

Domestic energy bills in 2014: The impact of variable consumption

Summary

In 2014 energy prices rose by just under 3 per cent, but warmer weather and further improvements in energy efficiency resulted in consumption falling by around 10 per cent. This resulted in household expenditure on energy, falling by around 7 per cent.

Introduction

DECC publishes estimates of annual domestic electricity and gas bills in its Quarterly Energy Prices (QEP) publication. These bills are based on quarterly pricing information collected from energy suppliers. They are calculated using standard annual consumption assumptions of 3,800kWh for standard electricity, 6,000kWh for Economy 7 electricity, and 15,000kWh for gas. These assumptions allow for easy price comparisons between years, removing the impact of weather and energy efficiency measures.

Table 1: Domestic energy bills based on fixed consumption levels 2010-2014¹

	Standard Electricity	Gas	Combined Bill
2010	£474	£564	£1,038
2011	£513	£617	£1,130
2012	£542	£686	£1,228
2013	£577	£729	£1,306
2014	£592	£752	£1,344
Growth 2013-2014	2.6%	3.2%	2.9%

The key advantage of presenting bills with a fixed consumption level is that users can see the effects of price changes in the table. Also estimates can be produced in advance of detailed consumption information being made available. The first estimates of energy bills are published in December of the year, whilst estimates of domestic consumption are first published in March of the following year, with data subsequently being revised in the July edition of DUKES (Digest of UK Energy Statistics).

Price Changes

CPI (Consumer price index) data shows that gas and electricity prices have been rising in both current and real terms almost every year between 2003 and 2014.

All six major domestic energy suppliers increased their prices at the end of 2013 or start of 2014. Four of the six subsequently reduced their prices in the first quarter of 2014 in response to Government changes to the costs of some energy policies. Overall, the changes reflect an average increase in gas and electricity prices of around 5 per cent. In Q4 2014 a £12 government rebate was applied to domestic electricity customers in Great Britain. Gas prices have generally risen by more than electricity prices in recent years. The extent of these rises is visible in Table 1, where consumption has been fixed between years.

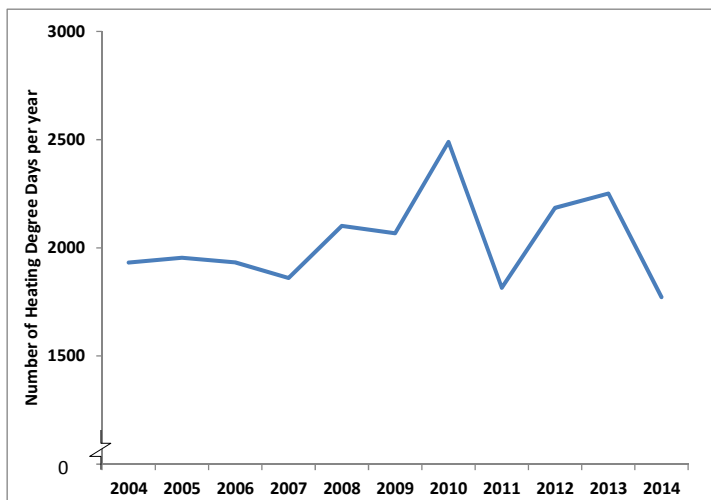
¹ Gas data within this article refers to Great Britain unless otherwise stated. Electricity bills and consumption figures are based on UK data.

Weather

Changes in consumption figures have been greater for gas than electricity as a result of variation in the demand for heating. DECC estimates that in 2013, 77 per cent of domestic gas use was for space heating, compared to only 22 per cent for electricity.² As a result, the degree to which changes in electricity consumption will be attributable to weather patterns will be much smaller than for gas, as far fewer households rely on electricity for heating.

Heating Degree Days (HDDs) are used to reflect how weather influences the energy used to heat homes. They are calculated relative to a base temperature (DECC use 15.5°C), so if a day has an average (of the maximum and minimum) temperature of 10°C, the HDD for that day will be 5.5. If the daily average temperature exceeds the base temperature, the HDD for that day will be 0. The HDDs are summed for each month and published in Table 7.1 of Energy Trends. (Chart 1)

Chart 1: Heating Degree Days 2004-2014



Temperatures in 2014 were the warmest on record and on average were 1.2 degrees warmer per day compared to 2013. This resulted in the number of Heating Degree Days reducing significantly. This led to a decrease in demand for gas for heating resulting in a lower consumption of gas by the domestic sector in 2014.

Annual Domestic Energy Consumption

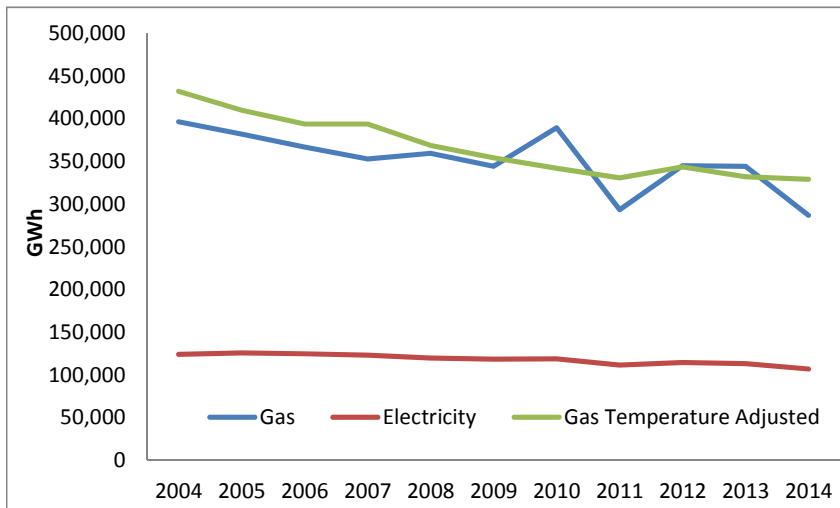
Quarterly data on energy consumption is published in tables 4.1 (Gas) and 5.2 (Electricity) of Energy Trends. The data is collected from a variety of sources - supplier surveys, DECC administrative systems, data modelling – and is combined to provide quarterly and annual figures. Chart 2 shows the trends in energy consumption in the UK from 2003 to 2014. Data are temperature and seasonally adjusted by DECC so that a better idea of the underlying trend can be observed.

² Energy Consumption in the UK: Table 3.05

Special feature - Domestic energy bills in 2014

Although this period has seen some large fluctuations in annual energy consumption (particularly for gas), the trend is of generally falling consumption between 2004 and 2014. This is likely to be as a result of a number of factors, which include price changes, weather patterns, and increased household energy efficiency in the form of greater insulation and increased efficiency of boilers, lighting, and appliances.

Chart 2: Annual domestic energy consumption in the UK: 2003-2014 (GWh)³



Annual Domestic Energy Bills based on Actual Consumption

Table 2 shows estimates of annual household consumption of gas and electricity for 2010 – 2014. These are calculated by dividing total energy consumption figures shown in Chart 2 by DECC estimates of customer numbers on each fuel type.⁴

Table 2: Average annual household consumption in kWh 2010-2014⁵

	Standard electricity	E7 electricity	Total electricity	Gas
2010	4,090	6,230	4,420	17,770
2011	3,830	5,850	4,130	13,250
2012	3,890	6,090	4,220	15,550
2013	3,890	5,830	4,170	15,460
2014	3,670	5,500	3,940	12,880
Growth 2013-2014	-5.7%	-5.7%	-5.5%	-16.7%

Most energy tariffs are comprised of a fixed and a variable element. These can be in the form of either a Standing Charge and Single Unit price structure, or a two-tier tariff whereby a customer pays a high price for a set number of units of energy consumed, and any subsequent consumption is paid for at a lower unit rate. The average fixed and variable prices and corresponding bills for

³ Electricity consumption figures include both Standard Electricity and Economy 7 Electricity customers.

⁴ DECC estimates that in 2014 there were 23.3 million domestic Standard electricity customers and 3.9 million Economy 7 electricity customers in the UK, and 22.3 million domestic Gas customers in Great Britain. These figures are based on DCLG household numbers published in Table 3.07 of DECC's Energy Consumption in the UK, data collected through the Domestic Fuel Inquiry, and other sources.

⁵ Total domestic consumption figures are available in DUKES tables 4.2 (Gas) and 5.3 (Electricity).

2010-2014 can be seen in table 3 below. If consumption for gas is above 15,000 kWh/year, the average price will be lower for the actual consumption, whilst if, as in 2014 consumption is lower, the average price per unit paid will be higher as the fixed costs are spread over a smaller consumption volume.

Table 3: Average prices based on standard and actual consumption (pence/kWh)⁶

	Using standard volume assumptions		Using actual volume assumptions	
	Std electricity	Gas	Std electricity	Gas
2010	12.47	3.76	12.36	3.66
2011	13.50	4.11	13.59	4.19
2012	14.26	4.57	14.18	4.53
2013	15.20	4.86	15.12	4.83
2014	15.89	5.02	15.82	5.11
% change	4.5%	3.3%	4.7%	5.8%

Combining the actual consumption estimates with the prices above suggests that average bills by consumer's dual fuel electricity and gas were as follows:

Table 4: Average energy bills on actual consumption

	Electricity	Gas	Total
2010	£507	£651	£1,158
2011	£517	£558	£1,075
2012	£553	£707	£1,260
2013	£590	£748	£1,338
2014	£585	£659	£1,244
Change	-£4	-£89	-£94
% change	-0.7%	-11.9%	-7.0%

Between 2010 and 2014, bills based on standard consumption assumptions have been rising consistently between years. This reflects price increases during this period. However, when variations in annual consumption are taken into account, there is much more variation especially for gas. In particular, the warm weather in 2014 resulted in the average expenditure being estimated to have fallen by just under £100 (7%).

User Feedback

Please send any comments or queries regarding this analysis to the contact details below:

Helen Lucas
 Energy Prices Statistics
 Tel: 0300 068 5057
 E-mail: Helen.Lucas@decc.gsi.gov.uk

Liz Vincent
 Energy Prices Statistics
 Tel: 0300 068 5162
 E-mail: Elizabeth.Vincent@decc.gsi.gov.uk

⁶ The average unit prices are published in QEP tables 2.2.4 (Electricity) and 2.3.4 (Gas).