



**BRIEFING PAPER**

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# Energy Prices

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## Summary

The price of domestic gas and electricity has been relatively stable over the past seven years after increasing steadily through 2000-2008. The price of gas has fallen somewhat in recent years, but electricity prices have risen. The cost of heating oil has fallen over the last three years with particularly large falls to 2016 before a partial rebound in the most recent year.

Domestic energy suppliers have been under pressure for some time to cut prices in response to drops in wholesale energy prices. In the medium to long term the pressures on price appear to be mixed as companies consider the reduction in wholesale price as well as rising infrastructure costs. The most reliable way consumers to reduce their bills in the medium to longer term is through energy efficiency improvements.

This note focuses on trends in the domestic market - the costs of gas, electricity and other fuels used for heating and the impact on fuel poverty. Most data is in price indices - the statistical literacy guide on [index numbers](#) gives some advice on interpreting them. An analysis of the impact of earlier price trends on levels on consumption can be found in [Energy price rises and their impact on demand](#). The note [Fuel Poverty](#) looks at trends, patterns and projections of fuel poverty and the article [Energy prices and fuel poverty](#) gives a brief snapshot of trends in prices, fuel poverty and prospects for the future. The article [Ensuring affordable energy](#) considers the key issues faced during the current parliament in securing affordable energy. [Help with Energy Bills](#) gives information on sources of financial and practical help for individuals. The Energy and Climate Change Select Committee Report [Energy Prices, Profits and Poverty](#) contains information that many readers of this note may find useful. The article on [UK energy market competition](#) analyses the history of political and regulatory intervention designed to increase the competitiveness of domestic energy markets as well as detailing the findings from the CMA.

Ofgem's detailed analysis of the retail energy sector can be found on their [Retail Market](#) pages. A detailed analysis on how energy bills are calculated is included in understanding energy bills. The Department for Energy and Climate Change (DECC) produces an annual [analysis](#) of the impact of energy and climate change policies on average bills. This looks at current bills and forecasts through to 2020 and beyond. DECC's [Quarterly Energy Prices](#) contains comprehensive national and international statistics. This note does not look at road fuel prices. Trends in these are summarised in [Road fuel prices: Social Indicators page](#) and crude oil price trends are described in [Oil prices](#).

# 1. Domestic sector

## Summary of energy use

In 2016 the domestic sector was responsible for 27.7% of final energy consumption in the UK<sup>1</sup>. Gas made up 65% of total domestic energy use, followed by electricity (22%) and petroleum products (6%). Coal and other solid fuels now account for only 1% of domestic energy usage<sup>2</sup>. Total energy use by the household sector increased 3% between 2015 and 2016<sup>3</sup>.

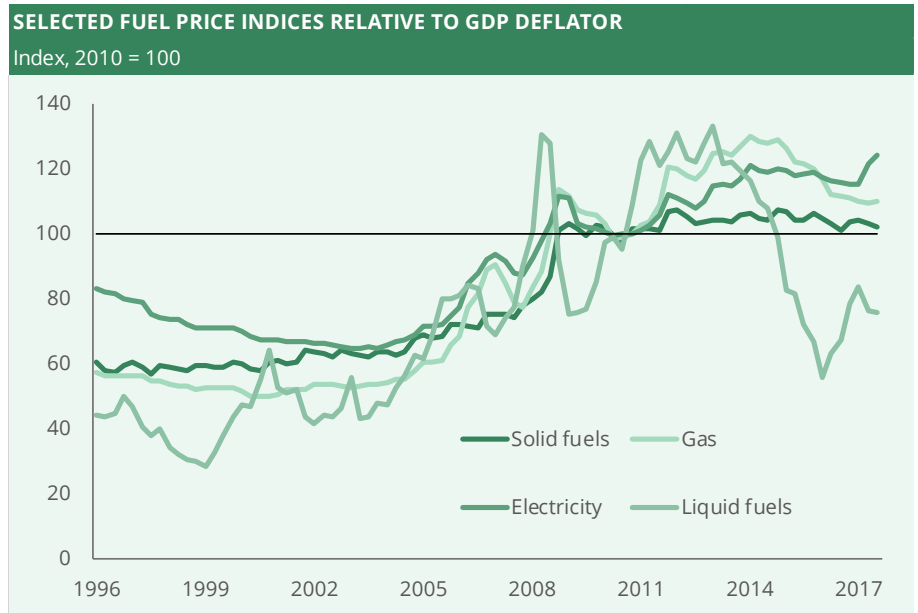
## 1.1 Price changes

The first chart opposite gives monthly index values for selected fuel components of the Retail Prices Index (RPI) since 1987. This shows how the real price of each component has changed over time and helps compare trends.

**Gas prices** fell consistently during the late 1980s and 1990s, with the exception of 1995 when VAT was introduced. By late 2000 prices were one-third below their January 1987 level in real terms. The main reasons for the price falls up to 2000 were price controls set by the regulator, the impact of competition, and

relatively easy supply/demand pressures. The price rose relatively slowly over the following few years and more rapidly from autumn 2005 to the end of 2006. Prices peaked in January 2007 at a level 82% above the late 2000 low and above the January 1987 (immediately post-privatisation) level. Prices increased again in early 2008 and in summer 2008. There were price cuts in early 2009 and early 2010, but price rises in autumn 2011 and winter 2012/13 meant that spring 2013 prices exceeded the winter 2008/09 peak levels. Gas prices dropped slightly during the middle of 2013, but by December had reached their highest ever price. Throughout 2014/15 gas prices decreased to their lowest level since October 2012, before stabilising throughout most of 2016 and 2017.

**Electricity prices** changed little until the mid-1990s after which they started a period of consistent falls. Continued price reductions over the following eight years saw a real reduction in the price of around 30%.



<sup>1</sup> DBEIS, [Digest of UK Energy Statistics](#), Table 1.1

<sup>2</sup> *ibid*

<sup>3</sup> *ibid*

## 5 Energy Prices

Regulator-imposed controls on prices and, since 1999, supply competition were again partly responsible for the price reductions, as were the reductions in the Fossil Fuel Levy from 1996 onwards.

Electricity prices have increased since spring 2003 and, as with gas, price increases have been greater since autumn 2005. The January 2007 price peak was 44% above the 2003 low and 5% above the level immediately after privatisation (January 1991). As with gas, prices increased in early 2008 and summer 2008 and fell back slightly in early 2009. However, unlike gas there have been no major cuts in prices since then. The autumn 2011 electricity price rises were smaller than those seen for gas, the winter 2012/13 price rises were slightly lower than those for gas. These took cash prices beyond their winter 2008/09 peaks, but real electricity price levels are still slightly below this level. The winter of 2013/14 saw electricity prices rise to their highest levels since the winter peak of 2008/09. Throughout 2014/15 prices fell, but have increased since the end of 2016, and now stand at the highest levels on record..

The price of **heating oil** tends to mirror quite strongly trends in crude oil and hence it has been extremely volatile over this period with numerous sharp spikes and a rapid rise from mid-2007 to mid-2008 and a rapid fall afterwards. Prices have increased since early 2009 and the latest real price was 91% above the January 1987 level and 235% above the late 1998/early 1999 low. The cold spell in November/December 2010 resulted in a steep price spike for heating oil as demand increased and in some places supplies were short due to the harsh weather conditions. Sustained higher crude oil prices in 2011, 2012, in part linked to the political unrest in the Middle East and tension between Iran and the West, have meant heating oil prices have remained high in subsequent years.

However, heating oil prices have dropped sharply since the high prices in 2012/13 and as of January 2016 were at their lowest since early 2007.

**Coal prices** have shown a greater seasonal trend than the other fuels. The underlying trend was downwards or static during the late 1980s and 1990s. There has been a general upwards trend since then. The large rise in prices in late 2008 has not been reversed, but subsequent winter peak prices have been somewhat lower in real terms. However, the overall amount of coal used has declined, with demand across the entire economy reducing by 70% between 2012 and 2016.<sup>4</sup>

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<sup>4</sup> <sup>4</sup> DBEIS, [Digest of UK Energy Statistics](#), Table 1.1 – 1.3

## 1.2 Domestic expenditure on energy

### Average gas and electricity bills for typical consumers

While long-run data can be of interest, it does not translate directly in easily relatable terms. The most meaningful indicator in this respect is the average bill for a ‘typical’ consumer. DBEIS and its predecessor departments have published this series back to 1990.

The cost of gas and electricity can vary according to supplier and type of payment. According to DBEIS the average gas bill for 2017 in cash terms across all payment methods was £694. Table 2 at the end of this note includes these figures going back to 1990 in real term prices; trends are illustrated in the chart opposite. More recent data also reflects savings made from switching from the former monopoly supplier.

The average standard credit gas bill fell by a total of £102 (in 2015 prices) between 1991 and 2001 (22%), but subsequently increased by £408 by the year 2015. There has been a £132 reduction since 2014.

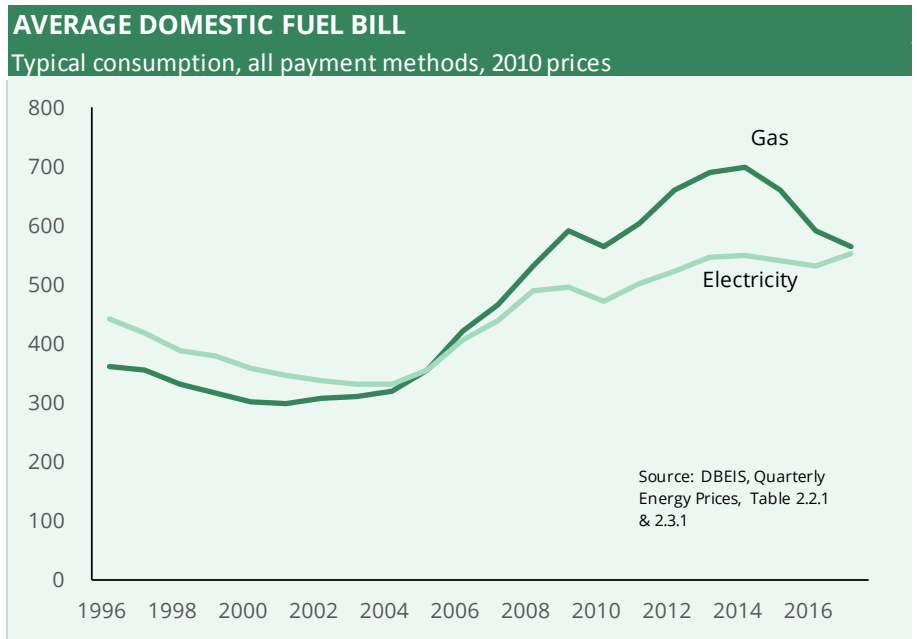
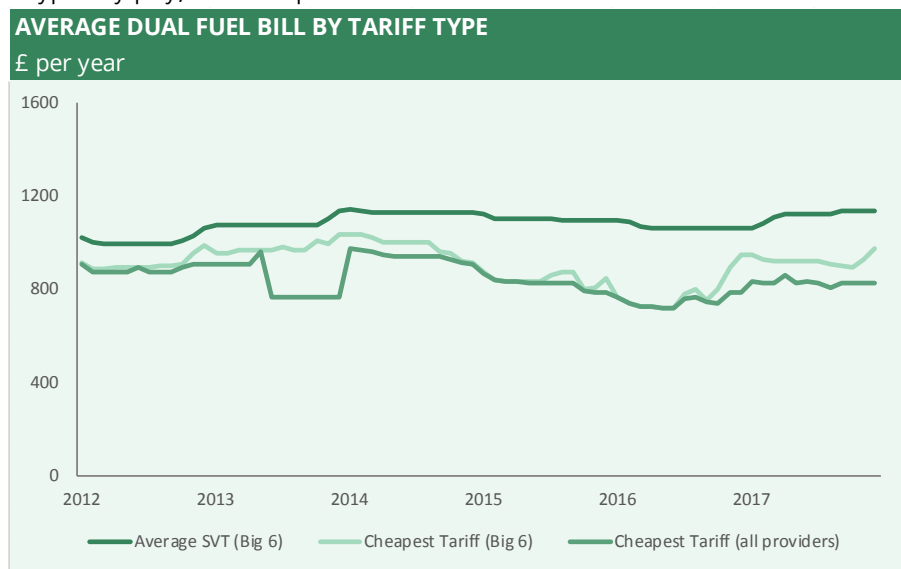


Table 3 includes equivalent information for electricity bills. Trends in average bills are also included in the earlier chart. The average electricity bill in cash terms for 2017 was £599-£672, depending on payment method. Average bills have followed a similar trend to the RPI data with consistent real falls in average standard credit bills totalling £174 in 2015 prices (31%) between 1992 and 2003, and a £238 increase between 2004 and 2014. In 2017 average bills for direct debit and standard credit payments increased, but those for pre-payment meters fell slightly.

## Ofgem estimates

Data published by Ofgem mirrors the general trends identified in the earlier analysis. Whereas DBEIS has produced information on the average annual bill that customers typically pay, OFGEM provides a breakdown on the average price by tariff type. The chart opposite shows an increase in the price of the average standard variable tariff of the big six energy companies, their cheapest fixed rate tariff, and the cheapest fixed rate tariff on offer from all companies operating in the market.



## Other estimates of average bills

The DBEIS data for 2007 to 2012 uses prices covering the whole calendar year. Prior to 2007 official figures used prices for the year to September. They are both essentially backward looking, so gives a lower figure when prices are rising. In addition the average bill data produced by DBEIS uses 'typical' domestic consumption levels of 3,800 kWh and 15,000 kWh for electricity and gas respectively.<sup>5</sup>

While the level of 'typical' consumption used has no effect on trends in average bills, it does affect the absolute value and hence the impact in pounds and pence of any given percentage change. In 2015 the average domestic consumption of electricity and gas was 4,115 kWh and 14,263 kWh respectively.<sup>6</sup> The gas figure especially has fallen over time. Ordinarily this is connected to a mild winter, but high prices and improvements in energy efficiency will also have been a factor over recent years. Gas consumption had been 20,000-20,500 kWh per household over the period 2001-04. Actual 2015 consumption levels would cut around £36 a year off the figure for a 'typical' gas consumer and add around £50 a year to the figure for the 'typical' electricity consumer.<sup>7</sup> Mean consumption levels can be skewed by a relatively small number of very high users. It is likely that households with electric central heating skew the mean electricity figure above the median value and the 'typical' consumption level is closer to consumption levels for households with other forms of heating.

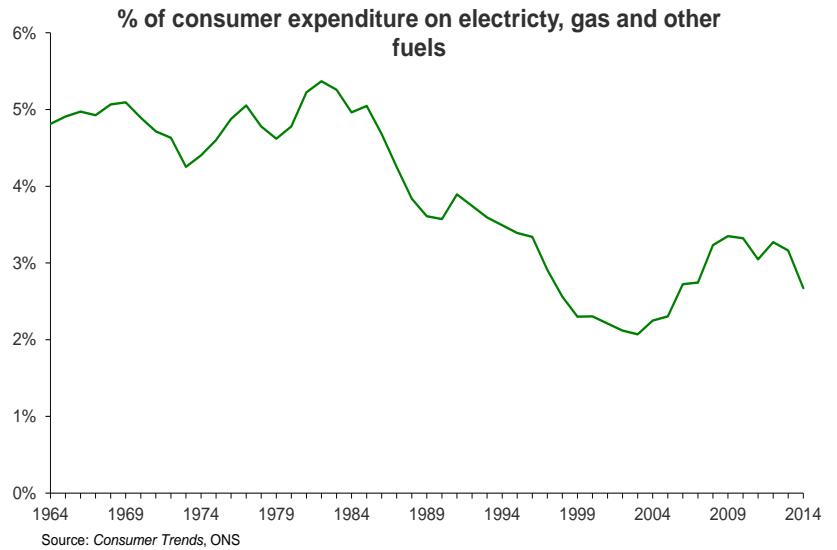
<sup>5</sup> Previously these figures were 3,300 and 18,000 respectively.

<sup>6</sup> *Energy consumption in the UK 2015*, DBEIS

<sup>7</sup> Based on average cost per kWh from Tables 2 and 3

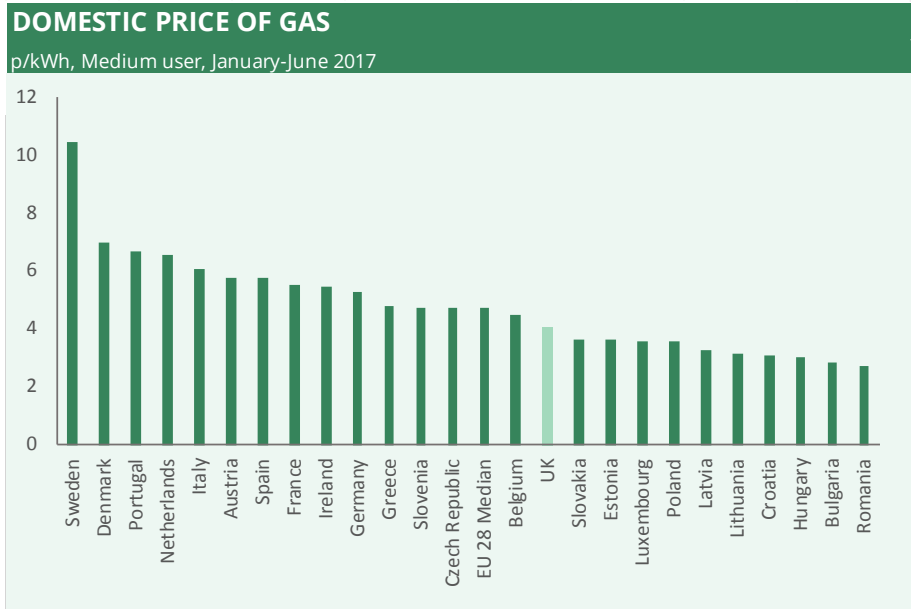
## Actual household expenditure

In 2014 UK households spent a total of £13.5 billion on electricity, £13.1 billion on gas, £1.6 billion on liquid fuels (fuel oil and heating oil) and £240 million on solid fuels. Total expenditure on these fuels was £28.4 billion up from below £15 billion in 2003. The chart opposite illustrates total spending on these fuels as a proportion of total consumer expenditure. Spending on fuels broadly kept pace with total consumer spending over the first 20 years shown here. Since the mid-1980s total consumer spending has increased at a faster rate. The proportion spent on fuels fell from its 1982 peak of 5.4% to 2.1% in 2003. It increased in each subsequent year up to 3.3% in 2009, the highest share since 1995.<sup>8</sup>



## International comparisons

In the first half of 2017 domestic prices for **gas** were fairly average compared to other countries in the EU. The chart opposite shows average unit prices for a 'medium' domestic consumer of gas (5,600-56,000 kWh a year), including taxes, for EU states. The UK figure of 4.04 pence/ kWh was below the EU median.



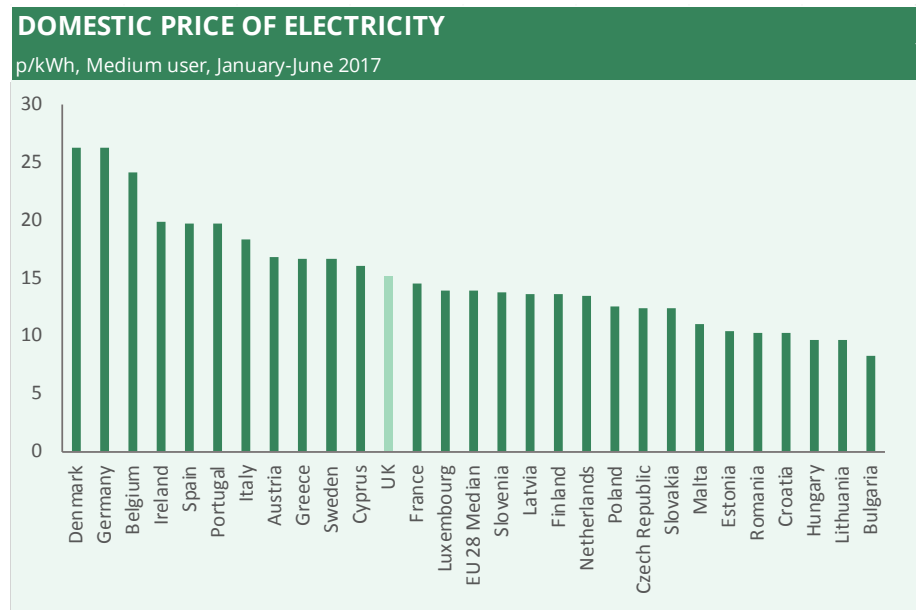
Prices in the UK have become relatively cheaper due to the strength of the Euro since early 2008. Even its more recent weakness against

Sterling has not reversed much of the earlier gain. The majority of countries with lower prices were new (post 2004) member states. Sweden had the highest price at 10.4 pence/kWh, roughly 2.5 times the UK price.

<sup>8</sup> Consumer Trends quarter 2 2013, ONS. Uses revised data from 1997 onwards only.



The next chart gives data on the average cost of **electricity** for a medium user (2,500 to 5,000 kWh a year), including taxes, for EU states. The price in the UK was just ranked in the top half, with a price of 15.2p/kWh, just above the EU median level.



### 1.3 Impact on fuel poverty

A household is said to be in fuel poverty if the cost of keeping their home at a reasonable temperature is above the national median level, and if they were to spend that amount they would be left with a residual income below the official poverty line. This is known as the 'Low Income, High Costs' (LIHC) definition and was adopted in England in 2013. Prior to this, a household was defined as fuel poor if they needed to spend more than 10% of their income on fuel to maintain a reasonable home temperature. This definition continues to be used by the devolved governments in Scotland, Wales and Northern Ireland.

The LIHC indicator produces two measures of fuel poverty: the number of fuel poor households and the 'fuel poverty gap', which represents the difference between the required fuel costs of fuel poor households and the median required fuel costs. The fuel poverty gap is closely related to changes in energy prices – since 2003, higher prices have been associated with a larger gap between fuel-poor and non-fuel-poor households. In 2015 the gap reduced despite an increase in energy prices, primarily because of rising incomes amongst fuel poor households.<sup>9</sup>

Energy prices do not have a substantial effect on the number of households defined as fuel poor under LIHC. Because the measure is relative, price changes that have a similar effect on all households do not cause the number of households defined as fuel poor to increase. In 2015, 2.5 million households in England were defined as being in fuel poverty – 11.0% of all households.<sup>10</sup>

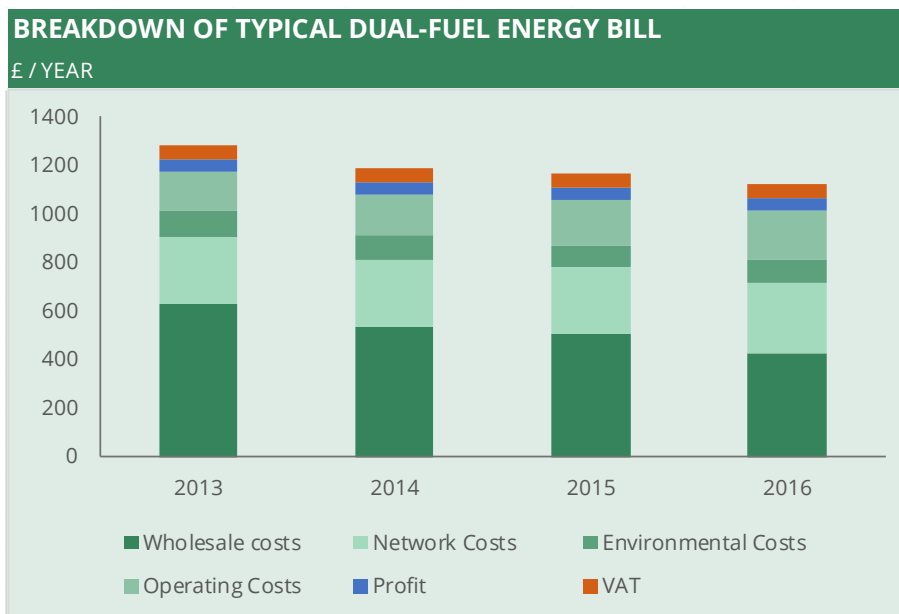
<sup>9</sup> [Annual fuel poverty statistics report 2017](#), DBEIS

<sup>10</sup> [Annual fuel poverty statistics report 2017](#), DBEIS

## 2. Price fluctuation

There have been three ‘waves’ of increased prices for domestic gas and electricity prices since the late 1980s; 2005/2006, 2008 and 2011/12. The earlier analysis has shown that trends in gas and electricity prices have been similar, but there has been some difference in the size of and timing of price spikes. Gas has generally been the single most important fuel used to generate power,<sup>11</sup> so we would expect some connection between prices. Generators can switch to other fuels (mainly coal) to a limited extent, but this additional demand increases the price of these fuels.

Broadly speaking there are five elements that make up a customer’s energy bill; the wholesale cost of fuel, the costs of supply –transmission, distribution and metering, costs of Government/EU policy, VAT and supplier margins. Ofgem estimates that wholesale fuel costs are the largest single element; 38% of typical dual fuel bills.<sup>12</sup> Network costs amount to around 26% of a typical bill.<sup>13</sup> VAT has remained at 5% since 1997. Ofgem’s estimate of supplier margins for a dual fuel customer was 5% of their bill and company operating costs around 18%.<sup>14</sup>



<sup>11</sup> Recent higher gas prices have meant that more coal is used to generate power in the UK than gas, but variations in gas prices still provide a good guide to changes in costs of marginal generation

<sup>12</sup> [Understanding Energy Bills](#), Ofgem (2016)

<sup>13</sup> *Ibid.*

<sup>14</sup> *Ibid.*

## 2.1 Policy impact

The [Committee on Climate Change](#) (CCC) produces an annual independent assessment of the impact which low-carbon policies have on energy bills, for both consumers and businesses. The latest assessment, for 2017, is that approximately 9% (roughly £100) of a typical household bill is attributable to low-carbon policies. In contrast, investments in energy efficiency are estimated to have saved a typical household roughly £290 per year from their energy bills. <sup>15</sup>

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<sup>15</sup> CCC, [Energy Prices and Bills Report](#) 2017

### 3. Reference tables

AVERAGE GAS BILLS BY PAYMENT TYPE AND SUPPLIER TYPE										
2010 PRICES										
	Standard credit			Direct debit			Prepayment			Overall
	Home suppliers	Non-home suppliers	All consumers	Home suppliers	Non-home suppliers	All consumers	Home suppliers	Non-home suppliers	All consumers	GB
<b>Real terms<sup>(2)</sup></b>										
1990	..	..	388	..	..	..	..	..	413	..
1991	..	..	393	..	..	..	..	..	413	..
1992	..	..	386	..	..	..	..	..	408	..
1993	..	..	359	..	..	..	..	..	381	..
1994	..	..	367	..	..	..	..	..	399	..
1995	..	..	382	..	..	362	..	..	405	..
1996	370	343	370	344	322	344	392	392	392	362
1997	365	309	364	340	295	340	387	373	387	357
1998	351	289	346	308	273	303	363	358	363	331
1999	344	286	332	298	272	291	345	356	346	317
2000	330	277	315	289	263	281	330	345	332	302
2001	326	276	310	289	261	281	326	337	327	299
2002	337	283	321	304	266	290	338	338	338	309
2003	339	292	323	304	277	294	338	346	339	312
2004	339	305	328	312	291	304	349	337	346	319
2005	386	340	371	348	324	338	390	372	385	356
2006	475	398	442	421	372	394	480	435	464	421
2007 <sup>(3)</sup>	495	477	487	433	444	440	533	503	520	468
2008	553	551	552	507	513	510	590	557	575	533
2009	622	608	616	573	560	565	663	630	646	593
2010	591	578	586	560	539	546	590	580	584	564
2011	641	617	631	615	571	586	641	612	626	605
2012	715	667	695	687	615	638	712	664	685	662
2013	749	697	726	712	641	664	742	699	718	690
2014	765	712	741	712	651	671 #	766	716	738	701
2015	723	682r	704	669	611	631 #	721	692r	705	661
2016	644	633	639	589	541	558 #	645	649	647	591
2017	621	618	619	570	528	543 #	566	567	566	564
<b>% Change</b>										
2016-20	-3.6	-2.3	-3.1	-3.2	-2.4	-2.6	-12.2	-12.6	-12.5	-4.6

(1) Bills up to (and including) 2006 relate to total bill received in the year, i.e. covering consumption from Q4 of the previous year to Q3 of the named year. All bills are calculated using an annual consumption of 15,000 kWh. Figures are inclusive of VAT.  
Home supplier denotes British Gas Trading.  
Non-home suppliers are all other suppliers.

(2) Bills deflated to 2010 terms using the GDP (market prices) deflator.

(3) Bills from 2007 on are subject to a change in methodology. Bills relate to the calendar year, i.e. covering consumption from Q1 to Q4 of the named year. The assumed gas consumption pattern has also been altered to more accurately reflect real consumption patterns. More information can be found in the methodology note at: <https://www.gov.uk/government/publications/domestic-energy-prices-data-sources-and-methodology>

Note: r's indicate revised data. An r in the date column indicates all data in the row has been revised.

Note: p's indicate provisional data. A p in the date column indicates all data in the row is provisional.

## 13 Energy Prices

AVERAGE ELECTRICITY BILLS BY PAYMENT TYPE AND SUPPLIER TYPE										
2010 PRICES										
	Standard credit			Direct debit			Prepayment			Overall
	Home suppliers	Non-home suppliers	All consumers	Home suppliers	Non-home suppliers	All consumers	Home suppliers	Non-home suppliers	All consumers	GB
Real terms <sup>(2)</sup>										
1991	..	..	454	..	..	..	..	..	490	..
1992	..	..	472	..	..	..	..	..	509	..
1993	..	..	458	..	..	..	..	..	493	..
1994	..	..	454	..	..	451	..	..	487	..
1995	..	..	460	..	..	456	..	..	492	..
1996	..	..	439	..	..	432	..	..	470	442
1997	..	..	418	..	..	408	..	..	443	418
1998	..	..	388	..	..	375	..	..	414	388
1999	382	352	379	368	336	365	405	389	405	379
2000	366	339	362	352	327	346	388	385	387	360
2001	356	331	349	343	318	335	375	367	374	348
2002	350	318	340	339	306	325	369	350	363	338
2003	344	316	333	332	303	319	358	349	355	331
2004	345	316	334	336	302	319	366	344	357	331
2005	374	345	361	360	326	342	392	377	386	357
2006	422	408	416	404	373	387	438	450	442	406
2007(3)	469	433	453	446	401	419	477	467	473	440
2008	527	483	507	505	444	468	538	522	531	492
2009	541	489	515	508	453	473	544	509	527	496
2010	517	469	493	484	436	453	522	489	505	474
2011	544	505	523	506	471	483	547	518	531	503
2012	564	530	545	524	493	503	568	533	548	523
2013	588	557	570	548	519	527	592	562	573	547
2014(4)	597	560	576	550	521	530	601	567	580	551
2015(4)	589	556r	570	536	509	518	591	561r	573	541
2016	583	556	567	530	498	508	582	556	566	532
2017(p)	622	583	600	565	522	535	559	544	550	552
% Change										
2016-20	+6.7	+4.9	+5.8	+6.6	+4.9	+5.3	-3.9	-2.2	-2.8	+3.8

(1) Bills up to (and including) 2006 relate to total bill received in the year, e.g. covering consumption from Q4 of the previous year to Q3 of the named year. Bills up to 1998 relate to home supplier only.

All bills are calculated assuming an annual consumption of 3,800 kWh. Figures are inclusive of VAT.

Home supplier denotes the former public electricity suppliers within their own distribution areas.

Non-home suppliers are new entrant suppliers and the former electricity suppliers outside of their own areas.

(2) Bills deflated to 2010 terms using the GDP (market prices) deflator.

(3) Bills from 2007 onwards are subject to a change in methodology. Bills relate to the calendar year, i.e. covering consumption from Q1 to Q4 of the named year. More information can be found in the methodology note at: <https://www.gov.uk/government/publications/domestic-energy-prices-data-sources-and-methodology>

(4) In 2014 and 2015 a £12 Government rebate was applied to electricity bills for all customers in Great Britain. This is included in the figures above.

Note: r's indicate revised data. An r in the date column indicates all data in the row has been revised. Note: p's indicate provisional data. Ap in the date column indicates all data in the row is

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