest Jug Kettle, as listed on Amazon UK at 20/09/2018 at 11am*). This average equates to 2.73kWh.

The average cup of tea measures 150ml ¹

1.7 litre or 1,700 ml (full kettle) / 150ml (cup) = 11.3 cups of tea per boil

The average kettle uses 2.73 kWh. The average kettle takes 3 minutes max to boil².

3 minutes ÷ 60 minutes (1 hour) = 0.05

2.73 kWh x 0.05 = 0.14 kWh

328 kWh (energy saving) / 0.14kWh (to boil a kettle) = 2342.8 boiled kettles

2342.8 (kettles boiled with energy savings) x 11.3 (number of cups of tea from one kettle) = 26,473.6 cups of tea

¹ *Better tea-making: Measurements, Tea Guardian.com*
<https://www.teaguardian.com/about/standards/measurements/>

² *Electric kettles, Explain That Stuff!*
<https://www.explainthatstuff.com/how-electric-kettles-work.html>