How Great Britain's gas and electricity networks work

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Introduction

- Great Britain's gas and electricity energy networks are a major economic asset worth £62 billion, consisting of 1 million km of electricity cabling and 272,000 km of gas pipelines that extend across all regions of the country.
- They employ 36,000 people directly and support many thousands more indirectly through the supply chain.
- This infrastructure plays a vital role in ensuring that it delivers the energy that is the lifeblood of our economy, keeping our lights on, our homes warm and our businesses running.

What are the key facts?

- Our energy networks have a world leading reputation and a strong track record of safely and securely providing the UK with the gas and electricity it needs. They have done so whilst delivering for billpayers and the economy in the following three ways:

1. ***Trusted performance*** - UK energy networks are amongst the most reliable in the world. Customers on average experience an expected power cut on average only once every 2 years and an interruption to gas supply once every 40 years. Customer satisfaction rates are consistently above 80%, higher than most high-street retailers.

2. ***Reduced costs for bill payers*** – Network costs are almost a fifth (17%) lower than they were at the time of privatisation in 1990. They are projected to remain flat, and in some areas fall, into the next decade. Currently the gas and electricity networks each cost consumers an average of 35p a day.

3. ***Delivering investment & innovation*** - By 2020, the UK's energy networks will have attracted some £80 billion of investment since 1990. They will invest £45bn in the next six years alone, almost £10bn more than Hinkley Point C. Since 2013 network companies have made or planned over £256 million of energy innovation projects.

How are the energy networks run?

- Energy networks are run by private companies acting as regulated monopolies. They are organised into different licence areas geographically. A total of 11 different companies hold licences for running the gas and electricity grid in England, Scotland and Wales.
- The Government takes this approach because running network infrastructure is highly capital intensive, the barriers for entering the gas and electricity network markets are high and the stability of a regulated monopoly is the most likely way of delivering sustained investment in the cheapest possible way whilst ensure safe and reliable supplies.
- Because they are granted monopolies, the network companies are highly regulated and held accountable to the public by Ofgem, Government and Parliament.
- The mechanism by which companies invest in and manage the networks is through a price control system called 'RIIO' (Revenue = Incentives + Innovation + Outputs)

What is the cost of network charges on the average energy bill?

- The daily cost of networks to the average bill payer in 2017/18 will be 69p, a slight decrease from 2016/7 levels.
- Because energy networks are highly regulated they are also highly transparent.
- Unlike other parts of the energy bill the cost of running the networks to the energy billpayer are clear. This information is publicly available from the energy regulator, Ofgem.
- The below table summarises recent changes to network charges on the average energy bill:

	Apr-15	**Apr-16**	**Apr-17**	**Apr-18**
Electricity networks	£118.90	£131.20	£123.60	£123.60
Gas networks	£128.10	£129.70	£127.80	£127.80
Networks total	**£247.00**	**£260.90**	**£251.40**	**£251.40**
Annual change		*+£13.90*	*-£9.50*	*£0.00*

Source: Ofgem

How do energy network companies make their money?

- Through the price control system, network companies must deliver their investment plans agreed with Ofgem for the extension, replacement, maintenance and operation of the networks and achieve certain performance targets to earn revenue.
- For every £1 of profit they earn, £1.40 is reinvested back into network infrastructure.
- The network costs charged back to the billpayer reflect the agreed costs of running and securing investment over the 8 year price control period.
- The pricing remains relatively stable and consistent with a downwards trend over that period.
- The revenue the companies make is closely scrutinised by Ofgem on an ongoing basis – if planned projects are delivered at lower cost than network companies will share those savings with consumers.
- Ofgem retains the right to hold a ‘mid-term review’ of the price control and will consult publicly on whether that would be appropriate.
- The annual statutory accounts of network companies filed in Companies House might show a significant return in one year - or indeed over a number of years – but that does not reflect the fact that in subsequent years of the price control they might be investing more and charging less and therefore not making a profit.
- This is particularly the case in the first half of a price control, when the cheaper, quicker and straightforward investments are made – with the more capital intensive, long-term projects being delivered and paid for later on in the period.

If you would like to learn more about the work of the Great Britain’s energy network companies, then please contact Ed Gill via Edward.gill@energynetworks.org or on 07725 372758.