

What's in my energy bill?



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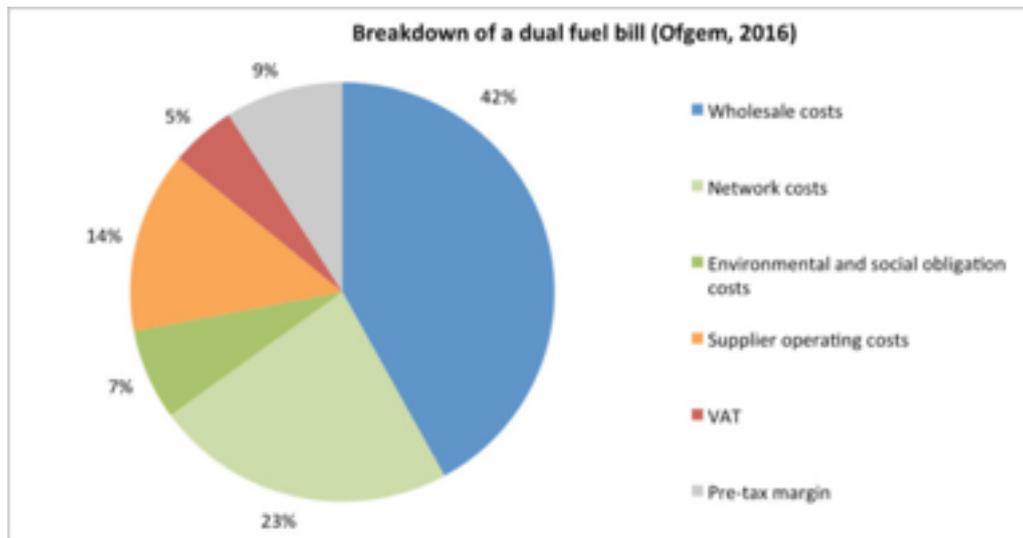
Household bills for gas and electricity almost doubled in the decade to 2014. But the trend reversed in 2015 as bills fell, tracking the falling cost of gas and coal. The government is now projecting much slower rises in fuel prices, with total bills expected to continue falling until the end of the decade.

Energy bills include more than just the cost of gas and electricity. They also cover the expense associated with running and maintaining the gas and electricity networks, government taxes and policies, and the operating costs and profits of energy companies. Social and environmental policies have an important effect on bills, and can reduce customer costs by improving efficiency and cutting waste, in addition to funding decarbonisation of the system.

What are we paying for?

The wholesale price of gas and electricity accounts for nearly half of the average UK energy bill, according to the regulator [Ofgem](#). In addition to these direct energy costs, bills also include the costs of transporting gas and electricity, environmental and social policies, VAT, and supplier profits. Household

bills [almost doubled](#) in the decade to 2014, data from the (now-defunct) Department of Energy and Climate Change (DECC) show. Most of this increase was due to rising energy costs. Only [about 20%](#) was due to low-carbon policies, according to the Committee on Climate Change (CCC), which advises the government on emissions targets.



2015 marked a reversal: both energy prices and household bills fell, following fuel costs. The government now projects much slower rises in residential power and gas prices in coming years, compared with the previous decade.

Wholesale energy prices are the biggest single contributor to bills, at 42% of the total. Natural gas (methane) is the most significant fuel, accounting for nearly two thirds of domestic energy use, for heating and cooking.

Gas is also a significant fuel indirectly, through its contribution to electricity generation. Electricity accounts for a quarter of domestic energy use. It is generated from gas and coal, at 30% each in 2015, and from renewable and nuclear power, at about 20% each. Since spring 2016, coal use for power generation has plummeted, with gas making up the majority of the difference. Britain plans to phase out coal by 2025.

What affects the wholesale price?

Wholesale gas and power prices are determined by the balance of supply and demand in their respective markets. Gas supply is dependent on domestic production and the availability of (and therefore cost of) molecules from the UK's main suppliers: Norway, the Netherlands and Qatar, with demand largely a function of temperature.

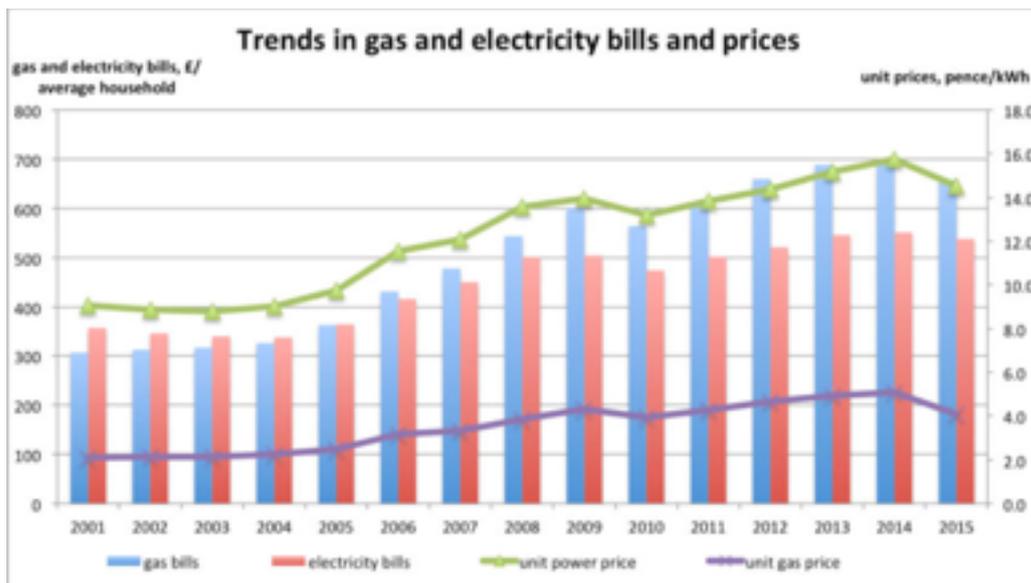
Electricity supply is determined by available power station capacity, the weather conditions that determine output from the UK's wind farms and solar parks, and the cost of power imported from overseas. Demand also largely tracks temperature, but fluctuates during the day to fit with daily life.

The direction of wholesale fossil fuel prices is hard to predict. However, the International Energy Agency expects global gas prices to remain low as a result of ample supplies. Coal prices were expected to remain low, however curbs in production imposed by the Chinese government have led to global prices doubling in late 2016.

While the wholesale power price is not driven by coal prices in the UK, it affects the price of electricity in France and the Netherlands, countries from which the UK import power.

Wholesale prices are also affected by the exchange rate, with coal traded in US dollars and the UK's gas price tending to follow the price of gas at America's Henry Hub. Weaker sterling will increase the cost of importing these fuels, which will pass through into customer bills.

The proliferation of renewable generation capacity has also suppressed wholesale prices, with output from wind and solar power undercutting traditional generation.



Government 'green' policies

The phrase 'green levies' is sometimes used as a shorthand for government measures intended to encourage expansion of low carbon power, to subsidise home insulation and to tackle fuel poverty. These levies were a focus of growing concern when energy bills were rising in the year up to 2014. Prime Minister David Cameron is rumoured to have referred to them as 'green crap'.

In fact, these levies account for only about 7% of household bills. They can be divided between support for energy efficiency, especially to help the less well-off insulate their homes, and for low-carbon electricity technologies.

Low-carbon support will contribute about £60 to the average annual household energy bill of nearly £1,300 in the year to March 2016, according to Ofgem. Support for energy efficiency and vulnerable people will add about £35.

Because support for efficiency reduces energy consumption, the net effect of these low-carbon and efficiency measures is actually to reduce bills overall. Without them, DECC estimates that bills on average would be around 6% higher.

Green levies will rise through 2020, as energy companies progressively switch to a cleaner power system and invest in energy efficiency. However, the government has set a cap on low-carbon energy support under its Levy Control Framework. Despite an increase in subsidies, bills are forecast to fall.

The network for transporting gas and electricity comprises a combination of high capacity, national transmission lines, and more local distribution systems to the end consumer.

Network costs account for nearly a quarter of consumer bills. The cost of the distribution network accounts for most of this.

Ofgem expects the much smaller costs of electricity transmission to rise by about a fifth to 2020, to connect new wind and solar power and upgrade the system. But it also expects electricity distribution costs to fall.

Ofgem says overall network costs will remain about the same.

Energy company profits

Electric utilities pass their running costs on to consumers. These costs account for about 14% of bills, [says Ofgem](#). In addition, suppliers extract a profit margin, which they need for reinvestment and to reward shareholders. That margin has recently varied between 3% and 9% of consumer bills, according to Ofgem.

A big question is whether suppliers are making excessive profits, at the expense of consumers. Ofgem raised concerns in 2011 that the 'Big Six' utilities faced too little competition. Since then, it has [forced them to report profits](#) in each segment of their business and has [opened up the market](#) to smaller suppliers. And the government has forced suppliers [to simplify their tariffs](#) and allow easier switching of supplier.

Still worried about fairness, in 2014 Ofgem referred the energy market to the Competition and Markets Authority (CMA).

[The CMA reported provisional findings in mid-2015](#), declaring that the 'Big Six' were over-charging consumers on standard tariffs and that consumers could make big savings from switching to alternative suppliers. The CMA concluded that the 'Big Six' had 'unilateral market power' which allows them to exploit customers. It said they were charging households more than smaller independent suppliers, and were charging about 5% more than might be expected in a competitive market.

Final results were released in 2016, with onlookers accusing the CMA of watering down its findings: the major change will be the formation of a database containing details of customers, while households on prepayment meters will have their bills capped.

Switching tariffs is one of the best ways of cutting bills, with many customers moved onto higher cost standard variable tariffs as introductory deals end.

And the future?

Both the government and analysts expect wholesale energy prices to remain low, or to rise only slowly, for the rest of this decade. Meanwhile, Ofgem expects network costs to remain about the same, while the CCC expects efficiency gains to offset rises in green levies.

Overall, both the [previous government](#) and [the CCC](#) expect domestic energy bills to fall in real terms up to 2020, before rising again in the decade to 2030.

One big change in domestic energy markets in the next few years will be [the roll-out of smart meters to almost all households](#) by 2020, and the introduction of half-hourly metering to industrial customers in early 2017. For customers, they may allow a switch to cheaper, 'time-of-use' tariffs, if they can use less power during peak periods. For utilities, they will cut costs by bringing an end to property visits for manual meter readings.