



Components of an energy bill

Standard Note: SN06751
Last updated: 27 January 2014
Author: Paul Bolton
Section: Social & General Statistics

Autumn Statement 2013

In the Autumn Statement the Chancellor announced that funding for the Warm Homes Discount would come from taxation rather than energy bills and changes to the Energy Companies Obligation would reduce its cost to bill payers. The combined impact after VAT is thought to be a £50 saving on an annual average bill per household. All of the big six suppliers have announced plans to pass these savings. Two have announced a single smaller than expected increase and the other four have/will cut in prices after implementing the price rises which were announced in autumn. The net impact will be that prices will still rise this winter, but by less than they would otherwise do; increases averaging 4-7% rather than 8-10%. The Autumn Statement also announced that action by the network companies to reduce their costs should mean a further one off reducing in average electricity bills of £5 next financial year. The tables and analysis in the rest of this note do not yet take account of these changes.

The latest round of energy price rises has brought increasing focus on the different elements that make up a domestic energy bill and particularly which are responsible for these price rises. This note describes the different component parts of a domestic energy bill and summarises existing estimates of the contribution of each part to current bills and contributions to past bill increases.

There appears to be little consensus in the public debate about the cause of recent price rises or the makeup of current bills. However there is broad consistency between published estimates, particularly of the component parts of current bills and the reasons behind longer term price rises. The different interpretations appear to be largely due to the use of imprecise or ambiguous terms, especially around environmental and social costs and tax. There remains less consensus about the reasons behind the latest price rises and certain elements of bills, particularly company profits.

Looking across the different current estimates of the component parts of a typical domestic dual fuel energy bill gives those following breakdown:

-Wholesale costs	46-48%
-Network costs	20-23%
-Environmental and social levies	8-10%
-Supplier costs	9-10%
-Supplier 'profit' margins	3-5%
-Other costs	4-5%
-VAT	5%

This information is provided to Members of Parliament in support of their parliamentary duties and is not intended to address the specific circumstances of any particular individual. It should not be relied upon as being up to date; the law or policies may have changed since it was last updated; and it should not be relied upon as legal or professional advice or as a substitute for it. A suitably qualified professional should be consulted if specific advice or information is required.

This information is provided subject to [our general terms and conditions](#) which are available online or may be provided on request in hard copy. Authors are available to discuss the content of this briefing with Members and their staff, but not with the general public.

This note is concerned with gas and electricity bills for domestic consumers only. The note [Energy Prices](#) gives much more detail on the timing and extent of price rises, alongside data on other fuels and international comparisons. Future updates of this note will extend its coverage to forecasts of price changes to 2020 and the different contributory factors behind this and a section on the contribution of wholesale costs.

Readers may also be interested in the following related publications:

- [Energy Prices, Profits and Poverty](#), Energy and Climate Change Select Committee (July 2013)
- [The Energy Bill](#), House of Commons Library Research Paper
- [Help with Energy Bills](#), House of Commons Library Standard Note
- [Fuel Poverty](#), House of Commons Library Standard Note
- DECC [Energy price statistics](#)
- DECC summary page on [Policy impacts on prices and bills](#)
- [Understanding energy bills](#), produced by Ofgem
- [Energy prices and bills – impacts of meeting carbon budgets](#), published by the Committee on Climate Change
- [Do energy bills respond faster to rising costs than falling costs?](#), Ofgem (2011)

Consumer Futures publishes information on domestic energy prices and maintains [records](#) of energy price change announcements by the big six suppliers

Contents

1	Estimates of the component parts of current bills	3
1.1	Ofgem	4
	Snapshot estimates	4
	Supply market indicators	5
1.2	Department for Energy and Climate Change	5
1.3	Energy companies	7
1.4	Committee on Climate Change	7
2	Estimates of contributions of different factors to price rises	8
2.1	Ofgem	8
	Ofgem’s Supply Market Indicators	8
	Understanding energy prices	10
2.2	Committee on Climate Change	10
2.3	Energy companies	11
3	Further information on selected components of an energy bill	11
3.1	Energy Company Obligation	11
3.2	Renewables Obligation	12
3.3	Company profits	13

1 Estimates of the component parts of current bills

The main elements of a domestic bill are:

- The wholesale cost of energy
- Network costs
- Supplier operating costs
- Supplier margins or 'profit'
- Environmental and social levies
- VAT

While these category headings are fairly standard across different estimates, the coverage of each can vary.

Wholesale costs are what energy suppliers pay for the gas and electricity they supply. Freely available data on wholesale prices tends to be daily spot prices which are not always a particularly good indicator of what suppliers actually pay for current energy. Most will be bought well in advance and, in the case of the vertically integrated companies, bought from their own generation/production businesses and hence not on the open market. The detailed buying or hedging strategies¹ could vary substantially over time and between companies, but there is no obligation on suppliers to report these or any commercial interest in doing so. This means that even when authors attempt to simulate buying strategies the data on wholesale costs are only *estimates* of the costs suppliers face and are therefore open to challenge by the companies themselves. As wholesale costs make up the largest single element of bills, even a small different in estimates can have a relatively large impact on estimates of the remaining elements that are not directly recordable, such as supplier profits.

Wholesale costs are affected by certain policies, such as the EU Emission Trading Scheme (ETS) and include some knock-on impacts of other policies. Some estimates of bill component parts simply use the market price –however defined- as the basis of wholesale costs while others that attempt to identify all costs linked to Government/EU policy separate these out.

Network costs are made up of the costs of transmission- the high pressure gas and high voltage electricity network that takes energy from where it is produced to join the distribution network which comprises of local pipes and wires and takes energy to individual homes and businesses. Suppliers are charged for using these networks under a system of price controls regulated by Ofgem.

Supplier operating costs are those costs linked to running the business and include sales, billing etc.

Environmental and social levies are costs linked to expenditure by the energy suppliers on various Government schemes that they have to take part in. They are also known as levy-funded policies. It is assumed that these costs are passed on in full to bill payers. These programmes cover three broad areas: Improving energy efficiency, encouraging low carbon generation and reducing fuel poverty. There is a wider range of these programmes for electricity and hence they make up a larger share of electricity bills.

¹ The approach used by suppliers to reduce the volatility in daily and short term prices for the majority of their supply. This means buying energy on forward markets for delivery in the future –up to two years, or potentially even further, in advance. This gives suppliers greater certainty about their future costs and protects them from large short term shifts in prices.

VAT is charged at the reduced rate of 5% for domestic energy. Occasionally this is included (in company estimates) alongside environmental and social costs under a heading such as 'Government taxes and levies.' This can lead to confusion about what is actually included under this heading, ie. to assume it is all 'green' policy related. This note gives separate figures for VAT.

Supplier margins or 'profit' are often estimated as the residual element after all other parts above are taken off the total cost.

Some estimates include 'other costs' which can cover metering, storing gas and balancing the electricity system. There is less consensus about the treatment of such costs which can be included in operating costs or network costs or even within wholesale costs

1.1 Ofgem

Snapshot estimates

Ofgem has published a series of factsheets or web pages over recent years that give a breakdown of the component part of domestic fuel bills. Links to these are given below, but they should really be seen as snapshots rather than part of a completely consistent run of data as the presentation and methodology used for these estimates has varied over time.

- [Household energy bills explained \(January 2008\)](#)
- [Household energy bills explained \(August 2009\)](#)
- [Household energy bills explained \(May 2012\)](#)
- [Household energy bills explained \(February 2013\)](#)
- [Understanding energy prices \(November 2013\)](#)

The latest complete breakdown was published in February 2013 using December 2012 prices and is reproduced below. Here wholesale costs are included with supplier costs and margins. Together these costs made up just over 60% of an average bill for typical consumption levels² at the end of 2012. Total network costs were the next biggest element with almost 20% followed by environmental (and social) costs at 8% or just over £100 per year. Here 'other costs' include metering and network balancing costs. Ofgem includes the costs of the EU ETS in the wholesale costs of energy.

Ofgem breakdown of typical domestic energy bills in December 2012, £ per year

	Gas	Electricity	Combined
Estimated bill	£811	£531	£1,342
Energy, supply costs and margins	67%	58%	63%
Distribution	16%	16%	16%
Transmission	2%	4%	3%
Environmental costs	6%	11%	8%
VAT	5%	5%	5%
Other	4%	5%	4%

Source: Updated household energy bills explained February 2013, Ofgem

² 3,300 kWh for electricity and 16,500 kWh for gas

The latest (November 2013) estimates from Ofgem are less detailed give the following different breakdown of a dual fuel bill:

Wholesale costs	46%
Network and balancing costs	23%
Environmental & Social costs	9%
Supplier costs	13%
Supplier margin	5%
VAT	5%

With wholesale costs split out from supplier costs and margins they made up just under half of the total bill, network costs are higher than the earlier estimates as they include balancing costs while environmental and social costs were slightly higher at 8%.

Supply market indicators

Ofgem normally publishes its [Electricity and Gas Supply Market Indicators](#) every week, but has not done so since the Autumn Statement on 2 December. Their latest version was produced on 29 November 2013. These are a better source of information on *changes* in prices and changes in the component parts of bills because the categories used are much wider. These are covered in more depth in section 2 of this note. The latest indicators put the average dual fuel bill at £1,385 per year based on November 2013 prices (after some suppliers had increased prices). 44% of this was made up of wholesale costs, 47% of (combined) network and operating costs, VAT and environmental/social levies and the remaining 9% the estimated suppliers' net margin. This margin jumped in November after some suppliers raised prices, but Ofgem's analysis showed no real change in wholesale or other costs.

1.2 Department for Energy and Climate Change

The Department for Energy and Climate Change (DECC) publishes estimates of the impact of policies on energy bills and energy prices (unit costs). The main focus of these documents is how the policy impact will change in the future (with the current policy mix) although they do include an estimate of the component parts of a bill. Links to these policy impact documents are given below:

- [Analytical Annex. The UK Low Carbon Transition Plan \(2009\)](#)
- [Estimated impacts of energy and climate change policies on energy prices and bills \(July 2010\)](#)
- [Estimated impacts of energy and climate change policies on energy prices and bills \(Nov 2011\)](#)
- [Estimated impacts of energy and climate change policies on energy prices and bills \(March 2013\)](#)

As with the earlier Ofgem documents there have been methodological changes over time, although the most recent three documents are more consistent. The latest estimated component parts of domestic energy bills are summarised below:

Estimated breakdown of an average household gas and electricity bill in 2013

£ 2012 prices

	Gas		Electricity		Combined	
Estimated bill	£691		£563		1,255	
Wholesale energy cost	£383	55%	£215	37%	£597	47%
Network costs	£124	18%	£133	23%	£257	20%
Other supplier costs and margin	£119	17%	£121	21%	£240	19%
<i>Energy and climate change policies</i>	£33	5%	£80	14%	£112	9%
Energy Company Obligation	£25	4%	£22	4%	£47	4%
Renewables Obligation	-	-	£30	5%	£30	2%
EU ETS	-	-	£8	1%	£8	1%
Carbon Price Floor	-	-	£5	1%	£5	0%
Warm Home Discount ^a	£6	1%	£6	1%	£11	1%
FITs	-	-	£7	1%	£7	1%
Smart Meters & Better Billing	£2	0%	£1	0%	£3	0%
VAT	£33	5%	£27	5%	£60	5%

(a) The gross cost of this policy only. The rebate, estimated at £13 across all consumers, is netted off the total estimated bill figure

Source: *Estimated impacts of energy and climate change policies on energy prices and bills 2012, DECC. Table D1*

The 'typical' levels of consumption used are lower than the gas figures used by Ofgem and higher for electricity. This explains much of the difference in total bill figures and will also affect some elements of the component parts. The DECC estimates put wholesale costs at just under half the combined bill. These exclude the cost of the EU ETS which are listed separately. Network costs at 20% are close to Ofgem's estimates as are the combined 'other supplier costs and margins'. Overall the total estimated costs of energy and climate change policies (environmental and social costs) are estimated at 9% of a combined bill or £112 per year. This is slightly higher than the Ofgem estimates, but they are virtually the same when the EU ETS is accounted for.

The DECC breakdown lists all individual policies that have a direct knock on impact on domestic bills. In brief the Energy Company Obligation (ECO) funds energy efficiency measures, a proportion of which are particularly focussed on groups at risk of or in fuel poverty. The Renewables Obligation (RO) supports large scale renewable generation, Feed-in Tariffs (FITs) small scale renewables, the Warm Home Discount (WHD) gives financial support to those at risk of or in fuel poverty, the EU ETS is a market-based system aimed at cutting carbon emissions across Europe and the Carbon Price Floor is a domestic policy which levies a tax on fossil fuels. Much more background can be found in the following standard notes on the subjects:

- [The Green Deal and Energy Company Obligation](#)
- [The Renewables Obligation](#)
- [Feed-in Tariffs](#)
- [The Warm Homes Discount Scheme](#)
- [EU ETS: Phase II and III](#)
- [Carbon Price Floor](#)

DECC estimates that ECO has the greatest impact of any policy on bills at almost £50 per year for gas and electricity combined. This is followed by the RO with a £30 cost for electricity bills. The WHD is paid for through the bills of all customers and funds payments to certain 'vulnerable' groups. The gross cost is included next to the policy above, but payments (rebates) to vulnerable consumers are netted off in the total policy estimate line.

Accounting for policy impacts over time

Analysis of the policy-related component parts of a bill look at current policy –that funded through levies on bills or which has a knock-on impact on wholesale prices. However, much of these costs, both now and in the past, have been to support energy efficiency measures. These should cut consumption in the year they are introduced and, in some cases, for decades into the future. Lower energy consumption means that such levies can cut customers' annual bills, even if unit costs increase. This is especially true if you look at the impact on consumption of all past policies as calculations cover policies that still have a benefits (through lower consumption) but are no longer being paid for (through levies on bills. Such changes in consumption cannot be included in snapshots of current bill component parts, or on unit costs estimates, but are taken account of by DECC in its estimates of policy impacts on bills that compare current and future bills with an alternative with no past or present policies. This concludes that the net impact of all policies, including those which are not funded through bills or do not need funding (such as boiler regulations or EU policy on the energy efficiency of new products) is that average current dual fuel bills are 5% lower than they would be in the 'no-policy' scenario and are forecast to be 11% lower than this scenario in 2020. Within the current estimates the net cost of all past and present levy funded energy efficiency policies is -£38 for gas and electricity combined.³

DECC also estimates the impact of policies (and other components) on non-domestic bills and on domestic and non-domestic unit prices.⁴

1.3 Energy companies

Four of the six big energy suppliers companies have provided a breakdown of current bills, normally as part of their announcement on price rises. This note does not look these in detail and will not include future updates to these. The five bill breakdowns can be found at the following links:

- news.sse.com/media/69585/energybills_wheredoesitallgo.pdf
- britishgas.presscentre.com/Media-library/British-Gas-average-bill-breakdown-eb.aspx
- www.scottishpower.co.uk/support-centre/billing/billbreakdown
- www.npower.com/home/price-change/information/?WT.mc_id=announcement#tab-2

1.4 Committee on Climate Change

In December 2012 the Committee on Climate Change (CCC) published a largely forward looked assessment of the impacts of meeting carbon budgets on energy prices and bills. They estimated a combined dual fuel bill of just under £1,000 in 2011; 62% was estimated wholesale costs, supplier costs and supplier margins (combined), 24% network costs and metering and 10% environmental and social costs. They included the EU ETS under environmental costs and their estimate. The typical consumption levels used for this calculation were lower than those used by DECC.⁵ This and the fact that they are 2011 estimates explain the lower estimated total bill.

³ [Estimated impacts of energy and climate change policies on energy prices and bills \(March 2013\)](#), DECC. Table F1

⁴ *ibid.* (Annex E)

⁵ Around 3,400 kWh for electricity and 12,600 kWh for gas

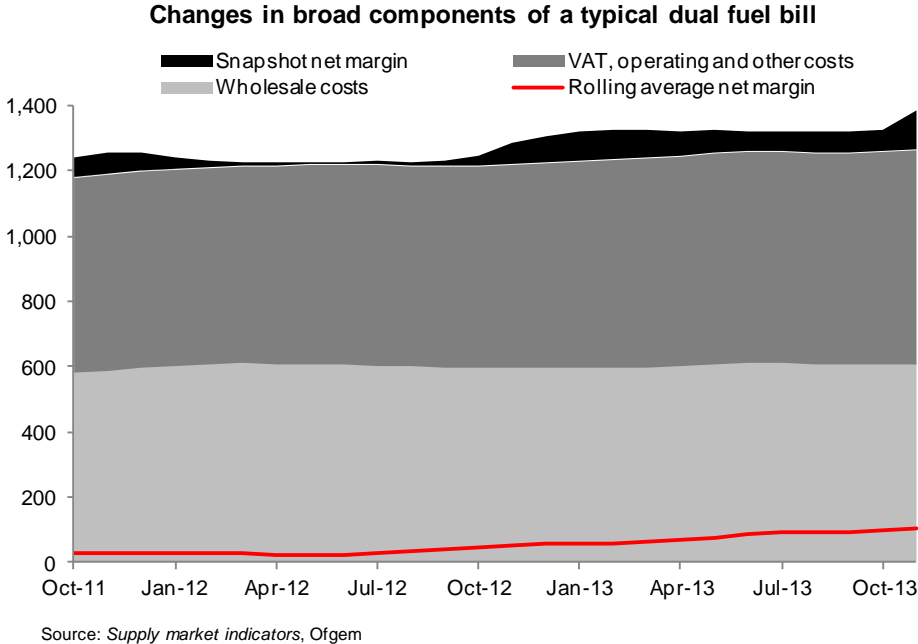
2 Estimates of contributions of different factors to price rises

2.1 Ofgem

Ofgem’s Supply Market Indicators

Ofgem’s weekly [Electricity and Gas Supply Market Indicators](#). These look at average customer bills and the amount of this which is made up of wholesale costs, VAT, operating and ‘other’ costs⁶ and supplier net margins. The net margin is defined as the difference between average customer bills and the sum of wholesale costs, other supply costs and company operating costs.⁷ They stress that this publication does not seek to provide estimates of profits although it is widely viewed as a proxy for changes in profitability. Ofgem refers readers to the [Consolidated Segmental Statements](#) for backward-looking data by company on revenues, costs and profits.

These indicators are the most high profile ongoing assessment of the component parts of domestic energy price changes. The methodology for these indicators has been regularly reviewed and updated. The most recent change was a cut in ‘typical’ consumption levels for both gas and electricity. This has the effect of reducing estimates of company net margins per customer. Ofgem has only backdated its estimates on a consistent basis for two years. These figures are summarised overleaf.



This shows that estimated wholesale costs have changed very little over this period, and have been in the £600-£615 range since December 2011. The wholesale costs data do not simply use the latest spot wholesale prices, but model hedging strategies. They assume an 18-month hedging strategy based on Ofgem’s earlier work in the Energy Supply Probe. The [methodology document](#) shows the impact of different hedging strategies on the assumed wholesale prices over time.

VAT, operating and other costs have increased from an estimated £600 at the start of this period to around £650 in the second half of 2013. This will be due to a combination of higher network costs and higher environmental and social levies.

⁶ Includes network charges for transmission/distribution, environmental and social obligations on suppliers and metering costs

⁷ Includes customer service staffing, IT, sales marketing

The most obvious change in the chart is in net margins. Ofgem prefers the rolling average measure of net margin as an indicator of trends over time. In practice having weekly estimates of 'profitability' are not the helpful as there will always be some time lags and this level of details means you are overwhelmed by 'noise' in the data. The chart shows that the rolling average net margin was £25-£30 until mid-2012 and has subsequently increased to £105 per customer in November 2013. It also implies that the round of price rises last autumn/winter were not driven by increases in wholesale or other costs, but by increases in supplier margins. This and the current estimate of the net margin are disputed by the industry.

While Ofgem's methodology has changed over time it can help to look at a longer time period covering larger price rises. Readers can either view earlier Ofgem indicator [charts](#) covering a period of five years or look at the table overleaf. The data for the last two years straddles the old and new (lower consumption) methodologies. The latest figures in the table separate out operating costs and hence gross and net margins. Since early October 2013 Ofgem has changed the presentation of these categories and made very slight revisions to some of the data which is reflected in the chart above.

Summary of earlier Ofgem Supply Market Indicators, £ per typical dual fuel customer

	Customer bill	Wholesale costs	VAT and other costs	Gross margin	Operating costs	Snapshot net margin	Rolling net margin
Mar-08	£965	£495	£365	£110	£120	-£10	..
Sep-08	£1,215	£665	£390	£160	£125	£35	-£25
Mar-09	£1,190	£705	£395	£95	£130	-£35	..
Sep-09	£1,145	£595	£410	£145	£130	£15	£20
Mar-10	£1,130	£485	£420	£220	£130	£90	..
Sep-10	£1,105	£485	£445	£175	£130	£45	£50
Mar-11	£1,170	£530	£435	£205	£130	£75	..
Sep-11	£1,315	£595	£495	£220	£130	£90	£45
Sep-12	£1,310	£620	£545	£145	£130	£15	£50
Sep-13	£1,420	£630	£565	£220	£130	£90	£90
<i>New methodology (lower fuel consumption figures)</i>							
Sep-11	£1,235	£550	£470	£215	£130	£85	£35
Sep-12	£1,225	£575	£520	£135	£130	£5	£35
Sep-13	£1,315	£585	£535	£195	£130	£65	£65

Source: Supply Market Indicators (various editions, Ofgem)

The fastest period of wholesale price *change* shown here was March 2008 to March 2010. Wholesale costs rose by an estimated £210 per customer in the year to March 2009, bills increased by a slightly larger amount and net margins fell. Over the following year wholesale costs fell by £230, but bills only fell by £60. The biggest increase in cost pressures during this whole period was VAT, operating and other costs, rather than wholesale costs. This increased consistently, by around £200 per customer over this period, while wholesale costs were more erratic and increased by around £135 per customer between March 2008 and September 2013. The (snapshot) net margin has also been erratic. For instance it was estimated to have increased by almost £150 per customer in the two years to March 2010 when customer bills increased at their fastest rate. Selecting time periods in this way can lead to some odd looking results due to the time lags involved in passing on cost increases. In addition the table above starts off from a negative net margin which few would expect to continue whatever the cost trends.

This note will not be updated to reflect all changes in these weekly indicators. Readers should note that none of these estimates take account of the Autumn Statement 2013 changes and supplier responses to them.

It is important to realise that these figures are not all accepted by the industry and are not perfect estimates of the exact costs they face, either collectively or individually.

Understanding energy prices

Analysis produced by Ofgem in October 2013 gave a snapshot estimate of the component parts of a bill, but also included some estimates of the drives of price changes over the past decade and the past year. This stated that in the last decade wholesale costs of electricity have increased by 140% and by 240% for gas. Over the same period environment and social costs have gone from £10 on a typical dual fuel bill to over £100. Looking over the current year (and hence potentially connected to recent price rise announcements) wholesale gas and electricity prices for this winter are 8% and 13% above last year; environmental and social costs are £10 per dual fuel customer higher and network costs are up by around £15 (to £300 per customer).⁸

2.2 Committee on Climate Change

The Committee on Climate Change (CCC) have carried out a broadly similar analysis to Ofgem’s Supply Market Indicators, but looking at a longer time period -price increases between February 2004 and January 2011. The different contributory factors are broken down into the following categories.

Estimated contributory factors to domestic energy price rises Feb 2004 to Jan 2011

	Gas	Electricity
Overall price increase	121%	79%
% of increase in unit costs due to:		
Wholesale energy	66%	54%
Transmission, distribution and metering	20%	13%
Carbon price	-	9%
Renewables	-	6%
Energy efficiency funding	7%	13%
VAT	5%	5%
Estimated increase in annual bill (2004 to 2010)	£295	£160

Source: Household energy bills – impacts of meeting carbon budgets Committee on Climate Change, December 2011

Crucially this covers more of the particularly rapid price increases from the middle of the last decade. Their analysis showed that wholesale costs were the main driver of price rises; however the range of policy-related costs pressures is estimated to have been responsible for 7% of the gas price rise and 28% of the electricity price rise during this period. Energy efficiency funding will have helped to cut consumption during this period to some extent and this is not factored in here as the percentage shares are for unit costs only. The impact of energy efficiency improvements will also be felt into the future through lower consumption. These estimates give a higher policy-related share than Ofgem figures which include the carbon price (through the EU ETS) within wholesale costs.

The CCC has recently updated these figures in a less detailed version. Earlier this month in a [post](#) on their blog they said:

⁸ [Understanding energy prices \(October 2013\)](#), Ofgem

- Very significant energy bill increases in recent years have been mainly due to increases in the price of gas in international markets, with only a small part of the increase due to low-carbon policies.
- Annual energy bills for the typical dual fuel household (i.e. a household using gas for heating and electricity for lights and appliances) increased by £520 between 2004 and 2012, from £610 to £1,130.
- The vast majority of this increase is due to changes in the international price of gas.
- Around £30 of the increase is due to policies which support investment in low-carbon technologies, with a £45 increase due to support for investment in energy efficiency improvement, which improves energy affordability for vulnerable consumers.

The figures on 'green' policies (£30 + £45) make up around 14% of the 2004-2012 increase in a dual fuel bill which is little different from their 2004 to 2011 estimates above. The post added that low-carbon policies over the coming year would add around £10 to a typical bill.

2.3 Energy companies

All of the big six energy companies have announced price rises for this autumn or winter 2013/14. They have all provided their own explanation for the reasons behind these increases. As with their breakdowns of current bills this note does not look these in detail. The five explanations can be found at the following links:

- britishgas.presscentre.com/Press-releases/British-Gas-Household-Tariff-Changes-2ae.aspx
- www.sse.com/PressReleases/2013/OctoberPriceChange/
- www.scottishpower.com/news/pages/scottishpower_to_increase_domestic_dual_fuel_prices_by_an_average_of_8point6_to_recover_rising_costs.asp
- www.npower.com/home/price-change/information/?WT.mc_id=announcement
- <http://newsroom.edfenergy.com/Carousel/EDF-Energy-holds-back-full-impact-of-rising-charges-for-customers-d7.aspx>

3 Further information on selected components of an energy bill

3.1 Energy Company Obligation

Pre-Autumn Statement 2013

DECC estimates that in 2013 the Energy Company Obligation (ECO) made up £47 of a typical dual fuel bill or 4%. This is the largest single bill-funded policy. ECO was introduced towards the end of 2012 as a replacement for the earlier obligations CERT and CESP which were also funded through energy bills. Its objectives are help households in or at risk of fuel poverty and to cut carbon emissions through energy efficiency and heating measures. There are various elements to ECO to ensure that energy efficiency measures are delivered in low income and rural areas and in 'hard to treat' properties. While there are links between ECO and the Green Deal those receiving subsidised energy efficiency or heating measures through ECO do not need to take out Green Deal finance.

The Government has estimated that the ECO will cost companies around £1.3 billion per year to deliver. The obligation itself is defined in terms of the amount of carbon emissions saved and reductions in heating costs, not the amount spent by energy suppliers. This means that the actual cost could vary and the £1.3 billion figure is subject to 'considerable uncertainties'.⁹ Research for the industry body Energy UK published at the end of 2012 estimated that 'correcting' assumptions in DECC's modelling and adjusting their model of customer preferences for possible bias could push annual costs up to £2.35 billion "...but the

⁹ [The Green Deal and Energy Company Obligation. Consultation Document](#), DECC (November 2011)

final costs could be much higher.”¹⁰ EDF’s estimate of the cost of ECO for typical levels of consumption in 2014 is £98 or around double the DECC annual cost estimate.¹¹

DECC receives data on the costs of ECO from all the obligated suppliers and up to the end of August 2013 total expenditure was £420 million. If the average costs are scaled up on the basis that the total obligation is met the annual cost is £1.34 billion or close to the Government’s annual estimate.¹² Final costs in the longer term could well be different from this estimate particularly if the types of installations vary from those carried out in the first eight months of ECO.

Autumn Statement 2013 changes

A number of changes intended to make ECO cheaper were announced in the Autumn Statement 2013. The Government estimates that taken on their own they would result in an annual saving of £30-35 on average.¹³ These changes are subject consultation. The main elements are:¹⁴

- Reduce the carbon emissions reduction target for hard-to-treat properties by one-third for the period up to 2015 and extend the target (pro rata) to 2017. Extend the measures covered under this element to include cheaper options such as loft and cavity wall insulation.
- Maintain the 2015 targets for the other elements of the target (low income and other vulnerable groups) and extend them on the same scale to 2017.
- Widen the definitions of the most deprived areas and poorest rural settlements

3.2 Renewables Obligation

DECC estimates that in 2013 the Renewables Obligation (RO) made up £30 of a typical electricity bills or 5%. The scheme applies to electricity only so also made up £30 or 2% of a typical dual fuel bill. The RO sets a proportion of supply that each company should source from renewable generation. This figure increases each year. Companies can meet this obligation by surrendering the appropriate number of Renewables Obligation Certificates (ROCs), paying into the buy-out fund or a combination of the two. The buy-out price increases each year in line with inflation. Payments into the buy-out fund are recycled to suppliers according to the number of ROCs submitted.

The standard way of calculating the value to suppliers of each ROC is to sum the buy-out price and the value of the recycled buy-out fund payments per ROC. The total value of all ROCs is this figure multiplied by the number of ROCs submitted. The Government estimates the total cost of the RO by multiplying the buy-out price by the total obligation level.¹⁵ Trends in the total costs are illustrated opposite. The cost increases are largely driven by the annual increase in the obligation level. These costs to a typical domestic bill by dividing by total (domestic and non-domestic) final consumption and multiplying by the energy consumption deemed ‘typical’.

Estimated cost of the Renewables Obligation

£ billion cash	
2002-03	0.38
2003-04	0.56
2004-05	0.64
2005-06	0.73
2006-07	0.88
2007-08	1.04
2008-09	1.18
2009-10	1.23
2010-11	1.42
2011-12	1.53
2012-13	1.98

Costs are controlled through the Levy Control Framework. This is an

Source: HC Deb 9 September 2013 c629-30W

¹⁰ [The costs of the Energy Company Obligation](#), NERA Economic Consulting for Energy UK (November 2012)

¹¹ EDF press notice 12 November 2013, [EDF Energy holds back full impact of rising charges for customers](#)

¹² [Energy Company Obligation \(ECO\) delivery costs](#), DECC (October 2013)

¹³ [Autumn Statement 2013](#), HM Treasury

¹⁴ [Proposed changes to ECO](#), DECC (December 2013)

¹⁵ The difference between the cost and value figures if the cost of administering the system which is recouped from the buy-out fund.

arrangement between DECC and the Treasury to control the cost of levy funded policies. The 'spending envelope' within the framework for the RO is £2.6 billion in 2013/14 and £3.1 billion in 2014/15.¹⁶ This is not a forecast of the cost of the RO. It is a limit (of sorts) on costs and DECC would need to take action to control cost if they were forecast to exceed the limit. The Levy Control Framework has been extended to 2020/21 and this sets an upper limit to the combined cost of electricity policy levies. These include the RO, Feed-in Tariffs and Contracts for Difference (CfD)¹⁷ but would also extend to any future levy funded electricity policy.¹⁸ During this period renewable generators could receive support under either the RO or the CfD therefore there is no specific limit for the RO within the overall cap to 2020/21.

3.3 Company profits

Company profits are one area where there is less agreement about contributions to bills. Some estimates of the component parts of a bill simply include profits within much wider definitions of costs and hence avoid directly addressing this contentious issue. There are some good reasons why estimates do not agree and readers may have seen markedly different figures on profits from different sources. The main reasons for this are connected with the nature of the big six suppliers. They are not simple stand alone companies that solely supply gas and electricity to UK customers. All are vertically integrated –generating power and/or producers of fossil fuels. All have separate trading arms. Most are part of a much wider group with parent companies/operations outside the UK and outside the energy sector and have large numbers of subsidiary companies. Therefore headline profits for these wider groups, even if converted to Sterling in a consistent way, reflect earnings on activities other than the UK energy sector. Some costs or revenues can only be expressed at a group level and not assigned to UK energy activities so the strict definition of profit may not be relevant for that part of their business. These factors apply to each of the big six suppliers to a greater or lesser degree, and complicate analysis of their profits individually. These difficulties are multiplied when looking across the industry or comparing suppliers.

The House of Commons Energy and Climate Change Committee looked at the issue of the transparency of company profits in their report *Energy Prices, Profits and Poverty*.¹⁹ After presenting data from company reports on turnover and profits by company they said:

Calculating energy company profits is, however, complicated. Despite very large turnover, and in some cases large pre-tax profits, the big six made significantly different levels of profit and loss in different parts of their business (see table 4). Furthermore, understanding how much profit an energy company was making requires an understanding of company structure (including whether they are based offshore), how they operate in the wholesale market and whether it is easy to trade in the wholesale markets (i.e. are they sufficiently "liquid", and how they use their trading arm - if they have one).

[...]

The big six argued that their businesses were simple, but the structures and relationships between the component elements are varied and complex.

Ofgem has required each of the big six suppliers to publish Consolidated Segmental Statements since 2009. The aim of this is to improve transparency by listing revenues, costs

¹⁶ *Control Framework for DECC levy-funded spending. Questions and Answers*, DECC (2011)

¹⁷ Guaranteed prices for low carbon generation including renewables but also nuclear and carbon capture and storage. Support under this mechanism could apply to new renewable installations, but existing ones would continue under the RO.

¹⁸ *Levy Control Framework update. Extending the framework to 2020/21*, DECC (July 2013)

¹⁹ *Energy Prices, Profits and Poverty*, Energy and Climate Change Select Committee (July 2013). Paras 43-62

and earnings/profits for each of the relevant sections of their UK activities –generation, domestic and non-domestic electricity supply and domestic and non-domestic gas supply. Ofgem has made changes to its requirements to these statements over time and changed guidance to companies to make the statements more relevant. This means that apparent changes over time should be interpreted with caution. More importantly the differences in business structure between these companies limit cross-company comparisons, even with these statements. In their review of the 2011 data Ofgem sites variations in how they use their trading function and the knock on impact on where earnings are allocated to in their business. These statements only include a full breakdown of revenue, costs and earnings for generation and supply. Full earnings from their trading arm are not included and with differences in trading operations across companies there is the potential that transfer pricing could shift earnings from the generation and supply segments.

The table below summarises the basic data across the industry on revenues and profit. The profit figures here are earnings before interest and taxation, the profit margin is this as a percentage of revenue. Profit margins were considerably higher for generation than supply in each year and at each company. The generation sector needs to make large investments in new capacity -profits are an important source of funding for this. These investments are riskier than energy supply and mean companies require higher margins to cover these risks. The combined generation and supply margin across all these companies was 6.8%. Readers should be aware of these differences when interpreting data on profits and profit margins.

Revenue and profit^a data from Consolidated Segmental Statements

Big six suppliers combined

	Revenue £ billion	Profit £ billion	Profit margin
2009			
Generation	10.2	2.3	22.6%
Supply			
Electricity domestic	12.6	0.3	2.1%
Electricity non-domestic	15.6	0.6	3.8%
Gas domestic	12.2	0.0	-0.4%
Gas non-domestic	3.7	0.0	-0.5%
Total supply	44.1	0.8	1.8%
2010			
Generation	9.7	1.6	16.4%
Supply			
Electricity domestic	12.5	0.0	0.3%
Electricity non-domestic	14.1	0.7	4.7%
Gas domestic	12.8	0.7	5.7%
Gas non-domestic	3.0	0.2	6.3%
Total supply	42.4	1.6	3.8%
2011			
Generation	10.7	2.6	24.5%
Supply			
Electricity domestic	12.9	0.2	1.5%
Electricity non-domestic	13.9	0.5	3.3%
Gas domestic	11.5	0.5	4.3%
Gas non-domestic	1.7	0.1	6.5%
Total supply	40.0	1.2	3.1%
2012			
Generation	10.7	2.1	19.9%
Supply			
Electricity domestic	14.0	0.2	1.8%
Electricity non-domestic	14.0	0.2	1.6%
Gas domestic	14.0	0.9	6.7%
Gas non-domestic	2.0	0.2	9.3%
Total supply	44.0	1.6	3.6%

Notes: Due to changes in reporting requirements and guidance the data from different years is not directly comparable

Five companies produced calendar year data, SEE produces financial year data which is allocated to calendar years in this table

(a) Earnings before interest and taxation

Source: Consolidated Segmental Statements, various years

Ofgem's analysis of the 2012 Consolidated Segmental Statements was published in November as: [The revenues, costs and profits of the large energy companies in 2012](#) and summarised in [Understanding the profits of the big energy suppliers](#).