

The Customer is Always Right



Putting consumers back at the
heart of UK energy policy

Richard Howard
Edited by James Frayne



The Customer is Always Right

Putting consumers back at the
heart of UK energy policy

Richard Howard
Edited by James Frayne



Policy Exchange is the UK's leading think tank. We are an educational charity whose mission is to develop and promote new policy ideas that will deliver better public services, a stronger society and a more dynamic economy. Registered charity no: 1096300.

Policy Exchange is committed to an evidence-based approach to policy development. We work in partnership with academics and other experts and commission major studies involving thorough empirical research of alternative policy outcomes. We believe that the policy experience of other countries offers important lessons for government in the UK. We also believe that government has much to learn from business and the voluntary sector.

Trustees

David Frum (Chairman of the Board), Diana Berry, Simon Brocklebank-Fowler, Robin Edwards, Candida Gertler, Greta Jones, Charlotte Metcalf, Krishna Rao, Andrew Roberts, George Robinson, Robert Rosenkranz, Charles Stewart-Smith, Peter Wall, Simon Wolfson.

About the Authors

Richard Howard joined Policy Exchange in December 2014 as Head of the Environment and Energy Unit. Prior to joining Policy Exchange, Richard was Chief Economist at The Crown Estate, and prior to that he worked in consultancy. Richard has a wide range of research interests, in particular energy economics and policy, infrastructure, energy and resource efficiency, environmental policy, and corporate sustainability. He has a BSc in Economics from the University of Bristol and a Masters in Sustainability, Planning and Environmental Policy from Cardiff University.

James Frayne is Director of Policy and Strategy at Policy Exchange. In this role he oversees the organisation's research programme.

James joined Policy Exchange in November 2014, following a period working in New York City. Prior to that James was Director of Communications for the Department for Education between 2011 and 2012, focusing on the Government's extensive reform programme.

James has worked for a number of high-profile organisations in politics and the corporate world. He was Campaign Director of the successful North East Says No campaign in the 2004 referendum and began his career as a policy researcher at Business for Sterling, the anti-euro campaign.

James has appeared widely in the national media. In 2013, his book on public opinion was published – *Meet the People* – which looks at how organisations must prioritise public communications as they seek to shape their reputation.

© Policy Exchange 2015

Published by

Policy Exchange, Clutha House, 10 Storey's Gate, London SW1P 3AY
www.policyexchange.org.uk

ISBN: 978-1-907689-98-7

Printed by Heron, Dawson and Sawyer

Designed by Soapbox, www.soapbox.co.uk

Contents

| | | |
|---|---------------------------------------------------------|----|
| | About the Authors | 2 |
| | Policy Exchange's Environment & Energy Unit | 4 |
| | Acknowledgements | 5 |
| | Executive Summary | 6 |
| 1 | Putting Energy Bills in Context | 11 |
| 2 | Consumer Perspectives on Energy | 22 |
| 3 | Putting Consumers Back at the Heart of UK Energy Policy | 33 |

Policy Exchange's Environment & Energy Unit

Policy Exchange's Environment & Energy Unit conducts innovative and independent policy research into a wide range of environmental, infrastructure and regulatory challenges. Our objectives are to influence policy making and to shape debate. We produce publications, organise events and use the media to promote our findings and policy proposals.

A key focus of our work is to identify ways to tackle environmental challenges effectively, while minimising adverse impact on living standards. We promote well-designed regulation to exploit the power of markets to achieve environmental outcomes innovatively and cost-effectively.

If you would like to find out more about our work, please contact:

Richard Howard

Head of Environment and Energy

Policy Exchange

Clutha House

10 Storey's Gate

London SW1P 3AY

Email: richard.howard@policyexchange.org.uk

Telephone: 0207 340 2650

www.policyexchange.org.uk

Acknowledgements

The author would like to thank individuals from the following organisations for conversations and data that fed into this report: the Association for Decentralised Energy, Aurora Energy Research, the Department for Business Innovation and Skills, Citizens Advice, the Committee on Climate Change, the Department for Energy and Climate Change, the Energy Networks Association, Energy UK, E.On, Frontier Economics, the Green Deal Finance Company, HM Treasury, Knauf Insulation, KPMG, Moodys, National Grid, Ofgem, PWC, Scottish and Southern Energy, and Which?.

Particular thanks go to Dr John Feddersen (Aurora Energy Research), Simon Moore (Citizens Advice), Dustin Benton (Green Alliance), and John Howard, for reviewing a draft of this report.

All errors, omissions and opinions remain the author's own.

Executive Summary

“The customer is always right”

Harry Gordon Selfridge

Policy Exchange recently produced a report ‘Overlooked but Decisive’ which highlighted the political importance of lower middle class households in marginal constituencies in provincial England – a group that we termed the ‘Just About Managing Classes’.¹ The report argued that politicians have largely overlooked the concerns of this group of people, despite the fundamental impact they could have on future electoral outcomes. These are hard-working households that place significant emphasis on values such as fairness, family and decency. They rely on limited disposable incomes, and consequently the ‘cost of living’ is the number one issue to them.

This is the first in a series of reports looking in more detail at how politics can re-engage with the ‘Just About Managing Classes’. In this report we focus on the cost of living and the cost of energy in particular. We explore what households pay for energy, and why; and consider how to reduce the amount households spend on energy bills (or at the very least stem the rise in bills seen in recent years). In particular we focus on the actions that government could take to better manage the costs it controls (i.e. policy and network costs).

What are we paying for energy, and why?

The average household spends £1,340 per annum on electricity and gas, equivalent to 6% of their total household budget.² This rises to around 8% of the household budget for ‘Just About Managing’ households, or to put this in context, more than twice as much as they spend on clothing and footwear.³ Other household costs are relatively predictable and manageable, but households do not feel in control of energy costs, and find energy bills the most difficult to understand.⁴ Long term trends show that retail gas prices increased by 185% in the decade to 2014, and electricity prices by 120% – many times faster than general inflation.⁵ **In fact, gas prices rose faster than all other household goods and services over this period.** In the context of stretched household budgets, this helps to explain why **energy bills are the number one concern in terms of household budgets.**⁶

This raises some basic questions, which form the basis of this report:

- Why are households paying so much for energy?
- What can government do about it?

Rising energy prices and bills have caused a backlash against energy suppliers by the public, the media and by politicians. The energy suppliers have been accused

1 Frayne, J. (2015) *Overlooked but Decisive*. Policy Exchange. The report focused on C1/C2 households (a socio-economic classification), which make up more than 50% of the electorate in marginal constituencies in England

2 Ofgem (2015) Consolidated Segmental Statements

3 Source: ONS Family Spending Survey 2013, 3rd income decile

4 Which? (2015) ‘Energy consumers bamboozled by their bills’. Available at: www.which.co.uk/news/2015/04/energy-consumers-bamboozled-by-their-bills-400728/

5 ONS (2015) Consumer Price Inflation, detailed indices

6 YouGov Survey Results, January 2015, sample of 1,782 adults

of profiteering, failing to pass on reductions in costs, and failing to act in the interest of consumers. Energy has become a politically charged issue, with Ed Miliband proposing in late 2013 to ‘freeze bills for 20 months’, demonstrating the political desire to (be seen to) take action on energy bills.⁷

However, in reality, a significant proportion of the average energy bill is now controlled by government rather than the energy suppliers. Government energy and climate change policies (such as carbon taxes, subsidies for renewable energy, and energy efficiency grants) now make up 7% of the average household energy bill. Network costs (the cost of transporting electricity and gas to end users) account for 22%, and VAT a further 5%.⁸ In total, government controls 34% of the energy bill for the average household, and 47% of the bill in the case of a medium-sized business.

The average household energy bill increased by £240 over the period 2009–2014, and half of this related to increases in policy and network costs (which added around £60 each).⁹ The remainder of the increase was due to increases in supplier operating costs (+£50) and supplier margins (+£70). Notably, wholesale costs (the amount paid by suppliers to purchase electricity and gas) did not contribute to the increase in bills over the period 2009–14, and are now falling.¹⁰ Looking forward, government forecasts that domestic electricity prices could increase by another 18% between now and 2020 (in real terms) with almost all of this increase due to further increases in policy costs.¹¹

The increase in bills, amplified by political rhetoric and media spin, has mounted pressure on the energy sector from a regulatory perspective. Following numerous probes into the energy market by Ofgem (the energy regulator), the energy market was referred to the Competition and Markets Authority (CMA) in June 2014. The focus of the CMA’s ongoing investigation is on features of the energy market which may be restricting or distorting competition and therefore leading to higher prices for consumers. The CMA’s investigation has provisionally found that wholesale markets are working well, but that the high level of customer disengagement has allowed the energy suppliers to overcharge domestic consumers by around £1.2 billion per year.¹² It is not the intention of this report to duplicate the scope of the CMA enquiry, indeed the CMA investigation largely overlooks the significant impact that policy and network costs have on bills – which is the focus of this report.

What do consumers want from energy?

Energy policy is often described as a ‘trilemma’ between the often competing goals of decarbonisation, security of supply, and affordability. It is highly complex, and energy companies and government have not done enough to communicate with consumers – creating frustration and distrust. However, it is clear that there is a mismatch between what consumers want from energy, and what government policy is delivering.

Polling of both households and businesses demonstrates that what they want is essentially ‘affordable energy’. Consumers express an interest in other energy policy objectives, such as security of supply and decarbonisation, but are generally reluctant to pay for them – either through their bills or through taxes. Households have seen real incomes flat-line over the past decade, in part due to the recession which has seriously squeezed household budgets and limited

7 The guardian (2013) ‘Labour would freeze energy prices until 2017, says Ed Miliband’

8 DECC (2014) Estimated impacts of energy and climate change policies on energy prices and bills

9 Ofgem (2015) Consolidated Segmental Statements

10 Ibid

11 DECC (2014) Estimated impacts of energy and climate change policies on energy prices and bills, central scenario

12 CMA (2015) Energy market investigation: Summary of provisional findings report

their ability to afford non-essential goods. The ‘cost of living’ has become a key political issue, both generally and for ‘Just About Managing’ households in particular.

By contrast, government has placed significant emphasis on other energy policy objectives such as achieving decarbonisation and security of supply: setting legally binding carbon targets as well as fixing a security of supply standard. **There has been insufficient attention paid to consumer affordability in energy policy** (policies have been considered on an individual level, but not in the round) and unsurprisingly prices and bills have soared.

All of this has led to significant concern over energy bills, and a ‘circle of distrust’ concerning energy. Consumers distrust energy companies and politicians in equal measure. Politicians distrust the energy industry and their level of distrust is growing. Politicians don’t even trust other politicians to implement sensible energy policy.

Putting consumers back at the heart of uk energy policy

The new government must address these issues in order to create a package of energy and climate policies that is more coherent and sustainable (financially, politically and environmentally). The Conservative party manifesto makes a commitment to ‘cutting carbon emissions as cheaply as possible’ but provides little detail on what this means in practice.

In this report, we argue for a new approach, putting consumers back at the heart of UK energy policy. This is not about abandoning energy and climate change objectives, but identifying ways to deliver them at lower cost, and therefore limiting the impact of policy costs on consumers – an approach we have been advocating for some time, which we call ‘Greener Cheaper’. It is impossible to predict what energy prices will be in the future, but adopting this approach will at least stem the rise in the policy and network components of household energy bills. (Meanwhile the reforms suggested by the CMA will address issues such as competition, supplier profits, etc.)

We outline a practical set of reforms as follows:

Improving management and scrutiny of costs placed on consumer bills

Government needs to significantly improve the management and scrutiny of the costs passed through to consumer bills. The government’s performance to date in managing policy costs on bills has been poor: spending caps governed by the so-called ‘Levy Control Framework’ (LCF) have been breached in all of the past three years. Our analysis indicates a significant risk that the spending cap to 2020 (which rises to £7.6 billion per annum) will also be breached in the absence of changes to policies. **This is reckless and wasteful spending of consumers’ money – the impact of which will be felt for decades to come given the duration of some of the commitments made.** We recommend the following:

- **Institutional Change:** Government needs to create a clearer voice for consumer interests in policymaking in order to minimise the impact on bills and ultimately rebuild trust. We outline a number of options to achieve this: our lead option being to strengthen Citizens Advice’s statutory role as a consumer advocate in energy markets.

- **Improve management of policy costs on bills.** Government needs to substantially improve the way it manages policy costs on bills. We recommend that the existing ‘Levy Control Framework’ should be expanded to include all policy costs on bills (it only has partial coverage at present). It should be subjected to far greater scrutiny, with more regular reporting. Even more importantly, government needs to take steps to achieve policy objectives at lower cost.

Meeting policy objectives at lower cost to consumers

Policy costs represent 7% of the average household energy bill and are projected to increase substantially to 2020 in the absence of change. **We argue that the new government needs to take urgent action to stem the rise in policy costs and shift towards cheaper ways of meeting policy objectives.** This is not only desirable from a ‘cost to the consumer’ perspective, but has become imperative given the squeeze on the energy and climate budget identified above.

There are numerous flaws in the policy approach to date: it promotes expensive technologies ahead of cheaper technologies, puts investor and industry interests ahead of consumers, and pursues targets which are unnecessary and distorting. A significant change in mind-set is required. **We propose an approach that is technology-neutral, competitive, and places greater emphasis on the demand side.**

Our specific recommendations are:

- **Retain the system of carbon budgets, but avoid setting additional distorting technology or sector specific targets.** The 2020 Renewable Energy Target should be scrapped, and the government should resist calls for a 2030 power sector decarbonisation target.
- **Revamp the Green Deal scheme to maximise energy efficiency and reduce bills.** Improving energy efficiency can significantly reduce household energy bills, and is also by far the cheapest way to achieve decarbonisation targets. The Green Deal scheme, the government’s flagship programme to provide energy efficiency loans to households, has largely failed to deliver. The concept is sound, but the scheme needs to be made more appealing to consumers. We have outlined a package of measures to ‘revamp’ the Green Deal, at minimal cost to government, to significantly increase the pace of household energy efficiency improvement.
- **Focus decarbonisation efforts on mature, low cost generation technologies.** Government should focus decarbonisation efforts on mature technologies (assuming that projects are suitably located and meet other environmental considerations), defining a clear and ambitious trajectory for these technologies to move towards zero subsidy by 2020 or shortly thereafter. The new ‘Contract for Difference’ auction model for renewables subsidies has been a success, and should be the focus going forward, with the bulk of funding allocated to mature technologies. New nuclear should be procured on the basis of competition between the various suppliers and technologies available, rather than a bilateral negotiation with one supplier.
- **Curtail deployment of the most expensive technologies and subsidies.** Government must overcome its squeamishness and allow expensive

technologies which show no sign of cost reduction to fail, rather than continuing to prop them up with large subsidies. There should be a cap on the level of support under any subsidy mechanism, which we suggest should initially be set at a 'net subsidy' of £70/MWh (7p/KWh), with a clear downward trajectory. The Feed in Tariffs for micro renewables such as rooftop solar are excessive, and should be cut significantly to stem the increase in policy costs.

- **Create a clear commercialisation strategy for emerging technologies (such as CCS and offshore wind).** To date, the government's strategy for supporting emerging technologies has lacked clarity – resulting in a scattergun approach and some expensive decisions. Whilst we think the focus of effort should be on already mature technologies, there is also a rationale for targeted support to technologies which offer potential in the medium term (i.e. the 2020s). The new government needs to clarify its position on emerging technologies, specifying objectives, the scale of support required, and the timetable over which support will be phased out. If technologies fail to make progress and reduce costs, then support should be removed.
- **Allocate policy costs fairly.** The most energy intensive industries are largely exempted from, or compensated for, most policy costs on competitiveness grounds (i.e. there is a risk that otherwise these industries could become uneconomic and/or relocate away from the UK). We think the government should be far more transparent about the costs of supporting these industries. In the interests of fairness, the cost of this support should fall to the public purse, not to other consumers.

Maintaining pressure on network costs

Network costs represent 22% of the average household energy bill. Network costs are low by historical standards (20% less now than in 1990) and well below the European average. However, there is still scope to reduce the cost of networks further by strengthening the regulatory regime for network companies. Significant concerns have been raised in connection with the latest set of energy network price reviews, and this has resulted in two ongoing investigations by the Competition and Markets Authority. It is questionable whether consumers are getting the best possible deal. Analysis by British Gas suggests that savings of £500 million per annum (£10 per household) are achievable from electricity distribution networks alone.

Our specific recommendations are:

- **Conduct a mid-term review of all network price controls.** Depending on the outcome of the CMA's ongoing investigation into electricity distribution network price controls, there may be a case for a mid-term review of all energy network price controls. The scope of such a review still needs to be defined.
- **Create 'Consumer Challenge Groups' for energy network companies.** We recommend that energy network companies should be required to engage with a 'Consumer Challenge Group' (or consumer panel), to increase the scrutiny of their business plans and price control reviews. This model has been used successfully in the water sector.

1

Putting Energy Bills in Context

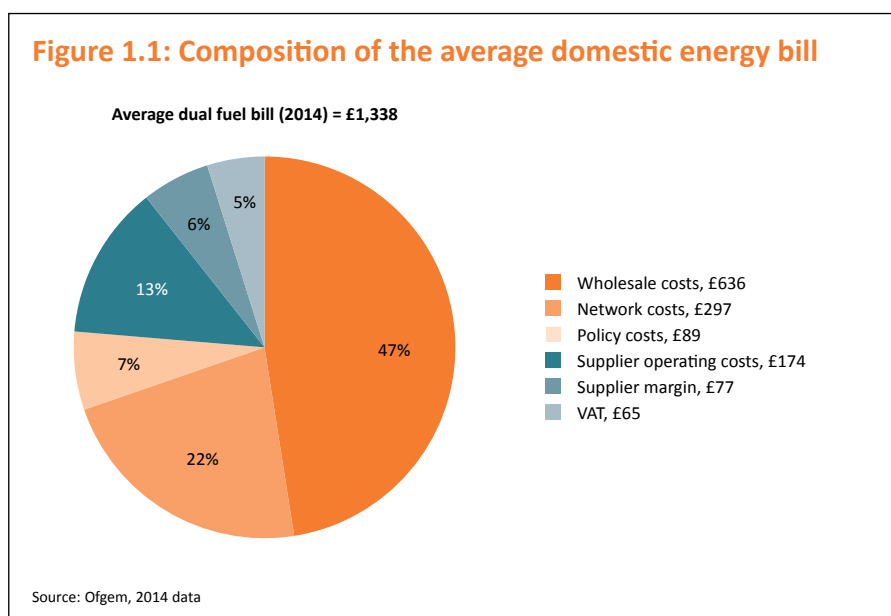
“With great power comes great electricity bill”

Anon

In this chapter we consider what consumers are paying for energy, why bills have increased, and how prices and bills are likely to change over time. We show that policy and network costs have been a significant driver of the increase in bills in recent years, and policy costs are likely to increase further still in the future.

What are we paying for energy, and why?

In total, UK households spent £30 billion on electricity and gas supplies in 2014.¹³ Government data shows that the average household dual fuel bill (i.e. electricity and gas) was £1,338 per annum in 2014.¹⁴ This can be broken down into the main components of cost as shown by Figure 1.1 (it should be noted that the Ofgem dataset used for this analysis includes carbon taxes within ‘wholesale costs’, and therefore underplays the overall contribution that policy costs make to bills).



It is interesting to consider both the composition of costs and who controls each component.

¹³ DECC (2015) Annual domestic energy bills

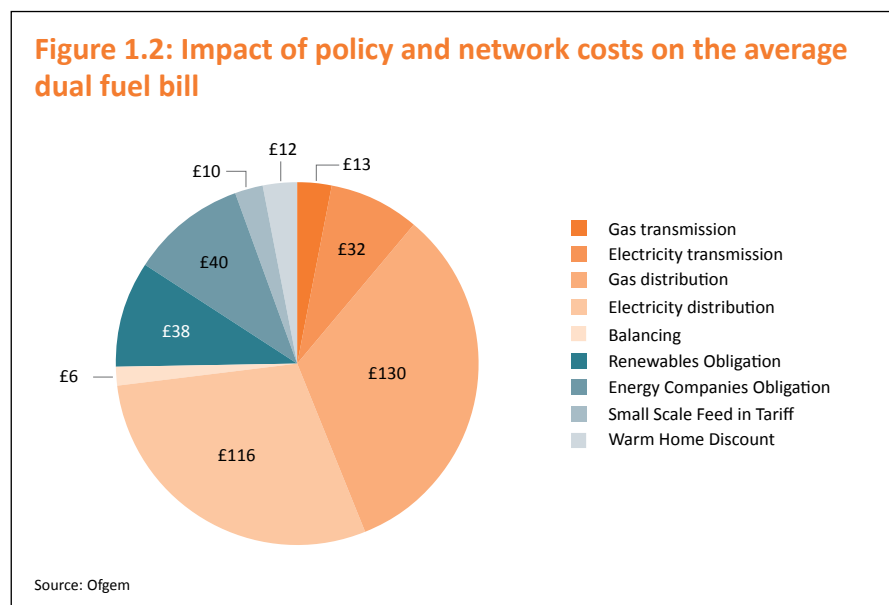
¹⁴ Ofgem (2015) Supply Market Indicator

The largest single component of the average energy bill is wholesale energy costs – the amount energy suppliers pay to purchase gas and electricity. Wholesale costs make up 47% of a dual fuel bill, although the proportion is greater for gas (52%) than electricity (40%).¹⁵ Wholesale costs are principally determined by global commodity prices, in particular the wholesale gas price. This not only feeds through directly to retail gas prices, but also largely determines wholesale electricity prices (since gas is the marginal, price-setting generation technology around 75% of the time).¹⁶ Energy suppliers forward-purchase (or ‘hedge’) gas and electricity, typically up to three years in advance, in order to create stability in pricing, but cannot directly control commodity prices.

Suppliers directly control their operating costs and profit margins, which together make up 19% of the average dual fuel bill. Ofgem estimates the average profit margin for domestic energy supply to be 5.8% in 2014.¹⁷ Margins vary by fuels (e.g. the margin is typically higher on gas supply than electricity supply) and across suppliers. The CMA enquiry into the energy sector has considered the appropriateness of supplier profit margins, provisionally finding that the Big 6 energy companies are making excessive returns. They estimate that domestic customers have been paying £1.2 billion per year (£50 per household) more than would have been the case in a fully competitive market.¹⁸ However, suppliers have been quick to dismiss the CMA’s claim, pointing out that this represents nearly the entire profit they make.¹⁹ The question of what represents a ‘fair’ margin will continue to be contested through the CMA process.

The next largest component 29% of the average bill comprises network and policy costs, which together amount to 29% of the average bill, or nearly £400 per household per annum.²⁰ The largest component of network costs is electricity and gas distribution networks, which make up 18% of the average bill (Figure 1.2). Transmission networks contribute 3% to the average bill.

Figure 1.2: Impact of policy and network costs on the average dual fuel bill



As for policy costs, the government has created complex package of mechanisms to achieve decarbonisation, security of supply, energy efficiency, and fuel poverty objectives, as follows:

15 DECC (2014) Estimated impacts of energy and climate change policies on energy prices and bills

16 Source: Aurora Energy Research

17 Ofgem (2015) Supply Market Indicator

18 CMA (2015) Energy market investigation: Summary of provisional findings report

19 The Telegraph (2015) ‘British Gas: CMA overcharging analysis ‘not credible’

20 Ofgem (2015) Consolidated Segmental Statements

Table 1.1: Summary of policy mechanisms

| MECHANISM | OBJECTIVE | DETAILS |
|--------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Current Mechanisms (i.e. already impact on bills) | | |
| Renewables Obligation (RO) | Decarbonisation | Provides subsidies for renewable electricity projects over 5MW in the form of Renewables Obligation Certificates for accredited projects, backed up by an obligation on suppliers. The scheme opened in 2002, and will close to new projects on the 31st March 2017 (apart from solar PV, for which the RO closed on the 31st March 2015). |
| Small Scale Feed in Tariff (ssFiT) | Decarbonisation | Feed in tariff for renewables projects under 5MW. Operated from 2010 onwards. Generators are paid for the amount of electricity they generate, and receive a separate payment for energy exported to the grid. Rates vary by technology. |
| Energy Company Obligation (ECO) | Energy Efficiency/ Fuel Poverty | Provides grants for energy efficiency installations, primarily in fuel poor and vulnerable households. |
| Warm Homes Discount | Fuel Poverty | Provides energy bill support to elderly and vulnerable households. |
| Renewable Heat Incentive (RHI) | Decarbonisation | Provides subsidies for installations such as heat pumps and biomass boilers which provide renewable heat. Two separate schemes covering installations in domestic and non-domestic properties, which launched in 2014 and 2011 respectively. (Note: the RHI is funded through departmental spending, not consumer bills.) |
| Future Mechanisms (i.e. will impact on bills in the future) | | |
| Final Investment Decision for Renewables (FIDeR) | Decarbonisation | Government ran a one-off competition to allocate subsidy contracts as a transition between the RO and the CfD. Government issued 8 contracts to biomass and offshore wind projects totaling 4.6GW, which will be built out between now and 2020. |
| Contract for Difference (CfD) | Decarbonisation | Feed in tariff scheme for projects over 5MW, which replaces the Renewables Obligation. Covers all low carbon generation plant including renewables, nuclear and CCS. Based on a 'contract for difference' model whereby generators are paid the difference between the market price and a pre-agreed 'strike price'. The first auction round completed in February 2015, and projects will come on-line from 2016-17 onwards. Separately, government issued a CfD on a negotiated basis for a new nuclear power plant at Hinkley Point C. |
| Capacity Mechanism | Security of Supply | Provides payments to providers of reliable sources of capacity (e.g. gas, coal, nuclear) to ensure that sufficient capacity is available when needed. |

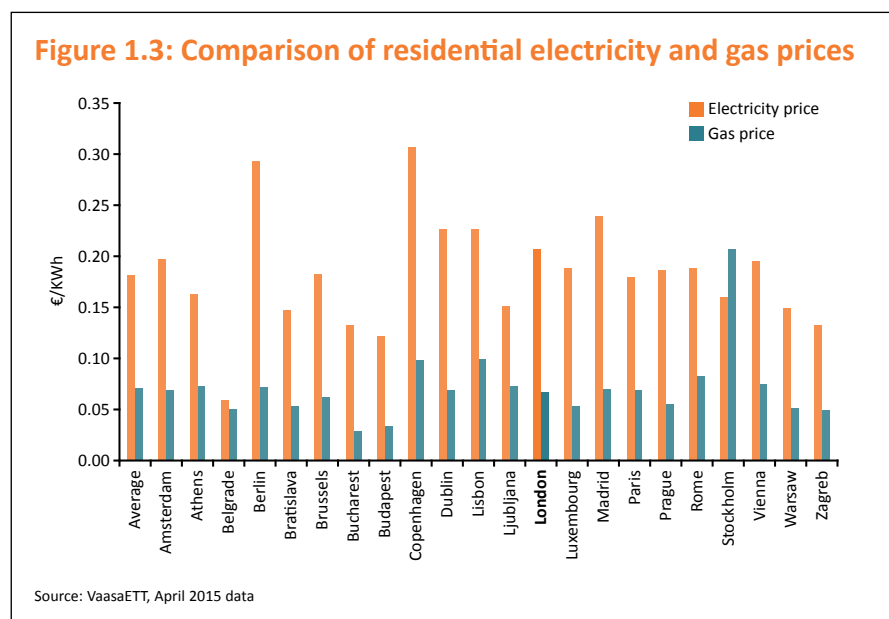
At present, the most significant policy costs relate to the Renewables Obligation and the Energy Company Obligation, which each represent 3% of the average bill, followed by the small-scale Feed in Tariff (1%). The CfD, FIDeR and Capacity Mechanisms will not impact on bills until 2016/17 onwards, as new capacity is delivered under these policies. All of these costs are determined by government and are therefore largely outside the control of the suppliers, with the exception of certain programmes such as the Energy Company Obligation and Smart Meters, where there is an obligation on suppliers to deliver policy objectives, but they manage the cost of doing so.

The remaining 5% of the average bill is VAT, which as discussed later, represents a low rate of taxation relative to other countries.

Overall, suppliers directly control their operating costs and margins (19% of the bill); have limited control over wholesale costs (47%); and have little or no control over policy and network costs (29%) and VAT (5%). The CMA investigation into the energy market is focusing on supplier costs, margins and wholesale costs. It has considered certain aspects of policy costs (such as the competitive allocation of subsidies), but not network costs. Overall, we would argue that there has been insufficient discussion of policy and network costs from a consumer affordability perspective.

How does the UK compare to other European countries?

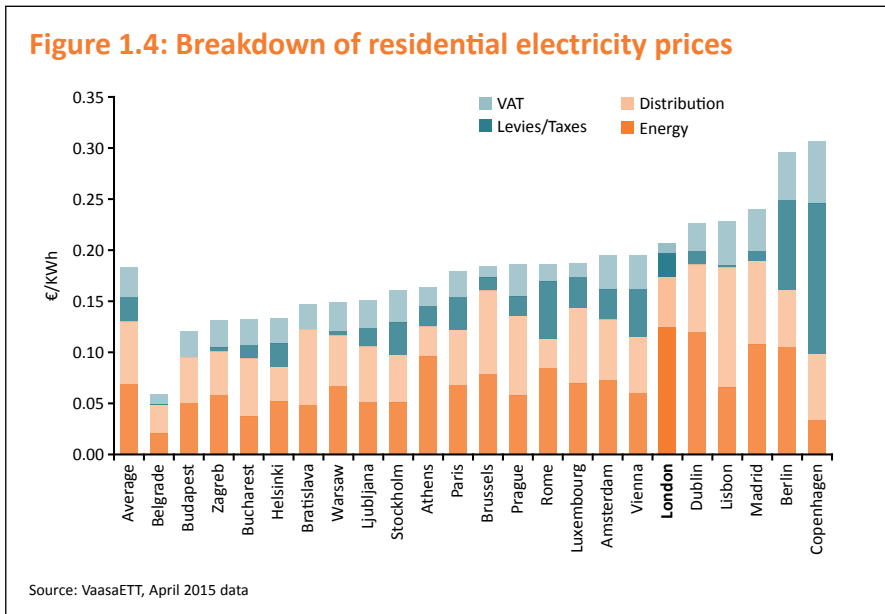
It is a common misconception that we are paying well above the odds for our energy. In fact, UK energy prices are pretty average by European standards. A recent report by analysts VaasaETT, looking at residential energy prices across 23 European capital cities, found that average electricity prices in London are 14% above the average, whilst gas prices are 6% below average.²¹ Electricity prices are considerably higher in Berlin, Copenhagen and Madrid, and considerably lower in many Eastern European capitals. National-level data shows that energy prices in the UK as a whole are just below the European average.²²



Underneath these headline trends, there are significant national differences in the breakdown of the bill into its component costs (Figure 1.4 provides the data for electricity prices). For example, UK customers benefit from the lowest rate of VAT on domestic energy in Europe, at 5% compared to the prevailing 15–20% in most other European countries. It is also notable that network costs in the UK are below the European average (€0.050/KWh in the UK compared to an average of €0.062/KWh across Europe). The other levies and taxes on UK bills are currently average by European standards (€0.023/KWh compared to €0.024/KWh), and considerably below cities such as Copenhagen and Berlin.

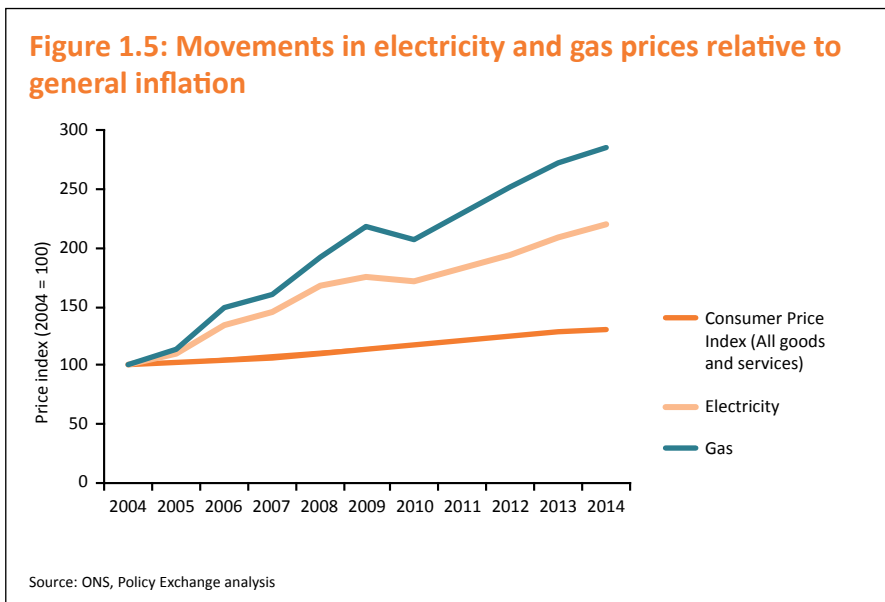
21 VaasaETT (2015) *Household Energy Price Index for Europe*. Available at: www.energypriceindex.com/wp-content/uploads/2015/04/HEPI_Press_Release_April_2015_reviewed.pdf

22 Eurostat (2014) *Electricity prices components for domestic consumers*



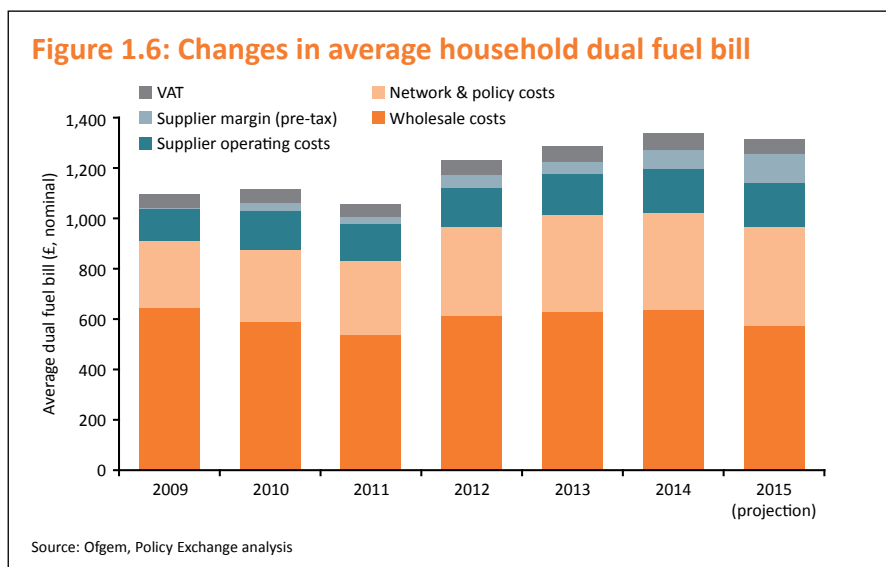
Why have prices and bills increased?

Electricity and gas prices in the UK have risen sharply in recent years, as shown in Figure 1.5. **The retail gas price increased by a staggering 185% over the decade to 2014, whilst the electricity price increased by 120%.** This equates to compound annual growth of 11% and 8% respectively: significantly higher than the general rate of inflation of 2.7%. Gas experienced by far the fastest growth in price of all other household goods and services during this period. In fact, had energy prices risen in line with other goods and services, this would have reduced UK consumer price inflation over this period from 2.7% to 2.2% per annum.



Ofgem provides data on movements in the average bill (as opposed to prices), as well as movements in the underlying costs faced by energy suppliers. **This data shows that the average household energy bill increased by £240 over**

the period 2009 to 2014 – an increase of 22% (in nominal terms). Within this overall trend, bills actually went down from 2009 to 2011, but then increased rapidly from 2011 to 2014.

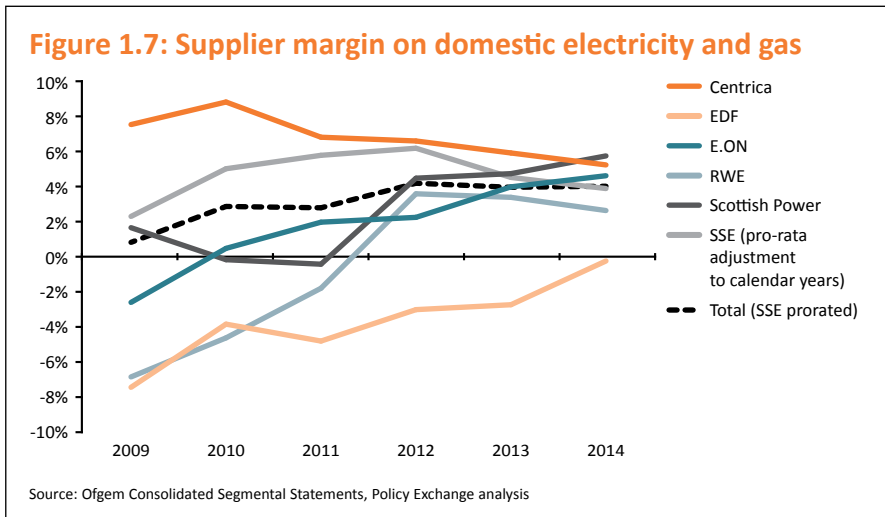


Half of the overall increase was due to an increase in policy and network costs, which together have added £120 to the average bill since 2009. Ofgem’s published dataset does not split this out to show the impact of policy and network costs individually. However, Ofgem has provided additional (unpublished) data which shows that network costs increased by £57 per household between 2009/10 and 2014 (an increase of 25%). The bulk of this relates to an increase in the cost of local distribution networks (as opposed to transmission networks). From this we can also infer that policy costs increased from £26 per household in 2009 to £89 per household in 2014. This represents an increase of over 200% within just five years, adding more than £60 to the average household energy bill.

The remainder of the increase in bills over the period 2009–14 was due to supplier operating costs (which increased by £50 per household), and supplier margins (which increased by £70). Whilst on face value this represents a significant increase in supplier margins, the margin in 2009 was at an unsustainably low level of 0.8%. In fact five of the Big 6 suppliers were making losses in their gas supply businesses in 2009. Supplier margins for the ‘Big 6’ suppliers have now returned to what would be considered a ‘normal’ level, averaging 3.4% over the period 2009–14.

This overall trend masks the relative success of individual suppliers. Centrica/British Gas has generally achieved the highest margins of the ‘Big 6’ suppliers (an average of 6.9% over the period 2009–14) although their supply margin has been dropping consistently since 2010. At the other end of the scale, EDF was making significant losses on its domestic supply activities in 2009, but has gradually reduced these losses over time. As pointed out in a recent research note by Moodys, the suppliers’ margins appear to be converging over time.²³

23 Moodys Investor Service (2015) ‘Retail gas supply margins converge’



Notably, wholesale costs did not play a significant role in pushing up bills over the period 2009 to 2014 (although they did play a major role in pushing up prices during the 2000s). There was significant volatility in wholesale gas and electricity market prices over the period 2009–14, but only part of this fed through to retail prices due to the way in which suppliers forward purchase energy. According to Ofgem data, the wholesale cost component of the average bill reduced by 17% between 2009 and 2011, then rebounded to 2009 levels in 2014 (in nominal terms). Since 2014 there has been a reduction in wholesale electricity and gas prices – in part a knock on effect of the drop in the oil price, which halved during the second half of 2014. Wholesale gas prices followed the reduction in oil prices, and were around £5/MWh lower in winter 2014/15 (on a month ahead or season ahead basis) than a year prior.²⁴ This has already begun to feed through to lower consumer energy prices during 2015.

How have people responded to higher bills?

Beneath the headline trend in bills, there is a dynamic relationship between bills, prices and energy demand. As with most other goods, an increase in the price of energy leads to reduced consumption. For example, people respond to higher prices by turning down their heating, or longer term through purchasing more energy efficient appliances. The relationship between prices and demand is known as the ‘price elasticity of demand’ and varies across product types. The price elasticity of demand for domestic electricity in the UK has been estimated at -0.28 in the short run, and -0.81 in the long run.²⁵ In other words, a 10% increase in prices leads to a 2.8% reduction in demand in the short term and 8.1% reduction in the long run. The price elasticity for gas is thought to be lower (e.g. a long run price elasticity of -0.36 for the USA²⁶) suggesting that gas consumption is less responsive to price than electricity consumption.

Directionally these findings are borne out by recent trend data (see Figure 1.8) which shows that in the period 2009 to 2013 there was a 23% increase in electricity and gas prices,²⁷ alongside a 10% reduction in household energy demand. This limited the increase in the average bill to 17%. In other words, people responded to the higher prices by saving energy where possible, but not enough to entirely offset the increase in prices.

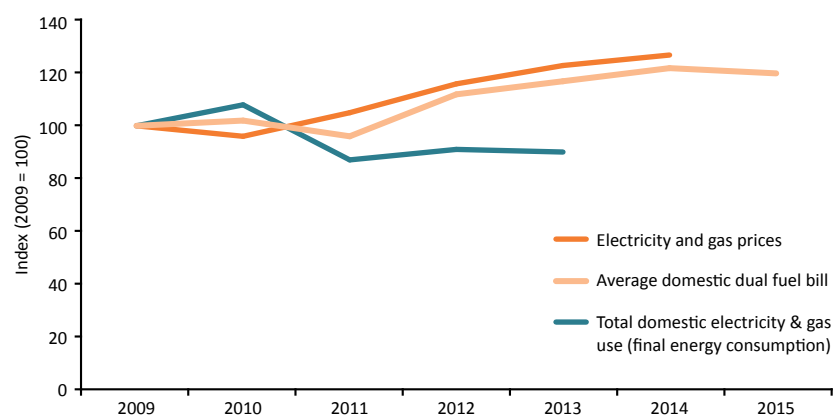
²⁴ Energy UK (2015) *Wholesale market report*

²⁵ Espey, J. & Espey, M. (2004) *Turning on the Lights: A Meta-Analysis of Residential Electricity Demand Elasticities*

²⁶ Bernstein, M. & Griffin, J. (2005) *Regional Differences in the Price-Elasticity of Demand For Energy*

²⁷ Aggregate index for electricity and gas combined, weighted by relative expenditure. Calculated by Policy Exchange using ONS data on Consumer Prices

Figure 1.8: Trends in domestic energy prices, bills and consumption



Sources: DECC, Ofgem, ONS, Policy Exchange analysis

This is supported by qualitative evidence, which suggests that consumers have responded to rising bills through a combination of reducing energy use (where possible), and through reductions in other expenditure. Worryingly, polling data suggests that 36% of households have had to cut back on other essential purchases such as food in order to pay for energy bills, and 46% say that they have had to endure cold temperatures because they couldn't afford higher heating bills.²⁸ Whilst the problem of 'fuel poverty' is most acute for the poorest in society (see our previous report "Warmer Homes"²⁹), many households on moderate incomes also struggle to pay their energy bills.

Another factor at play here is the impact of energy efficiency programmes in reducing demand: for example it is estimated that more than 6 million major energy efficiency measures were installed in peoples homes in the period 2009 to 2013.³⁰ The impact of these measures is unknown, but is likely to have had a significant role in reducing household energy demand.

Looking forward: policy costs will drive prices higher still

This section considers the outlook for future energy prices and bills. DECC periodically produces projections of future energy prices and bills for domestic and business consumers, including the likely impact of existing and planned energy and climate change policies. DECC's 2014 'Prices and Bills' report forecasts a slight reduction in the average domestic energy bill from £1,369 in 2014, to £1,319 by 2020 (in real 2014 prices).³¹ However, this headline trend masks the fact that DECC is forecasting a significant increase in electricity prices, which is more than offset by an assumed reduction in energy demand.

Starting with prices, DECC forecasts an 18% increase in domestic electricity prices and a 4% decrease in domestic gas prices in the period to 2020. All else being equal, the combined effect of these price increases would be to increase the average bill by a further 5%, or £70 (in 2014 prices). Importantly, the forecast increase in electricity prices is driven almost entirely by increases in policy costs (which are largely focused on electricity rather than gas). For domestic consumers, the main policy cost increases relate to the new 'Contract

28 Polling conducted by Survation in October 2013, prepared for the Mail on Sunday. Available at <http://survation.com/wp-content/uploads/2014/04/MailEnergyFinal.pdf>

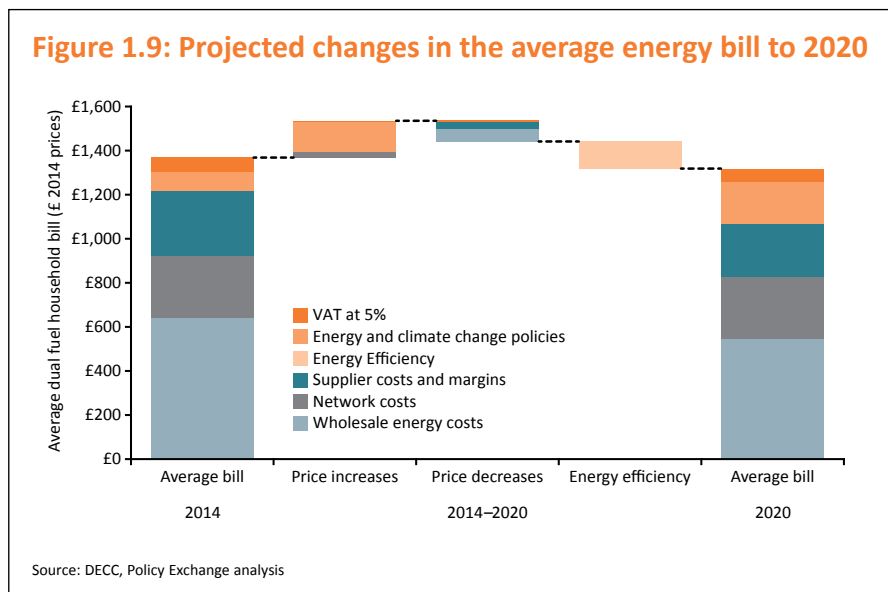
29 Howard, R. (2015) *Warmer Homes*. Policy Exchange

30 Energy Bill Revolution (2014) *ECO and the Green Deal*

31 DECC (2014) *Estimated impacts of energy and climate change policies on energy prices and bills*. Central scenario

for Difference' and Capacity Mechanism, together with increases in the costs of existing policies such as the Renewables Obligation and Carbon Price Floor.

However, DECC assumes that the increase in electricity prices will be more than offset by an energy efficiency saving of 7% between 2014 and 2020 for the average household, which equates to a saving of £120 for the average household (Figure 1.9). Combining these factors, DECC's modelling shows an overall reduction in bills of around £50 per household over the period to 2020. **In other words, DECC's claim that energy and climate change policies are 'reducing bills and saving us money' is entirely reliant on delivering substantial improvements in energy efficiency.**



There is a risk in relying on energy efficiency improvements to deliver the reduction household energy bills. Households may not take up as many energy efficiency measures as expected, the impact of each measure may be less than expected, and the efficiency measures may not be spread equally across households. This concern was clearly shared by Ben Moxham, a former energy advisor to David Cameron, who in a leaked letter stated that 'we find the scale of household energy consumption savings calculated by DECC to be unconvincing... we are interrogating DECC's assumptions further.'³² Similarly, the consumer group Which?, commenting on DECC's energy bill estimates, said "these heroic assumptions rely upon hundreds of thousands of households buying new energy efficient fridges and washing machines".³³ Estimating savings from energy efficiency policies is not straightforward – in fact in its most recent 'Prices and Bills' report, DECC revised down the savings ascribed to historic energy efficiency policies on the basis of new scientific evidence.³⁴ **We think that government should place even more emphasis on energy efficiency as a route to reducing both carbon and household bills (see Chapter 3 for more detail) but this needs to be based on realistic assumptions of the likely impact.**

There are a number of other observations we would make concerning DECC's 2014 analysis of prices and bills:

32 The Telegraph (5th September 2011). 'Advisers' letter to David Cameron on energy and climate policies'. Available at: www.telegraph.co.uk/news/earth/greenpolitics/8741779/Advisers-letter-to-David-Cameron-on-energy-and-climate-policies.html

33 Gosden, E. (2014) Green Levies on energy bills to double by 2020, official estimates show. The Telegraph. 06/11/14

34 DECC (2014) Estimated impacts of energy and climate change policies on energy prices and bills

1. **Prices versus Bills:** DECC's analysis of energy prices and bills is all presented in real terms, which whilst analytically robust, is potentially misleading to consumers. When claims are made that 'bills will decline in the future', or 'bills will decline as a result of government policy', this in fact should be interpreted as 'bills will rise no faster than general inflation'. This should be made clearer in the messaging to the general public around energy prices and bills.
2. **Composition of the bill:** DECC's analysis suggests that the share of the bill controlled by government (as opposed to suppliers) will continue to increase further and further. Policy costs, network costs and VAT will collectively increase from 34% of the average domestic bill in 2014 to 43% in 2020. This trend is even starker for medium sized businesses, where policy and network costs are predicted to increase from 47% of the average bill in 2014, to 52% by 2020. Government needs to recognise that the decisions it takes will have an increasingly significant bearing on future energy bills, whilst suppliers will control a diminishing share of the bill.
3. **Estimating Policy Costs:** DECC has to make a number of assumptions in order to calculate the total cost of current and planned policies and hence the impact on bills. As we will demonstrate in Chapter 3, DECC has significantly underestimated the cost of policies to support low carbon electricity.
4. **Long term forecasts:** Forecasting prices and bills out to 2030 is inherently uncertain, but DECC's central prediction is that the decline in bills to 2020 will be reversed in the 2020s. DECC's projection is for an increase in the average bill from £1,319 in 2020, to £1,524 in 2030 (or real terms growth of 1.5% per annum). The bulk of the expected increase over this period is due to increases in wholesale costs (+£139) and supplier costs and margins (+£38). DECC forecasts policy costs to be broadly stable in this period, but there is a risk that policy costs in the 2020s could be higher than suggested. It is clear from analysis by the Committee on Climate Change (CCC) that additional policies will be required in order to achieve the UK's Fourth carbon budget (for the period 2023–27).³⁵ Depending on how these policies are funded, this is likely to place an additional burden on taxpayers or bill payers beyond what is currently included in DECC's analysis. Moreover, DECC currently assumes that fuel poverty programmes such as the Energy Company Obligation will have ended by 2030, but this is far from clear since there is an ongoing shortfall in funding to address fuel poverty, as shown in our recent report "Warmer Homes."³⁶

Key findings

Energy prices and bills have increased substantially over the past few years, driven in large part by an increase in policy and network costs, which are determined by government not energy suppliers. Looking forward to 2020, energy and climate change policies are likely to give rise to further increases in electricity prices in the order of 18% (in real terms). These costs are largely outside the control of the suppliers. Indeed, the share of the average domestic bill controlled by government (i.e. policy and network costs and VAT) is projected to increase from 34% today to 43% in 2020 (or to 52% in the case of a medium-sized business).

³⁵ CCC (2015) Reducing emissions and preparing for climate change: 2015 Progress Report to Parliament

³⁶ Howard, R. (2015) *Warmer Homes*. Policy Exchange

Energy efficiency improvements may offset some of this increase, as they have done in the past few years, but it would be risky to assume that price increases will be mitigated in full by consumers using less energy. Overall, our analysis suggests that if government wishes to reduce energy prices and bills, it should pay greater attention to the costs it controls (e.g. policy and network costs) in addition to the costs controlled by suppliers, which are subject to an ongoing investigation by the CMA.

2

Consumer Perspectives on Energy

“Your most unhappy customers are your greatest source of learning”

Bill Gates

In this chapter we consider what consumers actually want from energy. We show that consumers’ principal concern is to have ‘affordable energy’: they are reluctant to pay for (or cannot afford) other energy policy objectives. Consumer concern has risen as bills have increased, and this has led householders to mistrust the energy industry and energy policymakers.

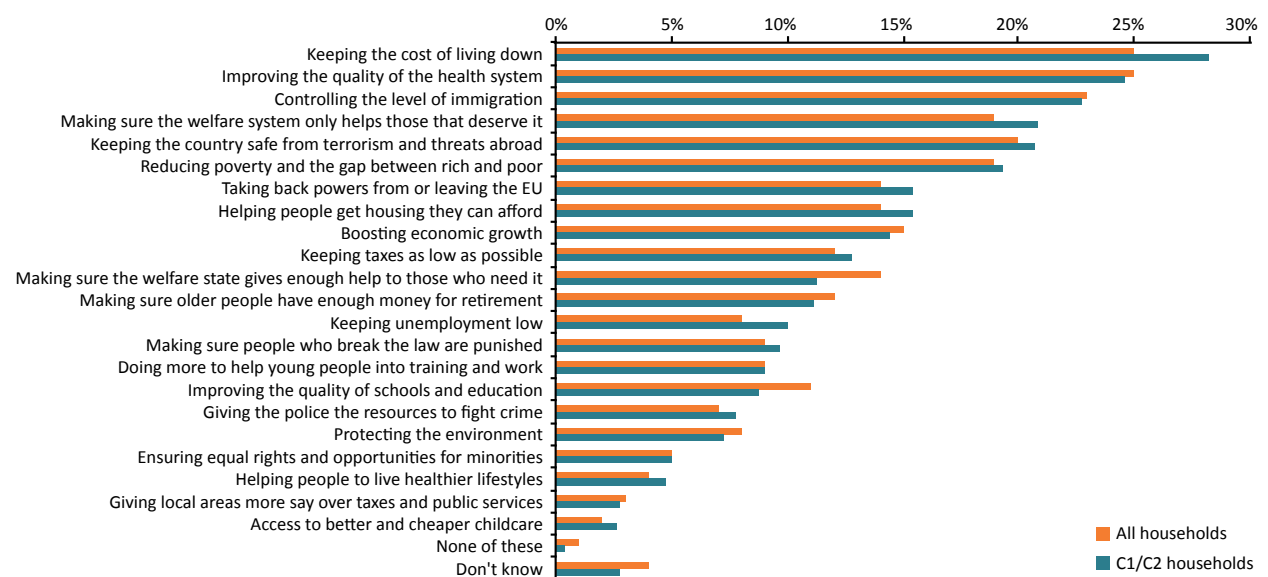
Energy bills are a significant concern for households

Our recent report ‘Overlooked but Decisive’ identified that **the ‘cost of living’ is the number one issue identified by UK households**, being cited more frequently than other policy issues such as immigration, NHS, welfare, national security, and reducing inequality and poverty.³⁷ This is true of the population as a whole, but particularly for households in C1/C2 socio-economic groups (Figure 2.1).³⁸

37 Based on polling by YouGov, for Policy Exchange. Online survey of 1,771 adults conducted in March 2015

38 C1/C2 refers to a socio-economic classification used by the Office for National Statistics. C1 refers to those in clerical, administrative or junior professional roles, whilst C2 refers to those in skilled manual occupations

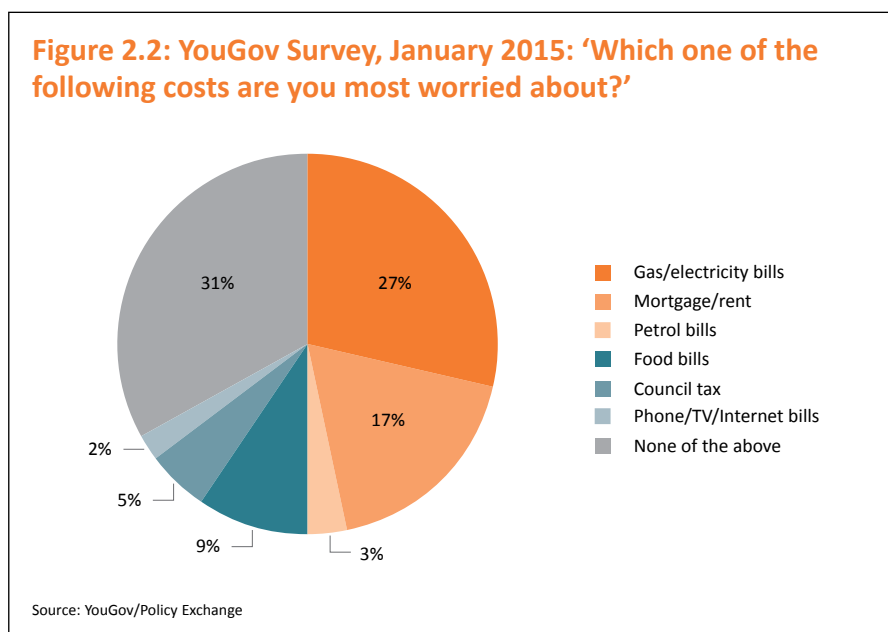
Figure 2.1: Most important policy issues



Source: YouGov/Policy Exchange

Digging further into the data reveals that households earning £30,000–£40,000 are the most concerned about the cost of living across the income spectrum. Households earning £10,000–£20,000 per annum are more concerned about public services, the NHS, immigration, and inequality, although the cost of living still remains a significant concern.

Within the ‘cost of living’, energy bills consistently stand out as the key issue for most households.³⁹ Separate polling by YouGov in 2015 found that **27% of people cite gas and electricity bills as their number one concern in terms of household expenditure**, with ‘mortgage/rent’ the next most cited option at 17%.⁴⁰ The concern over bills is highest amongst older age groups, lower social groups, and households living in Scotland and the North of England.⁴¹ Similarly, SSE/YouGov found that 68% of households identified energy bills as a concern in terms of their household expenditure, compared to 35% for food and drink, 34% for housing, 33% for tax, and 30% for transport (respondents were able to select multiple options).⁴²



What makes this particularly striking is that energy bills represent a much smaller share of expenditure for the average household (6% of total household expenditure) than other costs such as transport (16%), food and drink (13%), or housing (11%).⁴³ It is clear that the concern over energy bills has been amplified in recent years by the rapid increase in energy prices (see Chapter 1), and the fact that people are less able to control their energy costs than other costs such as mortgage payments or food.

The impact of energy bills on household budgets varies significantly across the income spectrum. The average household spends 6% of their total budget on energy bills. This rises to 8–11% of total expenditure for households on low incomes, which to put in context is more than twice as much as they spend on clothing and footwear.⁴⁴ Since energy bill levies are largely allocated on a per unit basis, this means that their impact is similarly regressive.

39 YouGov (2015) ‘Energy Bills Still The Biggest Household Worry’. Available at: <https://yougov.co.uk/news/2015/01/14/energy-biggest-household-concern/>

40 YouGov (2015) Survey Results, January 2015. Available at: https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/pcbmlq3cb/InternalResults_150113_household_bills_Website.pdf

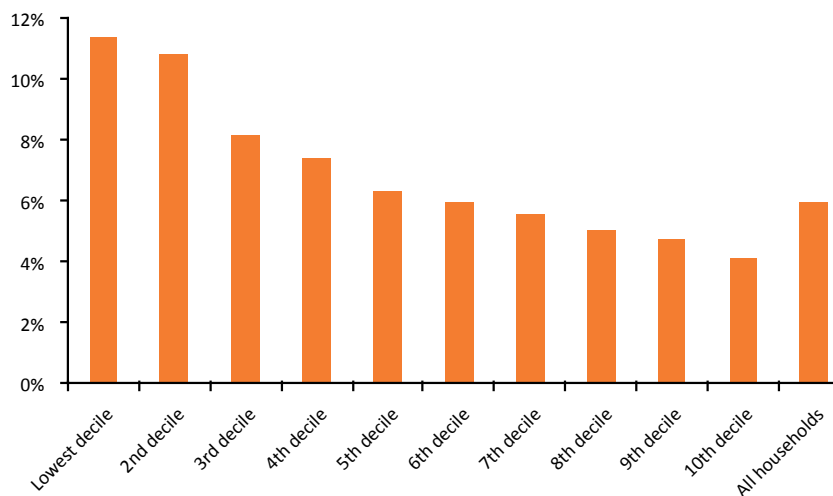
41 Ibid

42 SSE and YouGov (2014) Putting the Consumer First

43 ONS (2014) Family Spending Survey, 2013 data

44 ONS (2014) Family Spending Survey, 2013 data, 1st-3rd income deciles

Figure 2.3: Energy as a proportion of total household expenditure, by income decile

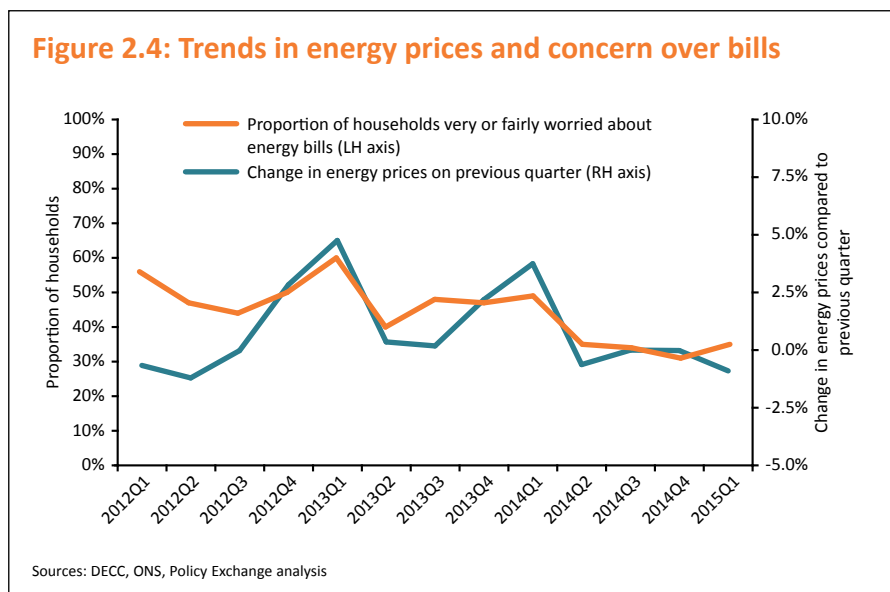


Source: ONS Family Expenditure Survey, 2013

Evidence from a number of studies shows that there is a very strong (and rapid) link between changes in energy prices and the level of concern over bills. For example, research by Consumer Futures Scotland over the period 2010–2012 (a period in which domestic energy prices increased by 20% and bills by 10%) found that the proportion of consumers with ‘no problem in paying’ their energy bill fell from 54% in 2010 to 21% in 2012. At the same time, the proportion saying that they ‘always or sometimes struggle to pay’ increased from 22% in 2010 to 37% in 2012.

More recent evidence from DECC’s Public Attitudes Tracker suggests that the level of concern over energy bills has reduced, as consumer energy prices have recently stabilised. As shown in Figure 2.4, consumers reached ‘peak concern’ over energy bills in Winter 2012/13, when 59% of people said they were ‘very worried or fairly worried’ about paying their energy bills. The stability in retail energy prices since the second half of 2014 has already fed through to a reduction in the level of concern over energy bills, with only 35% of households now stating that they remain concerned over energy bills. This trend can also be seen in polling by YouGov, which shows that energy bills remain the biggest worry in terms of household budgets but the level of concern reduced between 2013 and 2015.⁴⁵

45 YouGov (2015) ‘Energy Bills Still The Biggest Household Worry’. Available at: <https://yougov.co.uk/news/2015/01/14/energy-biggest-household-concern/>



Businesses across a range of sectors and sizes also report significant concern over energy bills. For example, the Federation of Small Businesses (2012) found that 81% of respondents were concerned about the impact of rising energy costs on their business. When the same businesses were asked what action they would take should energy prices rise by a further 25%, 8% said they expected to close as a direct result of the cost increases.

Overall the cost of energy remains a significant concern for households, placing it at the heart of the cost of living debate.

What do consumers actually want from energy?

UK energy policy is often portrayed as a balancing act between the competing objectives of affordability, security of supply, and decarbonisation – the so-called energy policy ‘trilemma’. But how do consumers perceive these competing objectives and the trade-offs between them? And to what extent is this reflected in current UK energy policy?

Within the ‘trilemma’ of energy policy, the UK government has already taken significant steps in terms of decarbonisation and security of supply. The UK signed up to a target under the Kyoto Protocol (1997), to reduce greenhouse gas emissions by 12.5% by 2012 (compared to 1990 levels), which was met by a wide margin.⁴⁶ The UK also signed up to a number of targets under the European 2020 Climate and Energy Package.⁴⁷ The UK has set unilateral targets for greenhouse gas emissions to 2050 under the Climate Change Act (2008), including a set of five-year carbon budgets (with the 4th carbon budget set out to 2027). Government has created a raft of measures in order to hit these targets, including renewable energy subsidies and investment in energy efficiency (described in Chapters 1 and 3).

On security of supply, the UK is perceived as being amongst the leading countries in the world. The US Chamber of Commerce ranked the UK 5th amongst large energy users from a security of supply perspective, and in the same index the UK has consistently outperformed the OECD (a grouping of mainly rich countries) since 1980.⁴⁸ However, the UK’s relative performance has declined

46 Committee on Climate Change: <http://www.theccc.org.uk/tackling-climate-change/the-legal-landscape/climate-change-act-and-uk-regulations/>

47 European Commission (2015), *Europe 2020 Targets, Climate Change and Energy*. Available from – http://ec.europa.eu/europe2020/pdf/themes/16_energy_and_ghg.pdf

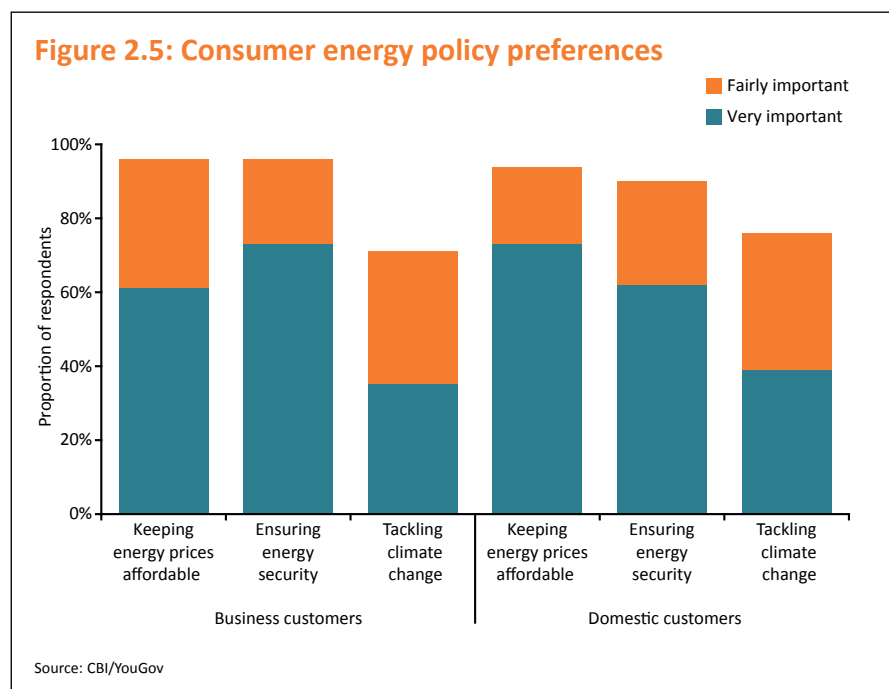
48 US Chamber of Commerce (2015) International Index of Energy Security Risk

since 2004, due to increasing dependence on imported fuels, and a declining power capacity margin. As a result, government has set a new security of supply standard for electricity under the Energy Act 2013. New generation capacity will be delivered in the short term through the creation of a ‘Supplementary Balancing Reserve’, and in the longer term (i.e. from 2018/19) through a new Capacity Mechanism, which procures new capacity and power plant lifetime extensions.

Whilst the decarbonisation and security of supply dimensions of policy have been largely fixed, the government has taken a less explicit role in managing energy affordability, with no definition or goals in terms of what it means for energy to be ‘affordable’. Government seeks to minimise the cost to consumers of individual policies and interventions. However, there has been a gradual accumulation of policy costs, which are determined by government but paid for through consumer bills.

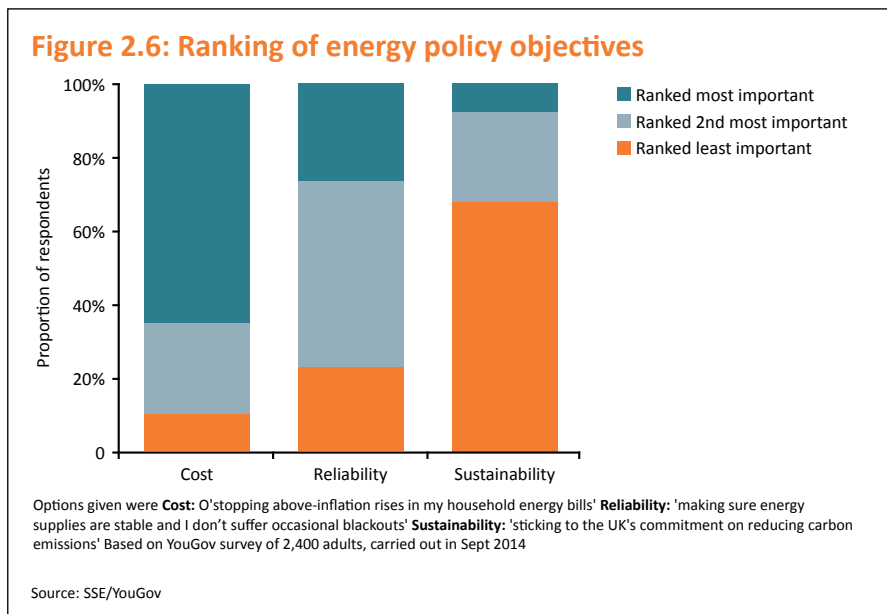
So to what extent does government energy policy reflect consumer preferences?

It is clear from the polling evidence (Figure 2.1) that the cost of living is the key consideration for most people: above all other policy issues in terms of importance, and well above issues such as ‘protecting the environment’. Within the sphere of energy policy, consumers place greater emphasis on ‘energy affordability’ than they do on other policy priorities such as decarbonisation and security of supply. For example, a survey by CBI/YouGov asked domestic and business consumers to rate the level of importance they placed on affordability, security of supply, and climate change.⁴⁹ Affordability came out as the principal concern, with 96% of businesses and 94% of domestic consumers rating it as ‘very or fairly important’. Businesses also place a very high priority on security of supply, with 73% seeing it as very important and 23% as fairly important. The level of concern for tackling climate change was lower with only 35% of businesses and 39% of domestic customers seeing it as ‘very important’ (Figure 2.5).



49 CBI/YouGov (2014) Business and public attitudes towards UK energy priorities

When forced to make a more explicit choice, affordability dominates other energy policy concerns, as evidenced in a survey by SSE/YouGov (Figure 2.6).⁵⁰ Two-thirds of respondents (65%) identified cost as their primary concern and only 10% of ranked cost as the least important. Around half of people (51%) identified reliability as their second highest concern, and two-thirds of respondents ranked sustainability ('sticking to the UK's commitment on reducing carbon emissions') as their least important objective. This ordering of priorities is repeated in a study by UKERC.⁵¹



Underlying these findings, there is a clear disconnect between the level of general concern that people express about climate change issues, and their desire or ability to do anything about it. For example, a survey by SSE/YouGov found that 64% of people support the idea of an 80% carbon emissions reduction target by 2050, but only 22% said they are willing to pay more for their energy in order to fund emissions reduction measures.⁵² When asked if 'the UK should stick to its commitments on reducing carbon emissions even if it means higher energy costs for households', some 30% of people agreed, but 43% of people disagreed (the remainder were either unsure or did not express a preference).

People express concern about the environment and climate change, but are reluctant to pay to take action on these issues due to other pressures on their finances and the already high price of energy. The British Social Attitudes Survey found that only 20% of people would be willing to accept a cut in standard of living for the sake of the environment.⁵³ Interestingly, there is a very strong link between household income and concern for the environment: households on higher incomes are more likely to identify 'protecting the environment' as one of their top three concerns than those on lower incomes. Conversely the level of concern over 'cost of living' falls once household incomes reach £40,000 per annum (Figure 2.7).

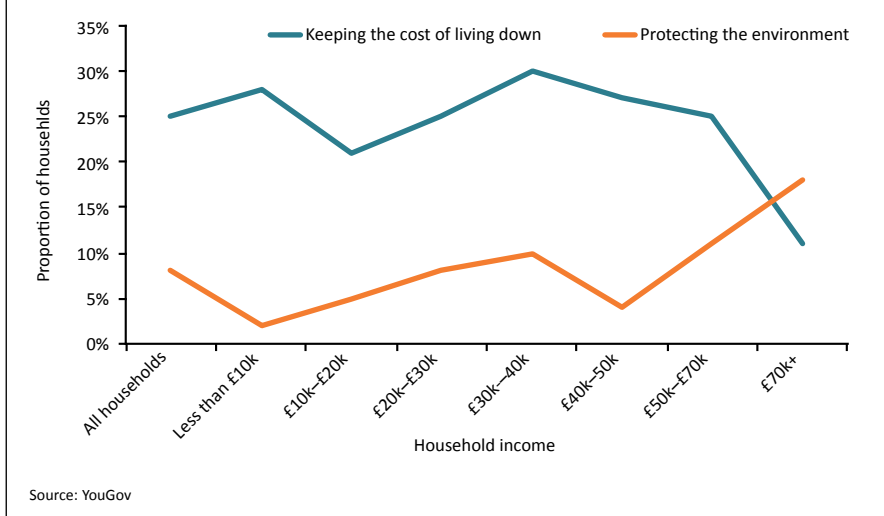
50 SSE and YouGov (2014) Putting the Consumer First

51 UKERC (2013) Transforming the UK Energy System: Public Values, Attitudes and Acceptability: Summary findings from a survey conducted August 2012

52 SSE and YouGov (2014) Putting the Consumer First

53 ONS (2010) British Social Attitudes Survey. Available at: http://ir2.flife.de/data/natcen-social-research/igb_html/index.php?bericht_id=1000001&index=&lang=ENG

Figure 2.7: Concern for ‘cost of living’ versus ‘protecting the environment’



But how important are consumer viewpoints in setting energy policy?

The literature would seem to suggest that consumer acceptance of policy is extremely important, particularly given the scale of transformation of the energy system required to meet decarbonisation objectives. For example, UKERC argues that ‘the British public wants and expects change with regard to how energy is supplied, used and governed...public acceptability may only be achieved if it is rooted...in [consumers’] described value system’.⁵⁴ UKERC argue that policymakers involved in energy system transitions ‘need to treat public viewpoints with integrity valuing the contribution they make’ and that failure to do so is likely to result in ‘resistance to energy system transformations or conflict over particular issues’. Similarly, the World Bank argues that ‘a climate policy package must be attractive to a majority of voters and avoid impacts that appear unfair or that are concentrated in a region, sector, or community’.⁵⁵ **Whilst consumer perspectives may not always be entirely clear, coherent and self-consistent, they often point to the boundaries of acceptable policymaking.**

In short – policymakers should pay significantly more attention to consumer preferences, and reflect these to a greater extent in both policy and rhetoric. It is imperative that UK energy policy delivers security of supply and decarbonisation, but government also needs to ensure that energy remains affordable. In Chapter 3 we consider ways in which government can achieve decarbonisation objectives at lower cost to the consumer, as well as increasing transparency and scrutiny on the costs placed on consumer bills.

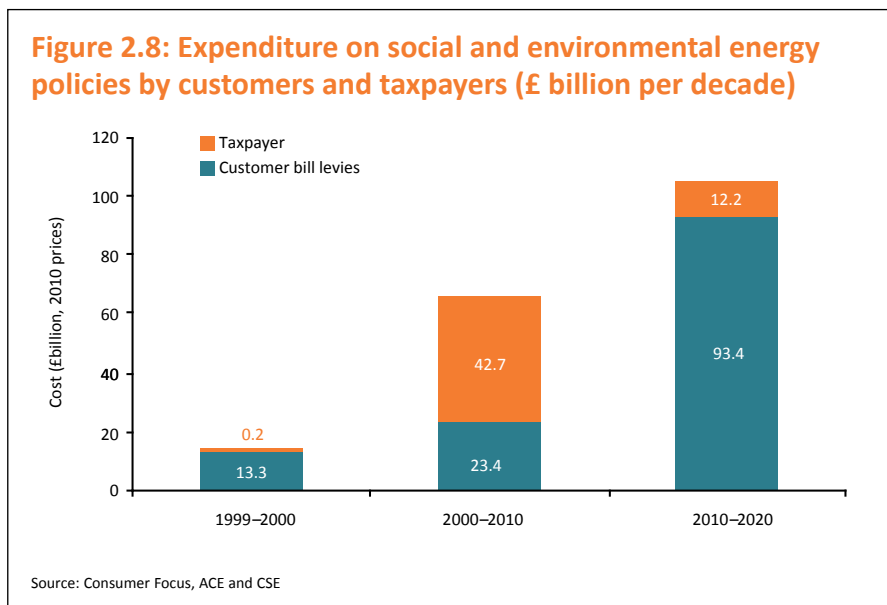
Funding energy and climate policies

Throughout this report we have demonstrated the significant impact that policy costs have on consumer bills. It is clear that the achievement of energy and climate change objectives will come at a cost, but there remains an open question in terms of how policies should be funded, and the costs allocated. Energy and climate change policies are currently funded mainly through levies placed on consumer bills, but this has not always been the case and is not the only option.

54 UKERC (2012) Transforming the UK energy system: Public values, attitudes and acceptability

55 World Bank (2015) Decarbonizing Development

Analysis by Consumer Focus, ACE and CSE shows that in the 1990s, the £13.5 billion total cost of energy policies was funded almost entirely through levies on consumer bills.⁵⁶ During the 2000s, there was a substantial shift from consumer levies towards funding policies from general taxation, with levies making up just 35% of the total (the total cost also grew substantially to £66 billion over the decade). This shift reversed in the 2010s, with a boom in consumer bill levies against a decline in taxpayer funding for energy policies. **Of the estimated £105 billion cost of energy policies over the course of this decade, nearly 90% is expected to come from consumer levies**, leading to the knock on impact on prices and bills as explored throughout this report.



A number of studies have considered consumer preferences for how energy policies should be funded. For example, data from the British Social Attitudes Survey shows that willingness to fund policies through either taxes or prices was generally low, although the resistance to taxes was higher: 26% of people stated that they would be willing to pay much higher prices for the sake of the environment (38% were unwilling), whilst only 22% said they would be willing to pay much higher taxes (50% were unwilling).⁵⁷ Research suggests that people generally have an inherent preference for funding policies through taxes rather than levies, but after more deliberative questioning the same people end up shifting back towards bill levies rather than taxes due to their dislike of VAT and income tax.⁵⁸

A study by MVA Consultancy suggests that consumers' willingness to pay for energy policies varies considerably depending on the intended policy outcome, and people's innate views about the issue.⁵⁹ Specifically, **respondents were generally willing to pay more to protect vulnerable households from high energy bills, and to pay for energy efficiency improvements, than they were to fund low carbon power generation** (which they thought should be funded by the state or industry). Similarly, research by Consumer Futures Scotland suggested that consumers accepted the case for targeted subsidies and energy efficiency improvements for certain groups of consumers, but were less sympathetic of

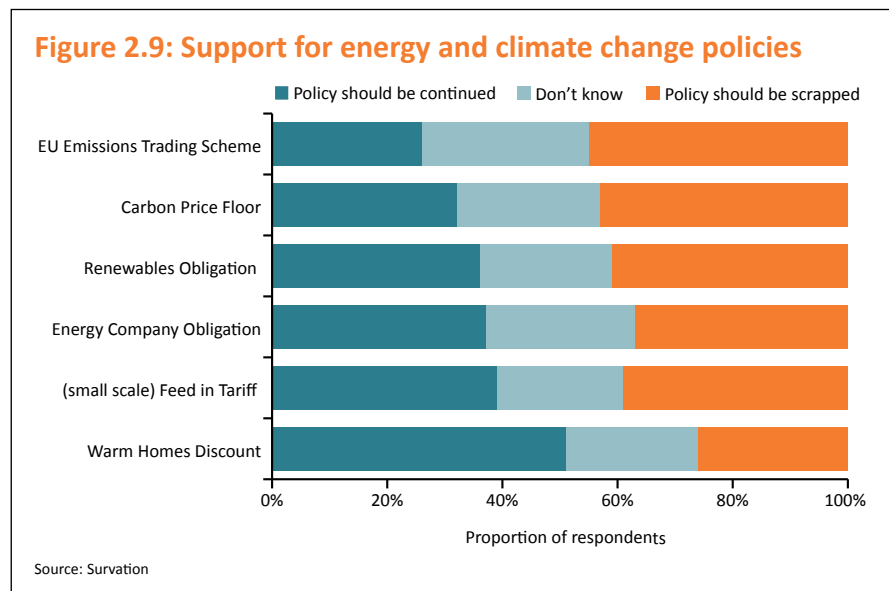
56 Consumer Focus (2012) Who Pays?; citing analysis from Association for the Conservation of Energy and the Centre for Sustainable Energy (2012) Past and future trends in environmental and social levies

57 ONS (2010) British Social Attitudes Survey. Available at: http://ir2.flife.de/data/natcen-social-research/igb_html/index.php?bericht_id=1000001&index=&lang=ENG

58 Accent (2012) Deliberative research into consumer attitudes to social & environmental taxes and charges

59 MVA Consultancy (2012) Consumers' willingness to pay social and environmental charges

charges that they saw as providing no benefit, such as carbon taxes.⁶⁰ Polling by Survation found that the most popular of the current policies is the Warm Homes Discount (which provides energy bill discounts to vulnerable households), whilst carbon taxes are the least popular.⁶¹



Research also suggests that public opinion becomes more sympathetic to green taxes when the uses of the revenue were better understood.⁶² However, public awareness of how energy policies are funded remains very low: in a survey over two-thirds of people said they were completely unaware that social and environmental charges were being included in their bill.⁶³

Overall this paints a very mixed picture. It is unclear whether there would be public support for moving policy costs from bill levies to general taxation (e.g. VAT or income tax) due to the general dislike of taxes. It does, however, suggest that far more needs to be done (by government and the energy industry) to communicate the policy costs that are already levied on consumer bills.

A circle of distrust

Rising prices, concerns over bills, and the mismatch of consumer preferences against government policies have all led to a low level of trust within the energy market – or what could more accurately be described as a ‘circle of distrust’ between consumers, energy suppliers and government. Research by YouGov suggests that **only 14% of people trust energy suppliers to provide a reliable and fairly priced energy supply, and only 12% trust politicians to bring in effective policies.**⁶⁴

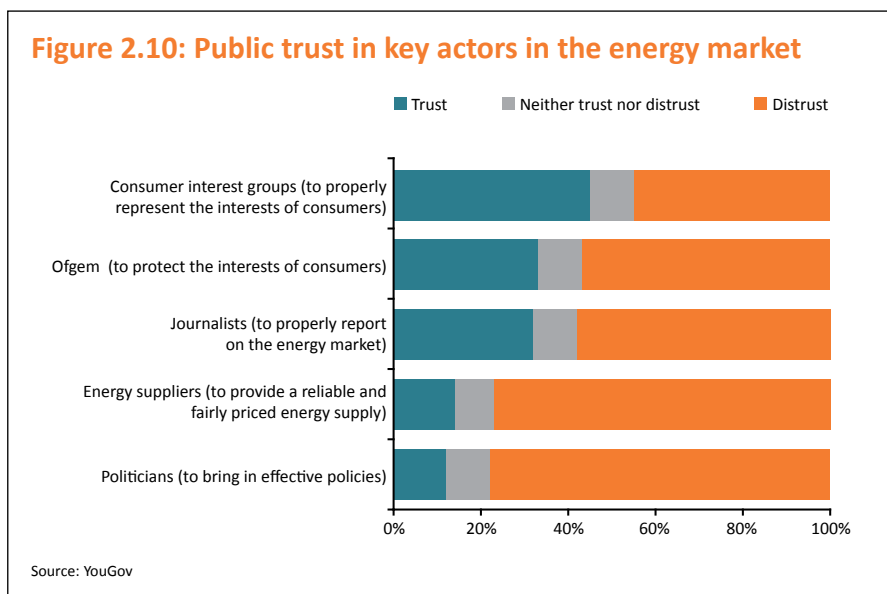
60 Consumer Futures (2014) ‘Energy policy, constitutional change and consumers in Scotland’. Available at: www.consumerfutures.org.uk/files/2013/07/Energy-policy-constitutional-change-and-consumers-in-Scotland.pdf

61 Polling by Survation conducted in October 2013, on behalf of the Mail on Sunday. Available at <http://survation.com/wp-content/uploads/2014/04/MailEnergyFinal.pdf>

62 Green Fiscal Commission (2009) Public Opinion on a Green Tax Shift

63 MVA Consultancy (2012) Consumers’ willingness to pay social and environmental charges

64 YouGov (2014) Energy, Politics and the Consumer



The same research suggests that the level of consumer trust in utilities is low compared to other sectors: only 7% of people say they trust the utility sector to act in the interest of consumers and the wider society – below the oil and gas sector (9%), banking (10%), alcoholic drinks manufacturers (11%), insurers (14%), and manufacturers of military equipment (15%). The only industries that fared worse than the energy sector in this assessment were government departments (6%) and gambling firms (5%).

Other studies paint a slightly more nuanced picture. For example GfK found that 62% of people trust their own energy supplier, but only 27% of people say they trust other energy suppliers.⁶⁵ By contrast, 43% of people said they trust mobile phone providers, 44% trust car insurance providers, and 52% trust banks offering current accounts. Different conclusions can therefore be drawn, depending on whether you compare with the respondents' own supplier or other suppliers.

But in any case, this is not where the distrust ends. **In a survey by YouGov, 82% of MPs said they have little or no trust in the energy suppliers, and 66% said they have little or no trust in Ofgem.**⁶⁶ Moreover, half of MPs surveyed (47%) said they do not trust other politicians to bring in effective policies, and 41% said they have limited or no trust in consumer interest groups to represent the public's views properly. A separate study by Ipsos MORI found that MPs generally trusted energy companies to keep the lights on (47% trust, 19% distrust) and promote energy efficiency (47% trust, 28% distrust) – but not to offer competition in the energy supply (10% trust, 73% distrust) or protect the vulnerable from high energy prices (3% trust, 80% distrust).⁶⁷ Ipsos MORI also found that MPs' trust in energy companies had declined substantially between 2009 and 2012 – particularly in terms of competition, innovation, and 'keeping the lights on'.

65 GfK NOP (2015) Energy Market Investigation: A report for the Competition and Markets Authority

66 YouGov (2014) Energy, Politics and the Consumer

67 Ipsos Mori (2012) Findings of Summer 2012 Study of Britain's MPs

There are several possible explanations for the lack of trust in energy suppliers:

- **Confusion over energy bills:** a recent survey by Which? found that 74% of people find their energy bill too complicated (by contrast only 14% of people find their landline bill too complicated, the next most cited option).⁶⁸ The same survey found that only 30% of people were completely confident that they could check the accuracy of their energy bill.
- **Customer disengagement:** the majority of domestic customers are disengaged from the energy market, for example 73% of households have not switched supplier for at least three years. One of the barriers preventing switching is apathy, or simply the feeling that all suppliers are the same: 46% of people think that there are no real differences between suppliers and the prices they charge. Worryingly, the groups of people most likely to be disengaged are more vulnerable consumers: pensioners, households on low incomes, those with low qualifications, and those living in rented accommodation.⁶⁹
- **Customers think suppliers are making huge profits:** A study by YouGov found that the average consumer thinks that supplier profits represent 26% of the bill, when in reality supplier margins have been below 5% over the last few years, as shown in Chapter 1.⁷⁰
- **Misunderstanding of increases in bills:** customers think that suppliers are to blame for increases in energy prices and bills. In a study by CBI, 61% of domestic consumers identified the main cause of energy prices rises as ‘energy company profits.’⁷¹ Similarly, in a SSE/YouGov poll, 57% of domestic consumers identified ‘energy supplier profits’ as the main cause of price rises, followed by wholesale prices (15% of respondents), and green levies (8% of respondents).⁷² In reality, as shown in Chapter 1, the increase in bills in recent years has predominantly been due to increases in policy and network costs, with the increase in supplier margins making up less than 30% of the overall increase in bills.

68 Which? (2015) ‘Energy consumers bamboozled by their bills’. Available at: www.which.co.uk/news/2015/04/energy-consumers-bamboozled-by-their-bills-400728/

69 GfK NOP (2015) Energy Market Investigation: A report for the Competition and Markets Authority

70 YouGov (2014) Energy, Politics and the Consumer

71 CBI (2014) Business and public attitudes towards UK energy priorities

72 SSE and YouGov (2014) Putting the Consumer First

Key findings

The analysis in this chapter presents a generally negative picture of the energy market from a consumer perspective. **Polling suggests that above all else, consumers want ‘affordable energy’.** However, what they have experienced instead is a sharp rise in energy prices, pushing energy bills to become the number one concern in terms of household expenditure, and linking to the wider ‘cost of living’ debate.

The lack of understanding of the causes of price increases has led to a low level of trust in energy suppliers. Moreover, the mismatch between consumer preferences and government policy has led to a distrust of politicians and government to set effective energy policy. Politicians blame the energy suppliers, completing a circle of distrust.

3

Putting Consumers Back at the Heart of UK Energy Policy

“Dreading that climax of all human ills – the inflammation of his weekly bills”

Lord Byron

This chapter sets out a new vision; putting the consumer back at the heart of energy policy. Central to this vision is the idea that government needs to better manage the policy and network costs it controls. As shown in the preceding chapters, these costs have been a significant contributor to the increase in prices and bills in recent years, creating concern and distrust amongst consumers.

Our analysis and recommendations focus in three areas:

- Ways to increase the voice of consumers in policymaking, with far greater scrutiny and transparency over the costs passed on to consumer bills.
- Ways to meet objectives at lower cost to the consumer. We propose an approach that is more competitive and technology-neutral, and that places a greater focus on demand-side solutions such as energy efficiency.
- The effectiveness of the current regulatory approach in maintaining pressure on network costs.

Overall, our proposals are an evolution and refinement of current frameworks, rather than a fundamental change in direction. Our approach is not about abandoning energy and climate change objectives, but identifying practical steps to achieving them at lower cost to the consumer.

Improving management and scrutiny of costs placed on consumer bills

Chapter 2 explored the balancing act in energy policy between decarbonisation, ensuring security of supply, and maintaining affordability. As we have shown throughout this report, the government has in recent years placed insufficient emphasis on consumer affordability, and policy and network costs have spiralled as a consequence. There are a number of possible explanations for this which we explore in this section:

- An institutional bias towards the carbon and security dimensions of the energy ‘trilemma’;
- Lack of a top-down view of the aggregate costs to the consumer;
- Inadequate scrutiny of individual policy decisions;
- Poor budgetary management (particularly of low carbon subsidies); and
- Weak regulatory regime for network costs.

Institutional framework for energy and climate policy

DECC is a meeting place for many different policy objectives, which to varying degrees have been institutionalised through the structure of DECC and its agencies, and the setting of targets. Government has set legally binding targets in respect of carbon, and receives advice on how to achieve them from the Committee on Climate Change. On security of supply, DECC has established a security of supply standard, and receives advice on how to achieve it from Ofgem (supported by evidence from National Grid).

However, there is no clear policy or definition of what constitutes ‘affordable energy’, and the institutional voice for consumers is relatively weak by comparison. Ofgem (a non-ministerial department) has a primary duty to ‘protect the interests of existing and future consumers.’ But as an economic regulator this function is largely focused on the promotion of competition and regulation of energy companies, and does not extend to critiquing other government energy policy. Alongside this, the role of ‘consumer advocate’ in the energy sector was previously carried out by Energywatch, which subsequently became Consumer Focus, and then Consumer Futures (a non-departmental public body). Consumer Futures was disbanded in 2014, with its statutory duties handed over to Citizens Advice (a charity). Citizens Advice’s role largely focuses on issues such as consumer protection and interaction with energy suppliers, rather than energy policy generally. It has no formal role in advising DECC or critiquing government policy from a consumer affordability perspective (although it has a more formal relationship with Ofgem in respect of energy sector regulation). Of DECC’s executive and advisory bodies, the only one which considers consumers is the ‘Fuel Poverty Advisory Group’, but this has a narrow remit concerning fuel poverty rather than consumer affordability in general.

The weak institutional voice for the consumer is exacerbated by other factors such as DECC’s internal structure, and the way in which DECC consults on policy. Consumer affordability appears to be given relatively little profile in DECC’s internal structure – although this has improved slightly in the last 2 years. Prior to 2013, DECC had a ‘consumer insight’ team, but this was at a relatively low level in the organisation, and focused on understanding consumers rather than protecting their interests.⁷³ A re-organisation then led to the creation of a new Directorate for Consumers and Households, although its focus is largely on improving consumer service, choice and energy efficiency,⁷⁴ not consumer affordability or the burden of policy costs. DECC considers the value for money of individual policy decisions through its Impact Assessment process, but very little consideration appears to be given to the aggregate impact of policies on prices and bills in the round, or to the distributional impact of policies.

DECC and Ofgem consult externally on policies, and the level of consultation has increased in recent years. However, in the main the responses received are

73 DECC (2015) DECC Organogram. Available at <https://www.whatdotheyknow.com/request/40002/response/97357/attach/4/Decc%20Organogram.pdf>

74 GOV.UK (2014) *New Director General for Consumers and households appointed – 10/01/14*, Accessible: <https://www.gov.uk/government/news/new-director-general-for-consumers-and-households-appointed>

from industry rather than consumers or their representatives (with the exception of consumer groups such as Citizens Advice and Which?, who provide regular feedback). Moreover, government tends to consult on individual policies rather than considering the cumulative impact on consumers. Ministerial meetings are also heavily skewed towards industry rather than consumer interests. For example in the period January to June 2014 (the latest period for which public data is available) the then Secretary of State Ed Davey met a total of 117 external organisations, only 5 of which could be considered to represent consumer interests.⁷⁵

Similar concerns were raised in the CMA's recent report on the energy market, which considered whether the lack of independent scrutiny of policy decisions was leading to inefficient policy design. The CMA concluded that there was a need for "more effective assessment of trade-offs between policy objectives and communication of the impact of policies on prices and bills."⁷⁶

Recommendations

There are a number of ways in which government could improve the current institutional framework to provide a greater voice to the consumer:

- One option would be to strengthen the role of Citizens Advice as a consumer advocate. For example, it could assume some more specific responsibilities, such as providing impartial data and analysis on the affordability of policy decisions (in the same way as the Office for Budgetary Responsibility does for public finances), regular reporting to DECC and parliament on the consumer affordability of energy (in the same way as the Committee on Climate Change does for carbon targets), and scrutinising impact assessment (in the same way as the Regulatory Policy Committee considers the impact of policy on business).
- Another option would be to broaden Ofgem's duty to 'protect the interests of existing and future consumers' to consider consumer interests in DECC policies. Again this could include new duties and responsibilities as outlined above. However, this would take Ofgem outside its core role as an economic regulator, which may confuse matters. It is also likely to increase the level of conflict between Ofgem and DECC, which has already been identified as a concern.⁷⁷
- A third option would be to create a new independent body to represent and increase the prominence given to consumer affordability. An analogue to this would be the 'Consumer Council for Water' in the water and sewage sector. In a similar vein, there have recently been calls for the creation of an independent 'Office for Energy' to provide impartial analysis on the performance and affordability of policies.⁷⁸ The main drawback of creating a new body is that this would effectively reverse the decision taken a year ago to merge Consumer Futures (which performed similar functions to the Consumer Council for Water) into Citizens Advice, and may confuse the institutional landscape.

Any one of these options would be an improvement on the status quo. But on balance our preference is the first option: to **strengthen the role of Citizens Advice to represent consumer interests in the energy sector**. This would require changes to the scope and definition of its statutory duties (as outlined above). It

⁷⁵ GOV.UK (2014) *Edward Davey's meetings with external organisations: January to March 2014*. Accessible at: <https://www.gov.uk/government/publications/edward-daveys-meetings-with-external-organisations-january-to-march-2014>. <https://www.gov.uk/government/publications/edward-davey-external-meetings-and-hospitality-april-june-2014>

⁷⁶ CMA (2015) *Energy market investigation: Notice of possible remedies*

⁷⁷ *Ibid*

⁷⁸ Vivid Economics (2015) *The case for an Office of Energy*

would also require Citizens Advice to have a stronger and more formal relationship with DECC: Citizens Advice currently reports to BIS (the Department for Business Innovation and Skills), which means that DECC has limited ownership or buy-in to the organisation. Citizens Advice currently has privileged access to Ofgem decision-making (e.g. sitting on various boards and committees) but interestingly does not have the same access or responsibility across DECC policy.

Another dimension of the institutional landscape is the connection between energy affordability and the wider debate about the cost of living, and the cost of utilities in particular. Across energy, water, telecoms, and transport, much of our new infrastructure is being paid for by consumers – either through bills or fares. But the government does not have a joined up approach to assessing the cumulative impact of infrastructure on households. As the National Audit Office stated in a recent report: “Government and regulators do not know the overall impact of planned infrastructure on future consumer utility bills, or whether households, especially those on low incomes, will be able to afford to pay them. It seems critical to know ‘how much is too much’, based on reliable information.”⁷⁹ Whilst energy is typically the largest utility cost faced by households, water, telecoms, and transport costs can also be significant – particularly when aggregated together. **DECC needs to link up with Treasury (Infrastructure UK) and other departments and agencies to ensure that the cost of energy is considered alongside other infrastructure on a comparable basis, and to improve understanding of the aggregate impact on consumers.**

Improving the management of the policy costs on bills

As shown in Chapter 2, the majority of energy and climate change policies are funded through levies on consumer bills, rather than through taxation. This means that they fall outside normal departmental spending plans, and the high level of scrutiny that this entails. Given the similarities between levy funding and government ‘tax and spend’, in 2010 DECC and HM Treasury put in place the ‘Levy Control Framework’ (LCF) to manage and cap the cost of levy-funded schemes. DECC is required to keep costs within a pre-agreed limit, which will rise from £4.3 billion in 2014/15 to £7.6 billion in 2020/21 (in 2011/12 prices). If costs look likely to exceed the LCF cap, then DECC must take steps to bring them within budget – particularly if the ‘headroom’ of 20% looks likely to be exceeded.

Putting in place the LCF was, in theory, a good piece of policy. It sets a clear limit on costs for DECC to work within. The LCF reporting requirements provide some transparency and allow external bodies such as the Treasury and the National Audit Office (NAO) to scrutinise DECC’s plans. From DECC’s perspective, it provides far greater budgetary visibility than enjoyed by most other departments (i.e. up to 5–7 years as opposed to normal 3 year settlements), which is essential given the lead times for building new energy infrastructure.

However, there are a number of issues with the framework, which need to be addressed going forward in order to improve its usefulness as a mechanism to control the impact of policies on bills:

1 – Scope of the Levy Control Framework

Despite what its name suggests, the LCF *does not* include all levies on consumer bills. It includes the small-scale Feed in Tariff, Renewables Obligation, Warm Homes Discount (until 2015–16), and will include the new Contract for

⁷⁹ NAO (2013) Infrastructure investment: the impact on consumer bills

Difference mechanism.⁸⁰ However, the remit of the LCF does not extend to other policy costs such as the Energy Company Obligation, Renewable Heat Incentive, Capacity Mechanism, or Smart Meter programme, which DECC and HM Treasury classify as ‘regulations’ rather than ‘levies’. A review by the NAO in 2013 concluded that there was no clear definition of what constitutes a levy and therefore which policies should fall within the framework. The key point is that government currently lacks a framework to manage the cost of all policies on bills in a holistic manner.

We recommend that the LCF is continued, but expanded in scope to include all policy costs levied on consumer bills. The LCF cap value would need to be adjusted accordingly to include all policies. The cap should reflect the total policy cost that is deemed acceptable and affordable (i.e. as opposed to the amount required to achieve energy and climate targets). Expanding the scope in this way would force government to communicate with energy suppliers to understand and report the policy costs they manage (e.g. the Smart Meter and Energy Company Obligation programmes).

This enhanced LCF would not only provide a holistic picture of the impact of levies on bills, but also create a framework to manage them. Creating this framework would encourage more debate about the relative merits of different policies, for example supporting low carbon electricity versus energy efficiency. Some may see this as adding complexity but this is precisely the sort of cross-cutting debate that is needed in order to achieve policy objectives at lower cost. The process would force DECC to make more explicit choices about how to ‘spend’ the overall affordability cap against policy objectives such as decarbonising electricity, reducing demand, ensuring security of supply, and alleviating fuel poverty.

2 – Accountability

At present, oversight of the LCF is provided by a board comprised of DECC and Treasury officials. The board provides advice to policy teams and ministers on actions needed to keep costs in line with budgets, but is not accountable to ministers or Parliament. It appears that the board has interpreted its role in a narrow sense, monitoring costs and objectives for individual schemes but not taking a wider view of consumer affordability or balancing policy objectives. A report by the National Audit Office commented that the board ‘has not taken the opportunity to... jointly consider costs and outcomes in aggregate across all levy-funded schemes’.⁸¹

In order to improve accountability and scrutiny, we recommend that there should be consumer representation on the board that manages the LCF (e.g. Ofgem, Citizens Advice). The board should report more regularly both to Parliament and to DECC and Treasury ministers. The remit of LCF management should extend not only to managing the costs of individual schemes, but also to assessing the overall effectiveness of the policies it contains in meeting objectives.

3 – LCF Budget Management

The LCF was designed as a framework to improve budgetary management of energy and climate change policies. However, despite the existence of the framework, budgetary management has been poor.

⁸⁰ See Table 1.1 for definitions of these policies

⁸¹ NAO (2013) The Levy Control Framework

The LCF cap was exceeded in the last three financial years (2012/13 to 2014/15) according to assessments by DECC⁸² and the NAO.⁸³ Notably, the NAO predicted 18 months ago that there would be an overspend in 2014/15, but seemingly this was not averted. The bulk of the overspend relates to the small-scale Feed in Tariff scheme (ssFIT), which has exceeded its original budget in every year since 2011/12. Policy Exchange analysis suggests that the cost of the ssFIT could reach £870 million in the 2014/15 financial year, exceeding its original budget (£446 million) by nearly 100%.⁸⁴

Looking forward, the situation looks even worse. Policy Exchange highlighted in May 2015 that the LCF budget may have already been fully allocated.⁸⁵ But recent analysis by the Office for Budgetary Responsibility (OBR) suggests that the situation is even worse: their projections show that the LCF budget could be exceeded by a wide margin.

DECC produced an assessment of likely spend under the LCF in its Annual Energy Statement in 2014.⁸⁶ At the time, DECC suggested that there would be £1.05 billion of annual spend in 2020/21 left to allocate for future projects (i.e. beyond those already committed). Policy Exchange has identified a number of reasons why DECC may be underestimating the cost of existing subsidy schemes and decisions already taken, as follows:

- **Wholesale Price Projections:** The new ‘Contract for Difference’ (CfD) model of renewables subsidies has introduced a new risk to government in the form of uncertainty in wholesale prices. If wholesale prices decline then the level of subsidy paid under the CfD model increases, and vice versa. Until 2013, DECC had been assuming that wholesale prices would increase substantially through this decade, making fixed price contracts for renewables look attractive. However, there has been a major correction (reduction) in the price forecasts produced by DECC and other forecasters. This is partly due to a reduction in commodity prices (both now and going forward). Introducing additional renewable energy projects (which have low marginal costs) will further depress wholesale prices, as will the introduction of new capacity into the system (as a result of the Capacity Mechanism). Consequently, DECC has revised down its wholesale price projections on several occasions – in the most recent revision the wholesale price forecast for 2020 was revised down by over 20% (£14/MWh).⁸⁷ Since DECC’s latest assessment in 2014, commodity prices have fallen even further, and some independent forecasters are now factoring in little or no growth in wholesale prices going forward. The impact of this change is that the subsidy to already-committed CfD projects will increase. We estimate this increase (based on current forecasts) to be more than £300 million per annum in 2020/21 versus DECC’s forecast.⁸⁸
- **Underestimating Offshore Wind Output:** There is good evidence to suggest that DECC is systematically underestimating the output (and therefore the subsidy payable) for new offshore wind farms. DECC assumes a load factor for new projects of 37.7%.⁸⁹ This assumption is based on the average of all of the projects already operational in the UK. However, newer projects are already achieving much higher load factors (e.g. 43% for Walney and Sheringham Shoal⁹⁰), and this could increase further to 45–50% for projects delivered towards the end of this decade.⁹¹ A higher load factor results in an increase in

82 DECC (2014) Annual Energy Statement

83 NAO (2013) The Levy Control Framework

84 Estimated expenditure in 2014/15 based on DECC data on actual deployment to March 2015, together with load factors and expenditure from previous financial years. We have assumed an average rate of tariff digression for new installations in 2014/15 of 8%, based on actual tariff rates across technologies

85 Howard, R. (2015) “Dear Energy Secretary: I’m afraid to tell you there is no money...”. Available at: www.policyexchange.org.uk

86 DECC (2014) Annual Energy Statement 2014

87 Comparing the October 2014 forecast against the September 2014 forecast

88 For our analysis we use wholesale price forecasts from Aurora Energy Research dated April 2015

89 A ‘load factor’ or ‘capacity factor’ is a measure of the actual output of a power plant divided by its potential output if it produced at total capacity all of the time.

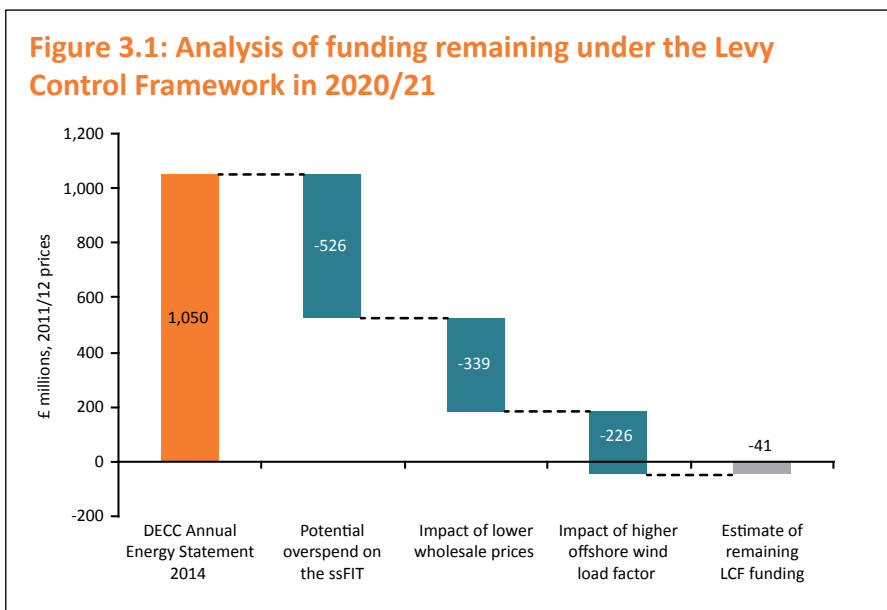
90 Dong Energy (2009) ‘Dong Energy sells minority stake in Walney Offshore Wind farm’ & Renewable UK (2013) State of the Industry report

91 The Crown Estate (2012) Cost Reduction Pathways Project: Modelling Results and Analysis Tool, available at www.thecrownestate.co.uk/energy-and-infrastructure/offshore-wind-energy/working-with-us/strategic-workstreams/cost-reduction-study/

the subsidy paid (as the subsidy is paid on a per MWh basis), but this only becomes apparent once the wind farm is operational. We estimate that higher load factors could lead to an increase in spend for existing CfD projects (i.e. putting projects supported under the Renewables Obligation aside), of more than £200 million per annum in 2020/21, compared to DECC’s forecast.

- **Overspend on the Small-Scale Feed in Tariff (ssFIT):** In its 2014 Annual Energy Statement, DECC assumes that the cost of the ssFIT will increase by around £60m per annum to 2020. However, since the Statement was published, new Ofgem data shows that expenditure in 2013/14 was £70 million higher than DECC was expecting. Furthermore, DECC data shows that the deployment rate under the ssFIT mechanism is increasing – from 650MW in 2012/13, to 750MW in 2014/15. We estimate that the cost of the ssFIT could reach £870 million in the 2014/15 financial year, adding an additional £180 million p.a. against the previous year. Rolling this discrepancy forward, assuming no changes in policy, would lead to difference of more than £500 million per annum in 2020 compared to DECC’s forecast.⁹²

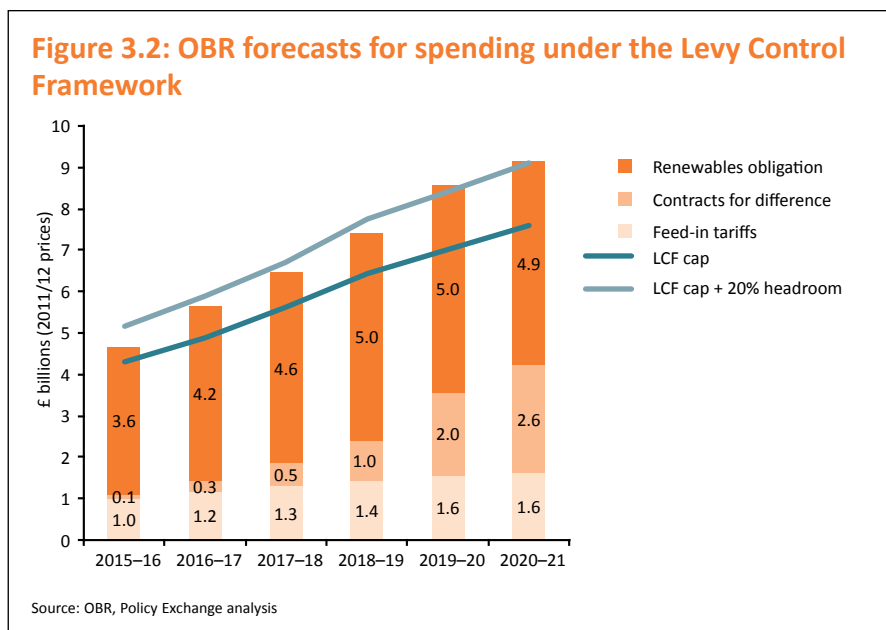
Based on our analysis, the combination of these factors wipes out the entire residual budget identified by DECC for 2020/21 (Figure 3.1), and in every year between now and then.



Yet the budget situation may be even worse still according to recent analysis by the OBR (Figure 3.2).⁹³ They project that spending under the LCF could reach £11.5 billion in 2020/21 (£9.1 billion in 2011/12 prices). This would mean that the LCF budget of £7.6 billion in 2020/21 would be exceeded by 20%. At present there is limited detail on the assumptions behind the OBR’s figures, but it appears that in addition to the factors we have highlighted, the OBR is forecasting a significant increase in spend against the RO mechanism. It should be noted that the OBR’s analysis does not yet reflect the government’s recent decision to close the RO early for onshore wind, hence the overspend may be less than they are suggesting.

92 In 2011/12 prices

93 OBR (2015) July 2015
Economic and Fiscal Outlook:
Fiscal Supplementary Tables



Either way, the implication of this analysis is that DECC may have already committed the entire LCF budget to 2020/21. Of the three risks we identify in our analysis, the only one where DECC has any influence is the ssFIT: the other two risks are locked in for projects that are already operational or committed. DECC has already taken steps to stem the expenditure under the RO, bringing forward the closure for solar PV and onshore wind projects, although expenditure will continue to grow in the meantime.

Overall, our analysis demonstrates that DECC’s management of renewable energy subsidies has been reckless and wasteful. Any commercial organisation with a multi-billion pound budget would pay far more attention to how it is being spent. DECC now needs to take urgent steps to address what looks like an almost inevitable overspend, and to recognise the limitations on the remaining budget. Even more importantly, DECC needs to find ways to meet policy objectives at lower cost, as explored in the following section.

Meeting policy objectives at lower cost

As identified in Chapter 2, a significant and growing component of household energy bills relates to levies used to fund energy and climate change policies. Policy costs currently make up 7% of the average domestic dual fuel bill, and these are set to rise substantially to 2020 based on current plans (particularly in the case of electricity). As explored in the previous section, the bulk of these subsidies are managed under the LCF, and relate to the UK’s objectives around decarbonisation. There are also additional levy-funded policies relating to other objectives (Table 1.1), such as reducing fuel poverty (e.g. the Energy Company Obligation) and ensuring security of supply (the Capacity Mechanism).

Policy Exchange recognises the significance of the risks related to climate change, security of supply, and fuel poverty. Our position remains that the UK must take substantive action to address these risks. However, we have long advocated that the UK should meet such objectives in a cost effective manner, minimising the impact on consumer bills, and therefore increasing financial

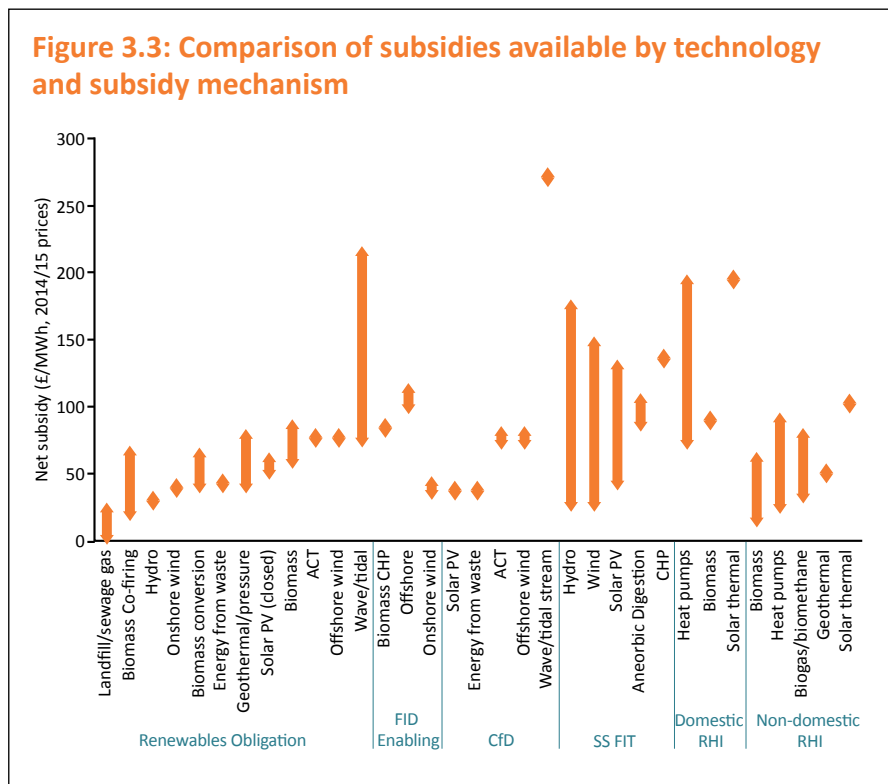
and political sustainability. We call this approach ‘Greener Cheaper’ and have been advocating it for some time in previous reports. This approach is also reflected in the 2015 Conservative manifesto, which commits to ‘meeting climate change commitments... cutting carbon emissions as cheaply as possible’. However, the manifesto is short on detail on how this can be achieved. Given the squeeze on the energy and climate budget identified earlier in this report, implementing such an approach now looks not only desirable, but essential. The next sections present ideas for how to put our ‘Greener Cheaper’ approach into practice.

Cutting carbon at lower cost

The government has set an ambitious decarbonisation target under the Climate Change Act, and has created a litany of subsidy mechanisms to support and promote decarbonisation options (see Table 1.1). But what is the relative performance of these mechanisms in achieving decarbonisation goals? Which of the mechanisms delivers decarbonisation objectives at least cost to the consumer?

Surprisingly, there seems to be a paucity of evidence to answer these basic questions. DECC monitors the delivery of individual schemes, but there is no cross-cutting assessment of their relative performance. In the absence of this, we have undertaken our own high-level assessment. (It is worth saying that we found monitoring processes to be generally poor given the scale of subsidies involved).

We first consider the subsidy currently available for each technology under each scheme (Figure 3.3). The chart shows the ‘net subsidy’ over and above the wholesale price of electricity, which is currently around £45/MWh.⁹⁴ Where there are multiple tariffs available, we have displayed these as a range. The Green Deal and ECO schemes are not included in this analysis, but are covered later in this section.



94 E.g. in the case of the CfD it is the ‘strike price’ minus the wholesale price, and in the ssFIT it is simply the generation tariff rate (in pence per Kwh, converted to £/MWh). Here we assume a wholesale price of £45/MWh, and a ROC value of £42.50/ROC

Adopting a ‘least cost’ approach would suggest that we should focus on the cheapest available technologies required to achieve decarbonisation goals, but as Figure 3.3 shows, the current approach is very far from achieving this. **Government is pursuing technologies at a wide range of price points from cheap to very expensive technologies.** Mature renewables such as medium to large-scale onshore wind, solar photovoltaics (PV), biomass and hydro are being brought forward on the basis of relatively low subsidies, and indeed in many cases subsidy levels have fallen in recent years. However, current policies continue to provide subsidy for some extremely expensive technologies, such as wave and tidal stream (up to £271/MWh⁹⁵), solar thermal (£195/MWh), and heat pumps (up to £191/MWh). There are also wide variations within individual technologies; solar tariffs range from £37/MWh for large-scale projects under the CfD, to £44–129/MWh under the ssFIT.

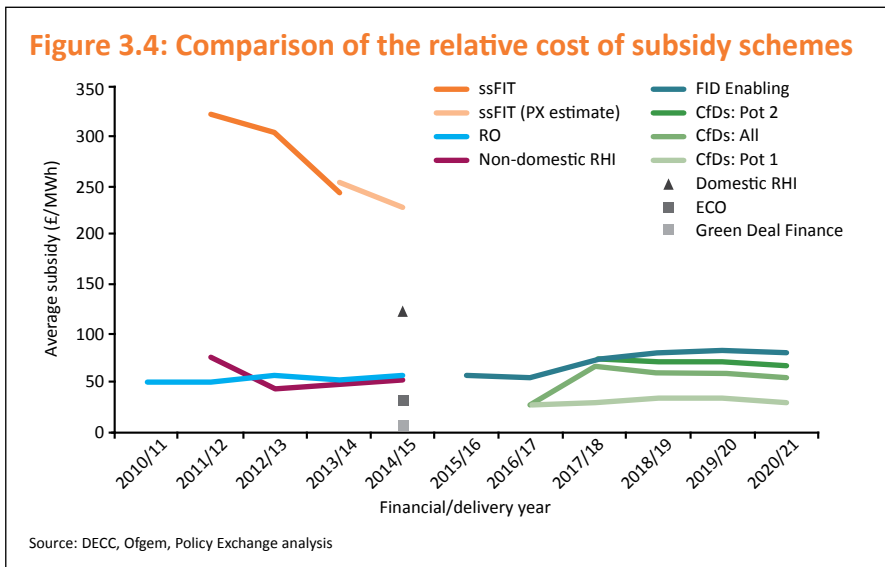
DECC’s approach to date has been to set subsidy levels largely on the basis of the level required to deliver a certain level of return to investors in each technology, rather than to minimise the cost to consumer across the options available. This is illustrated for example in the Impact Assessment for the small-scale Feed in Tariff.⁹⁶ Rather than delivering decarbonisation at least cost to the consumer, the stated objectives of the policy were to ‘contribute to the 2020 Renewable Energy Target’; to ‘achieve a level of public engagement that will engender widespread behavioural change’; and to drive higher uptake of small-scale technologies which are ‘otherwise too costly to implement’.

Nowhere in the assessment is there any discussion of alternative ways of meeting the renewables target (or more importantly carbon targets), nor any actual evidence of whether investing in small-scale technologies would lead to the desired behavioural change or innovation. The lead policy option selected was to offer a 5–8% return to all technology types and scales, almost irrespective of the cost of doing so. **In other words, rather than ‘picking winners’, DECC effectively decided to prop up what would otherwise be ‘losers’.** The Impact Assessment considered an option focused only on mid-scale projects (closer to 5MW), but this was dropped despite being modelled as having the lowest cost of any of the options considered. The consumer cost of the ssFIT scheme was considered in isolation from other energy policy costs or consumer affordability in general, and hence appears relatively insignificant. Most strikingly, it was assumed that the cost of the scheme would increase to £570 million per annum by 2020, when we have shown that the cost has already grown to an estimated £870 million in 2014/15 (and if left unchanged would increase substantially further by 2020). **This example is indicative of DECC’s general approach, which has subordinated ‘cost to the consumer’ below achieving investor returns, rapid deployment, and other seemingly tangential objectives.**

Another way to assess the relative performance of the suite of subsidy mechanisms is at the scheme level. Here, we have considered each scheme in terms of the net subsidy per unit of low carbon energy generated or saved (£/MWh). Figure 3.4 shows the cumulative cost of each of the schemes over time, i.e. the cost of all projects delivered under the scheme up to and including each financial year (NB: data for Green Deal Finance Plans and ECO relates to the period up to and including December 2014).

95 E.g. the £305/MWh strike price, inflated from 2012 to 2014/15 prices at CPI, subtract the current wholesale price

96 DECC (2010) Impact Assessment of Feed-in Tariffs for Small Scale Low Carbon Electricity Generation



Some clear conclusions can be drawn from Figure 3.4 concerning the existing subsidy schemes to date:

Small-Scale Feed in Tariff

The ssFIT provides payments for electricity generated from small-scale installations, predominantly solar photovoltaics and small-scale wind. Introduced in 2008–2010 by the Labour government, the ssFIT has turned out to be an extraordinarily expensive way to deliver decarbonisation objectives. Early installations required a net subsidy (on top of market prices) of approximately £320/MWh on average, or around six times the wholesale price of electricity. Tariff rates of up to £488/MWh (or 48.8p/KWh) were available to small-scale solar projects installing in 2010, whilst small-scale wind and hydro could receive up to £401/MWh and £232/MWh respectively. The costs of small-scale renewable technologies such as solar photovoltaics has come down significantly in the years since, as a result of a sharp fall in the cost of panels. But we estimate that the cumulative cost of the scheme to date remains high at £230/MWh. It is an enormously wasteful scheme, which to date meets the equivalent of just over 1% of national electricity demand.

Renewable Heat Incentive

The domestic RHI provides FIT payments to renewable heat technologies, such as heat pumps and biomass boilers. It was introduced in 2014, and to date has also been relatively expensive at more than £120/MWh. The non-domestic RHI (available to businesses) is relatively low cost at £55/MWh to date.

Renewables Obligation

The RO provides support to large-scale (>5MW) renewable electricity projects in the form of Renewables Obligation Certificates, which have a tradable value. Relative to the other renewables subsidies to date, the RO looks relatively cheap at a net subsidy of £57/MWh; although this means that the net subsidy is still greater than the market price of electricity, on average.

Green Deal and Energy Company Obligation

Both the Green Deal and ECO are about supporting energy efficiency improvements. These schemes are orders of magnitude cheaper than renewables subsidy schemes, at a cost of £8/MWh and £33/MWh respectively (although the figure for the Green Deal is subject to some uncertainty).⁹⁷ These results demonstrate that energy efficiency schemes can be an extremely cost-effective way to decarbonise, not to mention the wider benefits they offer, such as reducing fuel poverty and improving health.⁹⁸

Looking forward, Figure 3.4 also provides an indication of the likely costs of future mechanisms based on projects already committed to 2020:

Contract for Difference

- The CfD, the new model for supporting large-scale low carbon projects, was introduced under the Energy Act 2013. It differs from all other previous schemes in a number of crucial ways. The subsidy level is set through an auction rather than being set by government. Contracts are awarded through discrete ‘allocation rounds’, which means that government has more control of the cost. Project developers receive a contract, which reduces risk and the cost of capital (at least once they have a contract).
- Previous research by Policy Exchange suggested that auctions could play a significant role in driving down the cost of supporting renewables.⁹⁹ This seems to be borne out by the evidence from the results of the first auction round, which concluded in February 2015. Under the CfD there were two separate auctions: ‘Pot 1’ for mature technologies such as onshore wind and solar PV, and ‘Pot 2’ for less mature technologies such as offshore wind. The overall cost of ‘Pot 1’ was substantially below the previous RO scheme at an average of £30/MWh. The cost of ‘Pot 2’ technologies was higher at £68/MWh, but still well below the corresponding figure from the FIDeR scheme (discussed next) where contracts were issued on a non-competitive basis. The CfD auction also cleared well below the ‘administrative strike prices’ (set by government) which are the starting price or cap in the auction. Overall the auction was heralded by policymakers as a success, and vindicates DECC’s judgement to accelerate the move to auctions (it had originally been planning to introduce auctions later). Having said that, the auction could be improved further by reconsidering some of the design features which hold back even greater competition (e.g. dividing technologies into different ‘pots’, and allocating the majority of funding to immature technologies).

Final Investment Decision enabling for Renewables

FIDeR was a transitional mechanism intended to bridge the gap between the RO and the new CfD model. The FIDeR process was challenging and was delayed substantially from its original timetable. In the end, the Coalition government awarded eight contracts under the scheme in April 2014, less than six months before the first CfD auction round took place. Unlike the CfD auction, FIDeR did not involve a competitive auction: the price was set by government in advance. There was no clear rationale given for why such a large amount of capacity (4.6GW, of which 3.2GW was offshore wind) was required.

⁹⁷ It has not been possible to establish the actual cost (to DECC) of the scheme. The Green Deal Impact Assessment (2012) suggests a public sector cost of £23 million over 10 years, and for simplicity we have pro-rated for the two years of the scheme’s existence

⁹⁸ For further details see: Howard, R. (2015) *Warmer Homes*. Policy Exchange

⁹⁹ Moore, S. & Newey, G. (2013) *Going, Going, Gone*. Policy Exchange

The set of contracts awarded by the Coalition government under FIDeR was extremely expensive and demonstrates insufficient regard for the cost placed on consumer bills. Offshore wind projects supported under this mechanism secured a ‘strike price’ of up to £155/MWh, compared to £115–120/MWh for the projects which subsequently came through the first CfD auction just a few months later. In effect, government secured a large amount of capacity through FIDeR at the peak of offshore wind costs, before cost reductions had been achieved, and in the absence of price competition. The CMA estimates that DECC decision to award contracts under FIDeR instead of the CfD auction will increase the cost to consumers by £250–310 million per year. DECC has also been criticised by the Public Accounts Committee in relation to FIDeR for failing to “adequately secure best value for consumers”, and “failing to defend consumers’ interests.”¹⁰⁰

Key findings

Overall, these results present a very mixed picture. **The move to auctions as a method of allocating support has been a success** – not only for mature technologies such as onshore wind and large-scale solar PV, but also less mature technologies, such as offshore wind. However, given the success of the auction, **it is disappointing that so much of the existing budget has been allocated through non-competitive processes** such as the ssFIT, FIDeR, the RO, and the RHI. **To date, only around 1% of the Levy Control Framework budget has been allocated on a purely competitive basis** (the £65 million allocated under the CfD ‘mature technologies’ Pot 1). What makes the current approach particularly perverse is the fact that DECC has severely restricted the budget for the cheapest options, whilst simultaneously procuring expensive projects under other mechanisms.

Clearly some poor decisions have been made, both in terms of policy design and implementation. These mistakes ultimately add unnecessary additional costs to consumer bills. Unfortunately, these additional costs are now ‘locked in’ for the long term, since subsidies are set for the lifetime of the project (e.g. 25 years for FITs, and 15 or 35 years for CfD contracts). The need for change has been exacerbated by the budgetary situation (see our analysis above), which suggests that if no policy changes are made, then DECC risks breaching the agreed limits on levy-funded spending to 2020, adding further cost to consumers. **The new government now needs to make some substantive and rapid changes to its suite of policies if it is to achieve its goal of ‘cutting carbon at least cost’, to remain within the LCF spending cap, and to stem the rise in policy costs.**

That said it would be unwise for the government to renege on existing commitments to projects which are already built, under construction, or those with a contract. Retrospective action would have a significant and damaging impact on investor perception of the UK, both within the energy sector, and perhaps in respect of infrastructure more generally. It may also give rise to legal challenge, as in the case of changes to solar feed in tariffs in 2012.¹⁰¹ This restricts the options available for policy change.

100 www.parliament.uk/business/committees/committees-a-z/commons-select/public-accounts-committee/news/report-early-contracts-for-renewable-electricity/

101 Guardian (2012) ‘UK government loses solar feed-in tariff bid’. Available at: www.theguardian.com/environment/2012/mar/23/uk-government-solar-feed-in-tariff

Recommendations

Here we set out a set of practical recommendations to meet policy objectives more cost effectively. Our approach is based on the following high-level characteristics:

- **Technology neutrality** – where possible the government should avoid making technology choices, or setting technology specific targets. Instead our suggested approach is simply to allow the cheapest options to succeed, and more expensive options to fail. Our report “Going, Going, Gone” (2013) put it well when it stated that government ‘needs to overcome [its] squeamishness about ending support to technologies that cannot bring their costs down.’ If government wishes to support emerging technologies to reach maturity, then the basis and rationale for this should be identified far more clearly than it has been to date.
- **Market based** – we strongly advocate the use of markets and competitive processes to identify the least cost solutions to policy objectives. Previous research by Policy Exchange looked at the role of auctions in driving down the cost of support to low carbon generators, and this is evidenced by the recent CfD auction results.¹⁰² We argue that the UK should accelerate the transition to technology neutral auctions, removing the policy barriers holding back competition.
- **Demand-centric** – demand-side solutions, such as energy efficiency, can be extremely cost effective at delivering multiple energy objectives, including decarbonisation, improving security of supply, reducing consumer bills, and reducing fuel poverty. However, the UK has failed to take full advantage of the opportunities on offer – as documented in our previous reports “Warmer Homes” (2015), “Smarter Greener Cheaper” (2013), and “Boosting Energy IQ” (2011). Government should rebalance the focus of policy, putting far greater emphasis on the demand side (this is explored in the following section).

Our specific recommendations are as follows:

1 – *Avoid distorting technology or sector specific targets, but maintain the system of carbon budgets.*

The UK has set a legally binding decarbonisation objective for 2050 under the Climate Change Act, plus a set of binding five-yearly carbon budgets which already extend out to 2027. With these in place, it is unclear why additional technology or sector specific targets are required. Policy Exchange previously recommended that government should scrap the 2020 Renewable Energy Target, on the basis that it has pushed government to pursue more expensive options than were necessary to meet decarbonisation goals.¹⁰³ We remain of the opinion that the target should be scrapped (or ignored).

Furthermore, we agree with the Conservative manifesto position to resist setting a 2030 power sector decarbonisation target (as has been suggested by the Committee on Climate Change,¹⁰⁴ amongst others). Setting a legally binding target for one sector creates an artificial constraint on the options that are subsequently pursued. Moreover, the suggested form of the target (e.g. X g CO₂/KWh) appears to favour low carbon generation over energy efficiency (e.g. efficiency reduces kWhs of demand, not CO₂/kWh). Government should articulate a plan for how carbon budgets are to be delivered across all sectors (power, heat, transport), but this should be flexible rather than cast in stone in the form of a legally binding target.

102 Moore, S. & Newey, G. (2013) *Going, Going, Gone*. Policy Exchange

103 Moore, S. & Less, S. (2011) 2020 Hindsight: Does the renewable energy target help the UK decarbonise?

104 Committee on Climate Change (2013) Next Steps on Electricity Market Reform – securing the benefits on low- carbon investment. Available from: www.theccc.org.uk/wp-content/uploads/2013/05/1720_EM_R_report_web.pdf

2 – Focus decarbonisation efforts on mature, low cost generation technologies.

There is already a group of mature, scalable, low cost generation technologies which are deliverable for a net subsidy of less than £50/MWh (or 5p/KWh). This includes nuclear, commercial-scale onshore wind, solar PV, hydro, and certain biomass technologies. **Going forward, the new government should focus its efforts, plus any remaining budget, on mature low carbon technologies** (assuming that projects are appropriately located and meet other environmental considerations).

Solar PV and onshore wind have achieved cost reductions in recent years, particularly under the CfD model, and are projected to achieve further cost reductions in the future. Studies point to both technologies reaching cost parity with fossil fuel generation by around 2020.¹⁰⁵ The argument that subsidies for these technologies should be removed now is false: they still require support to proceed, although the amount of support is diminishing. It is cheaper to meet decarbonisation goals using mature technologies than immature technologies: reprioritising the CfD budget towards mature technologies could save up to £600 million per annum by 2020.¹⁰⁶

At the same time DECC should clearly indicate to these industries that they need to further reduce their costs or support will be withdrawn. DECC should immediately revise down the ‘administrative strike prices’ in the CfD auction to reflect the latest information on costs, and set a price trajectory to drive these technologies towards a zero subsidy position within a defined time period (e.g. by 2020).

DECC should continue to provide support to low cost technologies under the ssFIT and RHI (e.g. those already under say 5p/KWh). But the system of ‘automatic tariff digression’ should be replaced as it creates a significant instability in the industry – a ‘boom and bust’ pattern of deployment. Government should instead provide longer term visibility of tariff rates (e.g. rolling 12 months), on a downward trajectory to achieving zero subsidy within a defined time period.

New nuclear potentially has a significant role to play in the UK in order to meet decarbonisation and security of supply objectives cost effectively. The government has given agreement in principle to develop a new nuclear power station at Hinkley Point C in Somerset, and has set an aspiration to deliver a total of up to 16GW of new nuclear capacity. In pursuing this, the government must ensure that it is getting the best possible deal for consumers. Our analysis (earlier in this report and in our previous report “Going, Going, Gone”) suggests that using auctions and competition can be an effective way to drive down the cost of decarbonisation. For large unique projects it may not always be possible to run a conventional auction due to a shortage of bidders, but other forms of competition may be possible (for example the model adopted in the CCS Commercialisation project).

We recommend that going forward, new nuclear power stations are procured on the basis of competition between the various suppliers and technologies available, rather than on the basis of a bilateral negotiation with one supplier. Government should signal its intention to run a competitive process for nuclear projects. This may take some time, since the nuclear developers (EDF, Horizon Nuclear Power and NuGen) are still working up plans for their respective projects. Horizon and NuGen still need to obtain regulatory approval for the reactors they wish to use (provided by Hitachi-GE and Westinghouse respectively) which could take until the end of 2017.¹⁰⁷

105 E.g. Poyry (2014) Is the end in sight for renewable subsidies? & DECC (2013) UK Solar PV Strategy Part 1: Roadmap to a Brighter Future & STA (2015) The Solar Independence Plan for Britain

106 Report by consultants Baringa (2015). Available at: <http://renewables.green-hedge.com/news/industry-news>

107 <http://news.onr.org.uk/2014/08/hitachi-ge-design-for-new-nuclear-power-station-clears-first-regulatory-assessment-hurdle/>

3 – Curtail the most expensive subsidies.

It is difficult to see how supporting very expensive technologies with high tariffs is consistent with the notion of ‘cutting carbon at lowest cost’. Government needs to overcome its squeamishness about allowing expensive technologies to fail, and substantially narrow the range of subsidies available. We recommend that DECC sets an absolute cap on subsidy support under any mechanism. This could be benchmarked initially to the result of the CfD ‘immature technologies’ auction (e.g. net subsidy of c. £70/MWh or 7p/KWh), and then ratchet downwards over time. No technologies would be excluded from receiving support *per se*, but the implication of setting the cap would be that return levels would drop and/or some technologies would no longer be viable. The main technologies affected would be micro-scale technologies currently supported under the ssFIT and RHI (e.g. heat pumps, hydro, wind, rooftop solar), plus wave and tidal. Rooftop solar PV should be able to withstand a substantial reduction in tariff in any case (see Box 1).

This proposal would stem the increase in the cost of the ssFIT scheme, which as shown earlier would otherwise use up a large portion of the remaining LCF budget. In doing so, this would allow DECC to divert funding to more cost effective technologies. A review of the ssFIT is currently being undertaken, and in our view should consider options for substantial change.

Box 1: Case Study: What would the impact of a tariff cap be on rooftop solar PV?

The solar industry would most likely balk at the suggestion of a tariff cap or a substantial cut in tariffs. However, our modelling suggests that the current tariffs for rooftop solar are unnecessarily generous, and should be cut substantially anyway.

We have modelled the economics of a 4kW installation based on DECC assumptions on cost (installed cost of £1,522 per kW), and load factor (10%). The current Feed in Tariff level, including the export tariff on deemed exports plus electricity bill savings, provides an extremely generous return of over 12% per annum. Note that that DECC was originally targeting the ssFIT scheme to deliver a return of 5–8%, suggesting that tariff reductions have not kept pace with cost reductions.

A tariff of 7p/kWh delivers a return of 8% to the householder, but if combined with a Green Deal loan (at a reduced loan rate, following the reforms we suggest below), would achieve a 12% return on the equity invested by the household. If the tariff was cut further to 5p/KWh, this would still deliver a return of 7% (unleveraged), or more than 8% with Green Deal finance.

This analysis suggests that the current feed in tariffs are far too generous, and could withstand a substantial cut without halting deployment of solar PV.

4 – Create a clear commercialisation strategy for essential emerging technologies.

There are some technologies which are not yet fully mature, but have the potential to play a significant role in cutting carbon in the medium term (e.g. in the 2020s), such as CCS and offshore wind. The level of support which should go to these technologies depends on whether a ‘least cost’ approach is optimised over a short term horizon or a longer term horizon. Previous governments have lacked any real clarity or strategy on the approach to commercialisation of emerging energy technologies. This has led to some expensive and questionable decisions, such as

the procurement of 3.2GW of offshore wind capacity through the FIDeR process at the peak of offshore wind costs. In the case of CCS, government has embarked on a Commercialisation Programme, but the CCS industry has criticised the lack of clarity beyond 2020 and the first one or two projects.¹⁰⁸

Previous Policy Exchange research made the case for focusing commercialisation support on emerging technologies that offer significant deployment and cost reduction potential at a global scale, thereby maximising the impact of the UK's investment on global emissions.¹⁰⁹ There is a clear case for supporting CCS: the Intergovernmental Panel on Climate Change suggests that without CCS the cost of decarbonisation would increase by 138%.¹¹⁰ Analysis has highlighted the critical role that CCS will play in emissions reduction as early as 2030.¹¹¹ The UK has already made strong progress on CCS, and the Committee on Climate Change stresses the importance of CCS for decarbonising both the power and industrial sectors.¹¹² Offshore Wind has considerably less global potential than CCS, with the market focused mainly in North West Europe, but nonetheless it may be required in order for the UK to achieve its carbon targets in the 2020s, and there is potential for further cost reduction.¹¹³

The new government has the opportunity to create a far clearer commercialisation strategy for selected technologies which are essential to future carbon reduction. The Committee on Climate Change has been calling for the creation of a commercialisation strategy for offshore wind and CCS,¹¹⁴ and recently produced evidence on how to achieve cost reductions in these sectors.¹¹⁵ In our view, a commercialisation approach should contain a clear justification for why enhanced support is required, the nature and scale of the support required to achieve its objectives, and the timetable over which support will be phased out. There should be a greater focus on R&D alongside deployment in order to maximise value for money (although an approach based on R&D alone is unlikely to be successful). Crucially, if technologies fail to make progress then support should be cut accordingly.

DECC needs to make decisions shortly on the budget for the next CfD auction round. Given everything we have said earlier about the limited budget remaining, it seems obvious that funding to 2020 should be focused primarily on mature low cost technologies rather than immature technologies. In any case there is already a significant pipeline of committed offshore wind projects to 2020: circa 5 GWs of operational capacity plus more than 5GWs of committed capacity. However, there remains a need for government to develop its commercialisation approach for technologies such as CCS and offshore wind, and to articulate the nature and level of support beyond 2020.

Increasing the role of energy efficiency

There is potential for energy efficiency to play a significant role in UK energy policy, meeting multiple energy policy objectives in a cost effective manner. Yet the government has repeatedly failed to make the most of the potential benefits that it offers, often being overlooked in favour of large-scale, supply-side (generation) solutions to energy policy challenges.

There is a clear case for government promoting energy efficiency. As we demonstrated in Chapter 1, energy efficiency policies are the only government interventions in energy that reduce household bills (low carbon subsidies increase

108 DECC (2015) Next Steps in CCS: Policy Scoping Document – Summary of Responses

109 Moselle, B (2015) "Climate Change Policy – Time for Plan B", Policy Exchange

110 IPCC (2014) Climate Change 2014: Synthesis Report

111 Zero Emissions Platform (2014) CCS and the Electricity Market

112 CCC (2013) Fourth Carbon Budget Review – part 2

113 Ibid

114 CCC (2013) Fourth Carbon Budget Review – technical report

115 Gross, R. (2015) Approaches to cost reduction in carbon capture and storage and offshore wind. A report to the Committee on Climate Change

bills). **Analysis suggests that a more ambitious approach to household energy efficiency could lead to a saving of £9 billion per annum on household energy bills** as well as a range of other benefits, such as reducing fuel poverty, reducing fuel import dependency, and increasing economic output.¹¹⁶ Our analysis above suggests that the most cost effective decarbonisation policies to date have been energy efficiency policies – the Green Deal and ECO deliver carbon savings at a far lower cost than renewable energy subsidy schemes. Similarly, analysis by DECC shows that many energy efficiency options deliver a net saving to society (a negative cost per tonne of CO₂ saved).¹¹⁷

Government has recognised the potential for greater energy efficiency, producing an energy efficiency strategy in 2012, and creating an Energy Efficiency Deployment Office (EEDO).¹¹⁸ DECC estimated that ‘socially cost-effective investments in energy efficiency’ could save 196TWh of energy in 2020 – equivalent to removing the need for 22 power stations.

Yet the level of ambition to improve energy efficiency remains weak. For example, the number of energy efficiency improvements delivered to households fell by approximately 80% over the course of the last parliament.¹¹⁹ A previous Policy Exchange report (“Warmer Homes”) identified a shortfall of £700 million per annum in the budget to deliver energy efficiency improvements to fuel poor households.¹²⁰ **The UK’s housing stock remains amongst the least energy efficient in Europe.**¹²¹ The government’s decarbonisation plans still prioritise low carbon generation above energy efficiency (only a third of emissions savings are expected to come from improving energy efficiency, two-thirds from low carbon generation), and analysis by the Committee on Climate Change suggests that ‘stronger policies are required’ in order to incentivise energy efficiency.¹²² Following a restructuring of DECC earlier this year the Energy Efficiency Deployment Office no longer exists.¹²³

Implementation has also been well below expectations. The Green Deal scheme, launched in 2013, was supposed to be the government’s flagship energy efficiency programme providing energy efficiency assessments, loans and grants to a large number of households. Demand for the assessment reports and grants has been high: nearly 550,000 assessment reports have been completed, and the grant funding available under the Green Deal Home Improvement Fund (GDHIF) was taken up within a matter of days.¹²⁴ But the take-up of Green Deal loans has been well below expectations: government originally planned for the scheme to deliver around 100,000 energy efficiency loans per annum, but to date it has delivered just 14,000 loans in two years (worth a total of £50 million).¹²⁵ The conversion rate from assessments to loans has been very low – at less than 3%. By contrast, the equivalent scheme in France (Domofinance) has provided over 400,000 loans to date.¹²⁶

The poor take-up of Green Deal may be due to the loan rate, which at a typical 8% APR is seen as an unattractive source of finance by some households. Analysis by Frontier Economics suggests that homeowners and those with high credit scores are able to obtain far cheaper finance elsewhere, either in the form of a top-up mortgage or unsecured loan (Figure 3.5).¹²⁷ That said, Green Deal loans are available to households for whom unsecured finance is otherwise unavailable or very expensive. Applicants for Green Deal loans are typically from lower income households – with a median reported household income of £21,430.¹²⁸

116 Verco / Cambridge Econometrics (2014) Building the Future: Economic and fiscal impacts of making homes energy efficient

117 E.g. in HM Government (2011) The Carbon Plan: Delivering Our Low Carbon Future, Annex B; DECC (2012) The Energy Efficiency Strategy

118 DECC (2012) The Energy Efficiency Strategy

119 EBR / ACE (2015) Left out in the cold

120 Howard, R (2015) *Warmer Homes: Improving fuel poverty and energy efficiency policy in the UK*. Policy Exchange

121 EBR / ACE (2013) Fact file: The Cold Man of Europe

122 Committee on Climate Change (2014). Energy Prices and Bills – Impact of Meeting Carbon Budget 2014. Accessible: www.theccc.org.uk/publication/energy-prices-and-bills-impacts-of-meeting-carbon-budgets-2014/

123 GOV.CO.UK (2015) Organisational Structure. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/428779/decc-organogram-external.pdf

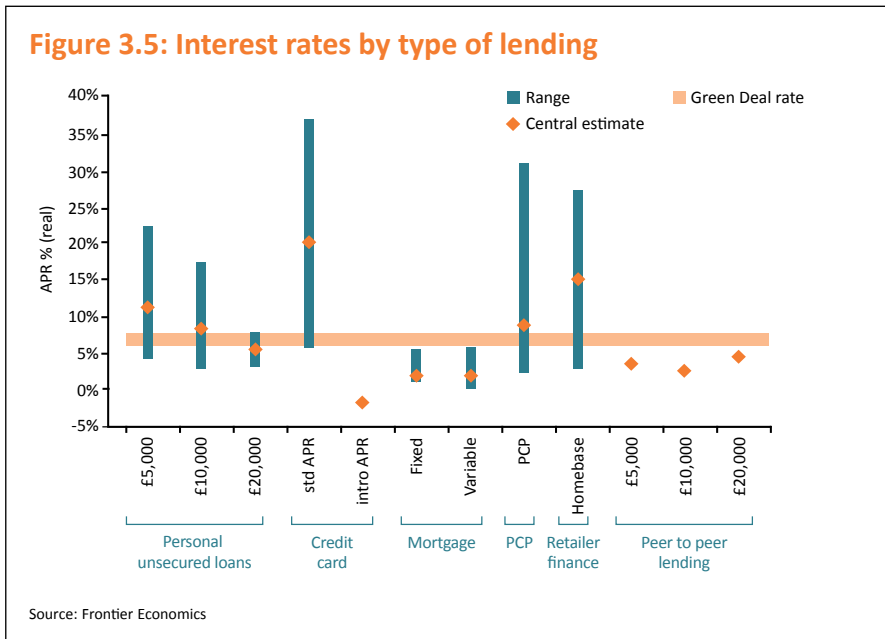
124 DECC (2015) Green Deal and ECO Statistics; Cumulative total to the end of April 2015

125 The Green Deal Finance Company (2015) ‘Green deal finance company breaks through £50 million in plans and applications.’ Available at: www.tgdfc.org/media/green-deal-finance-company-breaks-through-50-million-in-plans-and-applications/

126 www.domofinance.com/

127 Frontier Economics (2014) Reducing the cost of capital for household low-carbon investment decisions

128 Source: GDFC, unpublished data



Potential applicants may also be put off by the complexity and restrictive nature of the scheme. The size of a Green Deal loan is capped by the so-called ‘Golden Rule’, which dictates that finance is only available up to the point that estimated energy savings outweigh the loan repayments. Whilst there is a need for consumer protection under the scheme, the current model restricts the amount that a household can borrow, and also pushes households towards longer term loans. Adding to the complexity, finance plans are currently marketed through a network of energy efficiency installers rather than directly by the Green Deal Finance Company (GDFC) due to GDFC’s classification by the FSA as a ‘debt administrator’. This is an inefficient and complex delivery model that not only limits the ability to market Green Deal loans nationally, but forces energy efficiency installers to effectively become ‘salespeople’ for financial products.

Some view the Green Deal as having been a failure. It has certainly been oversold ever since its inception: Greg Barker, the scheme’s architect, once described it as ‘the biggest home-improvement programme since the Second World War’.¹²⁹ **But turning this on its head, the Green Deal could be viewed as start-up that offers the potential for substantial growth, if the offer could be made more compelling to households.** The hard work has been done to create the institutions and systems to provide energy efficiency loans; now government and the GDFC need to create more attractive products for households to invest in energy efficiency. The last thing that the government should do is scrap the scheme, as has been suggested in recent press reports.¹³⁰

Our plan to ‘revamp’ the Green Deal is as follows:

- **Government should guarantee the debt provided to the GDFC by commercial banks**, in the same way as it does for infrastructure through the ‘UK Guarantees Scheme for Infrastructure’. This would reduce GDFC’s overall cost of borrowing, and therefore allow it to offer loans to households at a more attractive rate (anecdotal evidence suggests that the reduction in the loan rate would be in the order of 1.5–2%). There would be no direct cost

129 Gov.uk (2011) Green Deal to be the best for consumers. Available at: <https://www.gov.uk/government/news/green-deal-to-be-the-best-for-consumers>

130 The Independent (2015) Green Deal: Energy efficiency programme may be axed amid austerity drive

associated with this, but it would create a contingent liability on government accounts, which UKGBC estimates to be in the order of £300 million for every £1 billion of loans guaranteed.¹³¹

- **GDFC should provide a wider range of products, including shorter term variable rate products.** Green Deal loans are typically 10–20 years in duration, with the loan rate fixed over the term. Anecdotal evidence suggests that some households would prefer shorter term products. The borrowing costs for short term, variable rate products could be as much as 3% below rates for long term products according to analysis by Frontier Economics.¹³² We suggest that GDFC supplements its existing offering with shorter term (e.g. 3–5 year), variable rate products.
- **Allow GDFC to market products directly to end-consumers.** As discussed above, the current ‘route to market’ for Green Deal loans is inefficient and highly complex. We recommend that GDFC becomes a direct lender to consumers. GDFC would need to apply to the FSA as well as upgrading its systems, which will require DECC’s permission (since DECC controls GDFC’s operational cost budget).
- **Involve commercial banks in the Green Deal model.** At present, Green Deal loans are only available from the GDFC via accredited installers. In the equivalent schemes in Germany and France energy efficiency loans are offered through retail banks. UK banks have previously collaborated on government schemes such as the ‘Help to Buy’. We suggest that a similar model could be applied here, with retail banks acting as a gateway for customers to access a Green Deal loan in exchange for a small commission.
- **Relax the ‘Golden Rule’** to create more flexibility and allow households to borrow a larger amount for their energy efficiency project. The Golden Rule could be made an ‘opt out’ rule – whereby the provider shares information on the relative energy savings and loan repayments, and the customer can choose whether to proceed with a loan above or below the cap implied by the Golden Rule.

All of these proposals would increase the attractiveness of the Green Deal scheme, and hence the level of take-up and the savings to households. Taken together, they could lead to a substantial increase in the amount of energy efficiency activity. These proposals would involve negligible cost to government above and beyond current spending plans (except the debt guarantee, which may create a contingent liability) and therefore represent an extremely cost effective way of achieving energy and climate policy goals, whilst also reducing household energy bills.

The Green Deal is by no means the only way to stimulate improvements in energy efficiency. Other options which have been mooted and could be developed further include:

- Amending the Stamp Duty or Council Tax regimes to reflect a property’s energy efficiency performance, providing an incentive or ‘nudge’ for households to improve their property;¹³³
- Introducing a salary sacrifice scheme for investment in energy efficiency;¹³⁴

131 UKGBC (2014) Green Deal Finance. Available at: www.saint-gobain.co.uk/media/17748/green_deal_finance_report.pdf

132 Frontier Economics (2014) Reducing the cost of capital for household low-carbon investment decisions

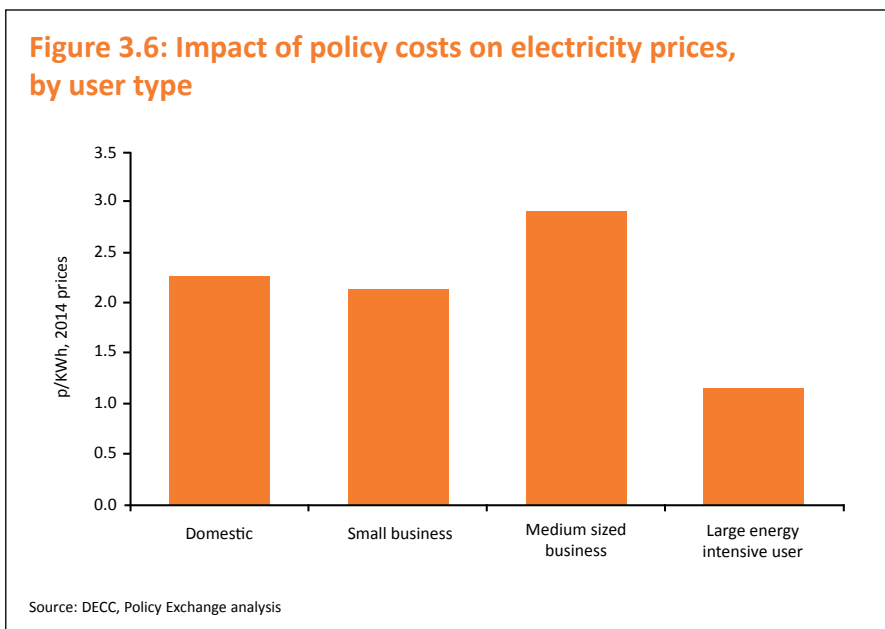
133 UKGBC (2013) Retrofit incentives: Boosting take-up of energy efficiency measures in domestic properties

134 Ibid

- Strengthening minimum performance standards for energy efficiency, particularly in the private rented sector;¹³⁵
- Introducing an energy efficiency Feed in Tariff to offer a financial incentive for demand reduction (which could compete for subsidy against renewable energy feed in tariffs); and¹³⁶
- Allowing behavioural programmes to compete for energy efficiency subsidy if they can demonstrate savings.¹³⁷

Allocation of policy costs

Throughout this report we have demonstrated the significant impact that policy costs have on bills. However, the impact does not fall equally across all consumer types, as shown in Figure 3.6. **In fact, policy costs are disproportionately focused on households and small and medium sized businesses, as opposed to Energy Intensive Industries (EIIs).**



Part of this is due to differences in the coverage of specific policies – for example the Energy Company Obligation is levied only on domestic consumers; the Carbon Reduction Commitment is only applicable to medium sized businesses; and the Climate Change Levy only applies to businesses but not domestic consumers. However, a more significant difference stems from the fact that government has taken steps to exempt or compensate EIIs from most policy costs, due to concerns over competitiveness and so-called ‘carbon leakage’. EIIs are compensated for the indirect costs associated with the European Emissions Trading Scheme (EU ETS), the Carbon Price Floor (CPF), the Renewables Obligation (RO), and the small-scale Feed in Tariff (ssFIT), and will be exempted from the costs of the new Contract for Difference mechanism (CfD). Energy Intensive Industries that sign up to a Climate Change Agreement are also eligible for a reduction in the Climate Change Levy (CCL), which is otherwise levied on businesses. They will also be exempted from the costs of the new CfD mechanism.

135 Friends of the Earth (2011) Minimum energy efficiency standard for private rented homes

136 Newey, G (2013) Smarter, Greener, Cheaper: Joining up domestic energy efficiency policy. Policy Exchange

137 Ibid

Data obtained by Policy Exchange through a number of Freedom of Information (FOI) requests shows that **the projected value of these compensation and exemption schemes could reach nearly £900 million in 2019/20, and amount to a total of £4 billion over the period to 2020** (Table 3.1). It is remarkable how little transparency there is on the scale of compensation to Energy Intensive Industries: these figures were unpublished prior to our FOI request.

Table 3.1: Summary of exemption and compensation schemes for Energy Intensive Industries

| | £ millions, by financial year | | | | | | |
|--------------------------------------------|-------------------------------|-------------------|------------|------------|------------|------------|--------------|
| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | Total (£ms) |
| EU ETS | 20 | 20 | 30 | 30 | 30 | 30 | 160 |
| CPF | 40 | 80 | 70 | 70 | 70 | 70 | 400 |
| RO | – | – | 230 | 240 | 260 | 260 | 990 |
| ssFiT | – | 25 ¹³⁸ | 60 | 60 | 70 | 70 | 260 |
| Subtotal (compensation) | 60 | 125 | 390 | 400 | 430 | 430 | 1,810 |
| Reduction in CCL | 300 | 300 | 300 | 300 | 300 | 300 | 1,800 |
| Exemption from CfD costs | <i>0</i> | <i>20</i> | <i>20</i> | <i>80</i> | <i>110</i> | <i>150</i> | <i>380</i> |
| Total (compensation and exemptions) | 360 | 420 | 710 | 780 | 840 | 880 | 3,990 |

NB: Figures in italics are based on Policy Exchange modelling, other figures are provided by the Department for Business, Innovation and Skills.

The compensation schemes are funded out of general taxation, whilst the CCL exemption results in a loss of taxation receipts. By contrast, the cost of the CfD exemption is spread across other consumers (i.e. domestic and small or medium-sized businesses). As shown in Chapter 1, this is a highly regressive way to fund policies, given that energy bills make a much higher proportion of total expenditure for low and middle income households than higher earners.

It is beyond the scope of this report to consider the merits of exemption and compensation schemes in detail. **However, we recommend that if government wishes to exempt large energy users from policy costs then it should do so more transparently that has been the case to date. Compensation should be funded from general taxation, rather than placing additional costs on to other consumers.**

Maintaining pressure on network costs

Network costs are a significant component of consumer energy bills, currently making up around 22% of the average bill. The bulk of this (18%) relates to the cost of the local electricity and gas distribution network, with 3% relating to transmission networks, and a further 1% to system balancing costs.

Our analysis in Chapter 1 demonstrated that network costs have increased in recent years, pushing up the average bill by around £57 over the period 2009–2014. However, looking at the longer term trend in network costs paints a much more positive picture: Ofgem data suggests that network costs fell by 44% (in real terms) over the period from privatisation in 1990 to 2006, whilst over

138 In the March 2015 Budget it was announced that the compensation for the ssFiT would be brought forward to 2015/16, saving EIs a further £25m

the same period there was an 11% reduction in the number of power cuts.¹³⁹ The former CEO of Ofgem, Alistair Buchanan, described the strong regulatory approach of the time as “squeezing the fat lemon”.¹⁴⁰

Network costs bounced back over the period 2006 to 2015 as a result of a significant increase in network investment, which was required to accommodate new generation and replace ageing assets. DECC estimates that investment in electricity networks in the period 2010–14 was 20% higher than in the preceding four years. Despite this increase in investment, **network charges are still 20% lower now (in real terms) than at the time of privatisation in 1990, equivalent to a saving per household of around £80 per annum.**¹⁴¹ UK network costs are also low compared to other European countries (Figure 1.4). Looking forward, DECC and the Energy Networks Association suggest network costs will remain flat to 2020 (in real terms), despite the fact that the level of investment in networks is required to increase further to over £8 billion per annum.¹⁴²

Whilst network costs appear to have stabilised, the increased attention on energy bills in recent years has led to more intense scrutiny of network costs, particularly given the significant contribution they make to the average bill. Concerns have been raised in two principal areas: the regulation of network companies, and network charging. For example:

- the Energy and Climate Change (ECC) Select Committee inquiry into network costs in 2014/15, which considered the regulation of network companies, network pricing, and network losses.¹⁴³
- the CMA is considering network charging in terms of the impact on competition and markets in its investigation into the energy market.¹⁴⁴
- the CMA is also currently reviewing two separate appeals concerning the price control review for 10 District Network Operators (DNOs).¹⁴⁵ The first case concerns Northern Powergrid (a DNO) which claims that the price control was overly punitive and that Ofgem made errors in calculating cost allowances amounting to more than £130 million. The second case relates to the price control settlements for 10 DNOs, which in an unprecedented step were referred to the CMA by British Gas Trading limited (a ‘party materially affected by the decision’). British Gas claims that the price settlement for the DNOs in question allows them to charge substantially more than is justified.

Here we focus on network regulation, since this has a direct and significant bearing on costs to consumers.

Network regulation

Network companies are regulated monopolies. Since privatisation in 1990, there have been significant developments in the regulatory regime for energy network companies. Until 2013, Ofgem conducted five-year price control reviews for network companies under the “RPI-X” framework, where revenues were indexed to inflation (RPI) minus an efficiency improvement (denoted as ‘X’). From 2013 onwards this evolved into the RIIO framework (Revenue = Incentives + Innovation + Outputs), the key components of which are summarised in Table 3.2.

139 Buchanan, A (2008) ‘RPI at 20’ Project. Accessible at <https://www.ofgem.gov.uk/ofgem-publications/64130/sbj-6-march.pdf>

140 Ibid

141 Unpublished data, provided by Ofgem

142 Sources: DECC (2014) Prices and Bills report & Energy Networks Association written submission to the ECC enquiry. Available at: <http://data.parliament.uk/WrittenEvidence/CommitteeEvidence.svc/EvidenceDocument/Energy%20and%20Climate%20Change/Network%20costs/written/8322.html>

143 ECC (2015) Energy network costs: transparent and fair?

144 CMA (2015) Energy Market Investigation: Locational pricing in the electricity market in Great Britain. Available at: https://assets.digital.cabinet-office.gov.uk/media/54eb5da5ed915d0cf7000010/Locational_pricing.pdf

145 Gov.uk (2015) Energy price control appeal: British Gas Trading. <https://www.gov.uk/cma-cases/energy-price-control-appeal-british-gas-trading>

Table 3.2: Summary of RIIO framework for regulation of network companies

| Network Type | Current Price Control Period | Network Companies | Impact on Average Household Energy Bill in £ (and as % of Average Dual Fuel Bill) ¹⁴⁶ |
|--------------------------|------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Gas Distribution | 2013–21 | 8 networks (4 of which owned by National Grid, the remainder by infrastructure and pension funds) | £130 (9%) |
| Gas Transmission | 2013–21 | National network owned by National Grid | £13 (1%) |
| Electricity Distribution | 2015–23 | 14 networks in 6 ownerships groups (a mix of banks, infrastructure funds, and energy companies) | £116 (9%) |
| Electricity Transmission | 2013–21 | England & Wales: National Grid South Scotland: Scottish Power North Scotland: SSE | £32 (2%) |

In theory, RIIO should deliver value for money for consumers. It creates a much clearer link between a company’s performance and the revenue it receives. It is designed to incentivise successful companies to innovate and realise efficiency savings, thereby reducing costs to the consumer; whilst also penalising poor performers. The RIIO model includes an element of ‘gain share’ – since a proportion of any saving in expenditure is passed back to consumers (50% of any upside in transmission is passed to the consumer and 37% in gas distribution).¹⁴⁷ The RIIO process is also designed to ensure far greater stakeholder engagement by network companies in developing their business plans.

The RIIO framework is highly complex, and it is beyond the scope of this report to review the RIIO framework in significant detail, but a number of concerns as to its effectiveness have already been raised through the ECC Select Committee inquiry and CMA cases:

- **Output targets set too low?**

The ECC Select Committee inquiry report suggests that network company output targets were set too low. Whilst RIIO was supposed to set stretching targets, it appears that the majority of targets have been met, allowing most companies, rather than just the best performing companies, to make higher than expected returns. The ECC Select Committee report quotes British Gas figures stating that ‘38 out of 40 targets [were] reached by network companies in the first year’.¹⁴⁸ The source reference for this data is unclear, but Ofgem’s report on the first year of the gas distribution price control shows that 3 of the 8 companies met all of their output targets, and that the 8 companies collectively met 85 out of 96 targets in total.¹⁴⁹ In terms of expenditure, Ofgem data shows that actual spending by network companies in 2013–14 was well below the ‘allowable spend’: gas distribution companies outperformed the allowable spend by 16%, and transmission companies by 26%. One explanation for this underspend is that network companies may have been planning for a more rapid rollout of low carbon technologies than has taken place. But it

¹⁴⁶ Ofgem (2015) Consolidated Segmental Statements

¹⁴⁷ National Grid written evidence to the ECCC inquiry. Available at: <http://data.parliament.uk/WrittenEvidence/CommitteeEvidence.svc/EvidenceDocument/Energy%20and%20Climate%20Change/Network%20costs/written/8311.html>

¹⁴⁸ ECCC (2015) Energy network costs: transparent and fair?

¹⁴⁹ Ofgem (2014) RIIO-GD1 Annual Report 2013–14. Available at: <https://www.ofgem.gov.uk/ofgem-publications/93973/riio-gd1annualreport2013-14-final-pdf>

also suggests that the RIIO settlements were unduly generous in the first place.

● **Cost of capital too generous?**

Network companies are highly capital-intensive; hence the cost of capital has a significant bearing on their overall costs. British Gas made the case that Ofgem has been too generous in allowing a cost of capital for energy networks in Great Britain of between 4.2% and 4.6%.¹⁵⁰ This can be benchmarked against other locations and other forms of infrastructure: for example a figure of 3.5% to 4.2% for power networks in Northern Ireland,¹⁵¹ and 3.85% in the water sector in England and Wales.¹⁵² Citizens Advice consider the cost of capital definition in detail, concluding that ‘regulators have constantly erred on the side of caution in order to avoid putting at risk the ability of the regulated companies to finance themselves... such that the benefits of a historically low cost of debt have not been shared with customers.’¹⁵³ Again it appears that the framework has been overly generous. Both Citizens Advice¹⁵⁴ and Prof. Dieter Helm¹⁵⁵ suggest that a solution could be to index the cost of debt to market rates in order to remove some uncertainty from the calculation of cost of capital.

● **Accounting treatment**

Ofgem agreed through the RIIO process that network assets should now be depreciated over 45 years, rather than 20 years as previously. However this change is being introduced in stages and won’t be fully implemented until the next price control reviews in 2021/2023. Both British Gas and Citizens Advice, in their submissions to the ECC Select Committee inquiry, argued the case for this change to be brought in sooner, in order to reduce the cost to current customers.

● **Return levels too high?**

The ECC Select Committee report suggests that network companies have been able to make higher than expected returns. Ofgem has defined an appropriately calibrated price control as one that provides the potential for ‘double digit returns’ on equity, but also a potential downside ‘at or below the cost of debt’.¹⁵⁶ However, research shows that network companies in Great Britain have been achieving a return on equity of 11.7% on average (nominal, pre-tax).¹⁵⁷ Analysis by Citizens Advice shows that in the price controls that preceded RIIO, half of the energy network companies achieved returns of 10% or higher.¹⁵⁸ In other words, the upside described by Ofgem was achieved by most companies, not just the best performers. Moreover, network company returns are more than 2% higher in the UK than the rest of Europe.¹⁵⁹

Whilst some of this discussion relates to previous price control periods, emerging evidence suggests that the same thing may be happening under RIIO. Citizens Advice suggest that ‘the high returns of the previous price control have not been eroded, and some companies are now in an even more lucrative position.’¹⁶⁰ Dermot Nolan, CEO of Ofgem, stated in evidence to the ECC Select Committee: ‘I have looked at the first year returns and I will say they are somewhat higher than expected.’

150 ‘WACC’ or Weighted Average Cost of Capital – is the weighted average of the cost of equity and debt

151 Northern Ireland Electricity Limited Price Determination – a reference under Article 15 of the Electricity (Northern Ireland) Order 1992. Available at: https://assets.digital.cabinet-office.gov.uk/media/535a5768ed915d0fdb000003/NIE_Final_determination.pdf

152 Ofwat (2014) Setting price controls for 2015–2020 – risk and reward guidance. Available at: www.ofwat.gov.uk/pricereview/pr14/gud_tec20140127riskreward.pdf

153 Citizens Advice (2015) Many Happy Returns? The Consumer Impact of Price Controls in Regulated Networks

154 Ibid

155 Helm, D. (2009) Utility Regulation, the RAB and the Cost of Capital. www.dieterhelm.co.uk/sites/default/files/Helm_CC_060509.pdf

156 Ofgem (2012), RIIO- T1: Final Proposals for National Grid Electricity Transmission and National Grid Gas. Available at: <https://www.ofgem.gov.uk/ofgem-publications/53602/4riiot1fpfinancedec12.pdf>

157 Glanchant et al (2013) Incentives for investments: Comparing EU electricity TSO regulatory regimes

158 Citizens Advice (2015) Many Happy Returns? The Consumer Impact of Price Controls in Regulated Networks

159 Glanchant et al (2013)

160 Citizens Advice (2015)

● **Procedural issues**

The RIIO settlement for Western Power Distribution (WPD) was ‘fast-tracked’ in November 2013, since at the time Ofgem said it was satisfied it demonstrated value for money for consumers. Ofgem subsequently asked the 10 other DNOs to make additional efficiency savings of £2.1 billion. The ECC Select Committee inquiry suggests that this could have led to a difference of £860 million over the price control period between WPD’s settlement and Ofgem’s subsequent view of efficient costs.

Overall, it appears that there are several areas in which the current regulatory approach may be failing to achieve the best deal for consumers. The concerns raised are significant: British Gas calculates that retrospective changes to the regulatory regime could result in an immediate saving of £500 million per annum (£13 per household), plus a further saving of over £500 million per annum (£10 per household) from changes to the settlements for electricity distribution companies.¹⁶¹ This is in addition to the £860 million possible saving arising from WPD’s fast tracked settlement (over the course of the price control period). If the same principles were to be applied to settlements for the other networks (transmission and gas distribution) the overall savings would be even greater.

The network companies clearly have a different view. For example, the Energy Networks Association says that ‘The current robust and rigorous regulatory framework provides networks companies with incentives to deliver the specific outputs that customers expect... The industry’s strong record on increasing investment, improving efficiency and reducing costs can partly be attributed to the powerful efficiency incentives provided by the UK’s stable regulatory regime, which has been replicated by Governments around the world.’¹⁶² The case has also been made that regulatory ‘meddling’ can undermine market and investor confidence, thereby increasing perceived risk and the cost of capital of what is a very capital-intensive sector. As put by Helm (2015), there is an ‘irresistible urge’ for regulators and policymakers to meddle in regulated industries – ‘once they fall for the temptation, the chances are that they will again – and again, and again... credibility is hard to build up, and easy to destroy.’¹⁶³

Overall there is a finely balanced debate to be had about the need for further regulatory change in networks. From an industry perspective, the whole point of the price control was to create an extended period of certainty, and this would be undermined through further change (detering investment and increasing the cost of capital). But from a consumer perspective there are seemingly legitimate questions to be answered: features of the current regime which may not be delivering the best value for consumers. To an extent, these arguments will be resolved through the CMA’s case concerning electricity distribution companies, which is due to report by September 2015. But the current CMA case is limited in scope to 10 DNOs, leaving aside the remaining 4 DNOs owned by Western Power Distribution, as well as the electricity transmission and gas networks. If the CMA identifies grounds for concern in respect of the 10 DNOs in scope, this begs the question whether further action should be taken in respect of other energy networks.

Indeed, the ECC Select Committee inquiry into network costs recommended the need for a mid-term review of all RIIO price controls supported by an

161 British Gas written evidence submitted to the ECC. Available at: <http://data.parliament.uk/WrittenEvidence/CommitteeEvidence.svc/EvidenceDocument/Energy%20and%20Climate%20Change/Network%20costs/written/8309.html>

162 Written evidence submitted by the Energy Networks Association to the Energy and Climate Change Select Committee. Available at: <http://data.parliament.uk/WrittenEvidence/CommitteeEvidence.svc/EvidenceDocument/Energy%20and%20Climate%20Change/Network%20costs/written/8322.html>

163 Helm, D, (2015) *Regulatory Credibility and the Irresistible Urge To Meddle*. Available at: www.dieterhelm.co.uk/sites/default/files/The%20irresistible%20urge%20to%20meddle.pdf

independent auditor. This has merit to the extent that the alternative (waiting 8 years until the next price control review) seems to lock-in the status quo for a very long time. But carrying out such a review could significantly affect market and investor confidence and incentives. There is a lack of clarity about the exact nature and scope of such a review: would it simply be a ‘lessons learned’ review to inform the next price control, or a re-opening of all price controls (and if so then which elements of the price control)? If it is the latter, then this could have the practical effect of splitting the eight-year price control period in two, undermining the stability that would have otherwise been created.

The two CMA cases concerning DNOs need to run their course before any decisions are made. If the cases conclude that there are legitimate grounds for concern in respect of the 10 DNOs, then it will be appropriate for a wider review to be carried out (either immediately or at mid-term). However, the scope of such a review needs to be very clearly defined (and soon) to minimise the impact on investor confidence in the meantime.

Given the significance of the concerns raised, the scale of network costs, and the fact that this issue has already resulted in two CMA enquiries, there is a strong case that there needs to be more scrutiny of network companies and price settlements. British Gas, in their submission to the ECC Select Committee enquiry, highlighted that ‘the design of price control settlements is conducted almost exclusively through discussion between the networks and Ofgem.’ Under RIIO, there is a requirement for network companies to engage with their customers and wider stakeholders, albeit through informal mechanisms. There is evidence of significant engagement by some companies, although most customers and stakeholders simply do not have the time or expertise to contribute to what is a highly complex policy area. Even the energy suppliers do not have a strong incentive to engage in network price controls, since this is simply a pass-through item that all suppliers face.

As a possible solution, Ofgem could look to the example of the water industry, where companies are obliged to engage with customers and stakeholders formally through a ‘Customer Challenge Group’, (or consumer panel) to scrutinise business plans and price control reviews. This structure has been widely considered a success.¹⁶⁴ There is currently no requirement for energy networks to create a consumer panel, although some do so voluntarily. Ofgem has its own ‘Customer Challenge Group’, but this largely deals with strategic issues, and interestingly there are no energy suppliers on this group.¹⁶⁵ **We recommend that going forward, Ofgem should require all energy networks to establish a consumer panel or ‘Consumer Challenge Group’ to increase scrutiny of business plans and price control reviews.**

164 Consumer Council for Water (2014) Customer Challenge Group process: Review of Lessons Learned. Available at: www.ccwater.org.uk/wp-content/uploads/2014/07/Customer-Challenge-Group-process-Review-of-lessons-learned2.pdf

165 Ofgem (2013) RIIO – ED1 Consumer Challenge Group. Available at: <https://www.ofgem.gov.uk/ofgem-publications/85234/ofg513-consumer-challenge-group-riio-ed1-dec13-web.pdf>



Energy bills are the number one concern in terms of household expenditure. Households have seen energy prices and bills rise dramatically in recent years, causing increasing levels of concern and distrust of energy companies. There is a growing disconnect between what consumers want from energy and what government energy policy is delivering.

This report considers the drivers behind the increases in energy prices. It shows that policy and network costs, controlled by government, now make up a significant proportion of energy bills, and have been a major driver of price increases in recent years. This report considers the cost-effectiveness of policies to achieve energy and climate objectives, as well as the institutional and regulatory frameworks used to manage policy and network costs. It also considers how the energy and climate budget has been spent and managed.

The report argues that policy objectives could be met at lower cost to the consumer by adopting a more competitive and technology neutral approach. The report outlines a series of recommendations to put this approach into practice. Furthermore, the report suggests changes to the institutional and regulatory framework, to put consumer affordability back at the heart of energy policy and stem the increase in energy bills.

£10.00
ISBN: 978-1-907689-98-7

Policy Exchange
Clutha House
10 Storey's Gate
London SW1P 3AY

www.policyexchange.org.uk