

Energy bill support

Designing policies to support British households in an age of high prices

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SMF

**Social Market
Foundation**

Energy bill support – designing policies to support British households in an age of high prices

Interim report

Amy Norman
Scott Corfe

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- Adam Scorer, CEO of National Energy Action
- Dhara Vyas, Policy Director of Energy UK
- Guy Newey, CEO of Energy Systems Catapult

The panel saw a draft of this report before its publication and gave feedback, but the contents here are solely the work of the SMF and Public First – membership of the advisory panel cannot be taken as endorsement of any part of this document.

ABOUT THE AUTHORS

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Scott's insights have been covered in publications including the Financial Times, the Sunday Times, the Guardian and the Daily Telegraph. He has appeared on BBC News, Sky News, Radio 4 and a range of other broadcast media.

RESEARCH METHODS

This report draws on two opinion polls conducted by Public First during 2022, as well as a series of roundtables with members of the public during the summer of 2022.

The SMF ran a stakeholder engagement programme, holding four roundtable sessions with industry, charity, academic and independent experts on energy policy. Those were followed by another series of roundtables with parliamentarians and other representatives of five major political parties.

In addition to those conversations, the report draws on extensive informal discussions with energy policy stakeholders in several areas.

This report also sets out modelling of the costs and benefits of a range of energy policies, based on analysis of several datasets including the Living Costs and Food Survey from the Office for National Statistics.

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FEEDBACK

We strongly encourage readers to contact us with thoughts and feedback on this report, which ends with a series of questions for consideration. All communication from stakeholders is warmly welcomed at energy.bills@smf.co.uk. Full details of our project, including data tables and other documents can be found at <https://www.smf.co.uk/future-of-energy-bills/>

INTRODUCTION

It barely needs stating, but Britain faces an energy bill crisis. The wholesale costs of gas and electricity have rocketed. Unprecedented government intervention has been needed. And even then, typical bills in 2023 will be double what they were at the start of 2022.

But even before this current crisis, too many people could not afford heat and light. That means worse physical health and mental health, and poorer nutrition. It means more social exclusion and more financial distress and poverty. It means worse and shorter lives.

At least since the liberalisation of the retail energy supply market there have been discussions about how to support those in need with their energy bills. These debates have led to a number of different, overlapping schemes being put in place. This makes the support available not always so easy to understand. And as different schemes have different eligibility criteria it can be hard for households to know what they are entitled to.

The current crisis has led to emergency responses that are unsustainable over the medium and long-term. This report was being finalised as Chancellor Jeremy Hunt outlined changes to Government energy policies that will, despite attempts to save money, still see the Treasury spending tens of billions of pounds giving differing amounts of financial support to households facing high energy bills. Yet – as the analysis set out in this report will show – even interventions on such a scale risk leaving some households in dire need, while handing money to those in less need.

That is all a reminder that we do not have durable and considered energy bill policies at a UK level. Instead, we have had a succession of ministerial teams conjuring up ever more new schemes, initiatives and reforms in response to the crisis of the moment. The result might be likened to a Christmas tree bearing ever more decorations, and is consequently at risk of toppling over.

Perhaps the current set of “emergency” policies will allow Britain to scrape through the painful winter months ahead, albeit at great fiscal cost and while still exposing too many households to grave financial pain. But then what?

Perhaps the picture will improve slightly. Yet even if energy prices come down and the pressure on both households and public finances eases slightly, many will still struggle to afford protracted high energy bills. Industry forecasts suggest that energy prices could remain significantly above average throughout the decade and even beyond.¹ High and volatile energy prices may well be the new normal. A string of emergency policies cobbled together every few months is clearly inadequate to meet that prospect. What is needed is a coherent, evidence-based approach that starts from first principles – who should get help? how should that be delivered? – and commands the broadest possible support from policymakers, industry, consumers and other stakeholders.

Developing such an approach to energy bill policy is the aim of this report and the wider project of which it is a part. That project was convened by Citizens Advice, the statutory consumer champion for the energy market, and brings together a cross-party think-tank with a specialist policy consultancy. Together we are taking the long-term view of energy bill policy, thinking about what will work for households and taxpayers over the rest of this decade.

It is encouraging that in the Autumn Statement, HM Treasury commits the Government to develop “a new approach to consumer protection in energy markets, which will apply from April 2024”, working with outside groups to develop that approach. We look forward to engaging with this process, and to working with any policymakers thinking about developing energy bill policies for the remainder of this Parliament and the next one.

Our aim is to establish consensus around the policies that will need to be in place to reduce energy bills overall and especially for those who struggle to pay. Critically, our work is focused on what is likely to be politically achievable and able to garner support across the major parties. We want to build policy solutions which will stand the test of time and ensure stable solutions for supporting households with energy costs.

Our approach is based on three key pillars – price support to reduce bills for target groups, energy-efficiency measures, and reforming the energy market to weaken the link between expensive gas costs and the prices consumers face for electricity generated from a range of cheaper sources.

In this interim report, we examine these three pillars and set out a series of choices and challenges around the future of energy bill policy. This work draws on a wide-ranging programme of engagement with expert stakeholders and politicians, quantitative data analysis, economic modelling, two nationally representative surveys and a series of focus groups with members of the voting public. More information on these research methods can be found in the report appendix.

As an interim report, this document does not reach many firm conclusions or make recommendations. Instead, its primary purpose is to facilitate debate and thinking around long-term policymaking. To that purpose, the report ends with the questions we think arise from our work to date.

Those questions will form the basis of a consultation exercise that begins with the publication of this report and concludes in early 2023. We will then publish our final report, with recommendations for future policy in the spring of that year.

EXECUTIVE SUMMARY

The current position

Public concern about energy bills and living costs is high and widespread. Polling for this report found that the cost of living was the top issue for three quarters of voters in November 2022, up 39 percentage points over the past 12 months.

Official definitions of “fuel poverty” have varied over time and remain different in the nations of the UK. But on any measure, the problem is significant, with more than one of five households facing reductions in their condition of living in order to meet the cost of energy.

Fuel poverty is politically salient. Households in the so called ‘Red Wall’ seats were more likely to be in fuel poverty.

Modelling for this report shows that energy bills will continue to have a significant impact on household finances in future. With average bills at £3,000, households will still be exposed to spending over twice as much on energy compared to 2019/20. We calculate that 12 million households would spend over 10% of their income after housing costs on energy.

Those on the lowest incomes would be hit much harder, with energy comprising 62% of their total household income after accounting for housing costs, up from 34% in 2019/20. The Warm Home Discount will be insufficient at protecting households from hardship and would only reduce after housing cost spending on energy bills by 1-2% for those in the lowest income decile.

Principles for policy

This report considers three aspects of policy that affect energy bills:

1. Bill support schemes, that directly affect the sums that households pay for energy
2. Energy efficiency schemes, which affect the amount of energy households consume, and therefore spending
3. Market reform, which affects the way wholesale and therefore retail energy prices are determined

Our stakeholder engagement programme suggests that any future **energy bill support** schemes should, in principle, aim to:

- Target help at those in need without creating cliff-edges
- Provide a direct reduction in bills rather than giving general income support
- Avoid putting the burden of uptake on households, by assessing and identifying eligible households
- Fund help through transparent and progressive means
- Enable competitive market forces to drive costs down for households
- Take account of net zero and include incentives to reduce demand where possible

On **energy efficiency**, there was consensus that policy should be based on the following principles:

- Provide long-term certainty with limited political intervention
- If a targeted approach is employed, it should have broader eligibility criteria than those used for price support
- Offer varying levels of support to meet up-front costs, to help stimulate the able-to-pay market
- Offer improved information, advice and guidance to better equip all households to take action

While there was overwhelming consensus on the need to better insulate our homes, we found little agreement on *how* such a policy should be delivered.

Our engagement with industry experts and political stakeholders found that attempts to **reform the market** should be based on the following principles:

- Enable increasing security of the UK’s power supply
- Ensure the cost-savings from the lower marginal price of renewable generation are passed onto households
- Maximise the benefits of a smarter system
- Avoid trying to move too quickly on reform

Targeted support

There is broad consensus that in principle measures to address fuel poverty and to lower energy bills should be targeted at those most in-need. But in practice, targeting is extremely difficult. Existing systems are inadequate.

The social security system – encompassing benefits and the state pension – is currently being used to deliver help with energy bills. That system is incapable of reaching all those who might reasonably be considered in need of energy bill support. Using it to deliver that support means giving public money to those in less need.

There are significant limitations to existing analysis of fuel poverty. Using a “low income low energy efficiency” (LILEE) measurement of fuel poverty, we can be fairly confident that in 2020, there were 3.2 million English households in fuel poverty. But we do not know who or where they are.

HMRC incomes data is also limited, since it is based on individuals, not households. Energy Performance Certificates have been issued to around 50-60% of households in England and Wales but EPCs are often criticised as being outdated and inaccurate; the Government has conceded that they are in need of significant improvement. Using the council tax system is flawed because its records are often inaccurate and council tax banding is a poor proxy for either income or energy use.

With an average bill of £3,000, 12 million households would spend over 10% of their income after housing costs on energy. Targeting energy bill support at means-tested and disability benefit claimants would reach just 6 million households, missing out millions of other households that are in need.

Not everyone who needs help is in the benefits system. With bills at £3,000, 76% of households in the poorest decile face spending over 10% of their income on energy after accounting for housing costs. But only 45% of households in that income group claim means-tested and disability benefits.

Using state pensions to determine who gets help brings another 11 million households into scope. But this results in public money going to those who appear to have little need of it. Using the state pension as a criterion for energy bill help means around one in three households in the highest income decile would receive government support.

SMF analysis finds that 3 million households that do not claim benefits or a state pension would spend more than 10% of their after housing costs income on a £3,000 energy bill.

The UK needs a better mechanism for identifying and assessing household need over energy bills. There is a similar case for a better targeting mechanism in other sectors including water, financial services and telecommunications

A new mechanism for better directing help with energy bills could deal only with the energy sector or cover other sectors too. Whatever its scope, it should be independent of politicians and take an evidence-based and long-term approach to identifying households in need of help.

Bill support policies

There is strong support from politicians, stakeholders and the public for giving financial support to households struggling with bills. 73% of the public support this, with only 9% opposed.

Voters are increasingly prepared to accept higher taxation to fund bill support. In July, 52% of people we polled said they supported bill support policies “even if this means taxes rise as a result”. In October, this had risen to 64%.

Some stakeholders talk about the need for a “social tariff” in response. This term has sometimes been used to indicate a discounted price for energy available to certain groups. But some uses of the term are broader and there is little obvious consensus on what a “social tariff” is in the context of energy bills.

In our discussions with stakeholders we have identified four main options for delivering energy bill support:

1. A fixed-value bill discount, akin to the existing WHD
2. A discount applied to unit rates, making each unit of energy used cheaper
3. A rising block tariff, where the price paid for each block of energy increases
4. A real bill cap, where an absolute limit is put on the amount a household can pay for energy

This report analyses these four options on an equal basis. We assume energy bills at £3,000 and a policy objective of providing £900 worth of support for recipients.

Fixed payment discount:

There is solid public support for bill discounts. Net support was 51%.

Our polling suggests the public believe the value of discounts should be around 27-33% of the total, meaning around £900 on a £3,000 bill. The current WHD is worth £150.

Bill discounts create a risk of cliff-edges, where small changes in household circumstances mean losing large sums in energy support. This could be partly mitigated with a tiered approach to fixed payments, with higher payments for those on the lowest incomes.

A tiered fixed payment policy would cost a total of £6.7bn for 8.3 million households, who would be those claiming benefits *and* those households not on benefits but with income of less than £25,000.

63% of recipients would be in the lowest three income deciles. Over half (58%) of the policy costs would be focused on benefiting the bottom three income deciles while 7% of policy costs would benefit the top three income deciles.

Unit rate discount:

There is strong public support for unit rate discounts. 72% of all adults supported a unit rate discount, with only 6% opposed, for net support of 66%.

In focus groups we heard support for discounts generally, but also concern that this should reflect the number of people living in a house or other household circumstances.

Our modelling is based on a 30% unit discount.

Unit discounts also face the problem of cliff-edges, which again can be partly mitigated by tiering: 30% for those on the lowest incomes, 20% for the higher tier. Offering this support for benefits-recipient households and all others with incomes under £25,000 would benefit 8.3 million households at a cost of £6.7bn.

63% of policy ‘winner’ households are in the bottom three income deciles. 52% of overall policy costs would go to help the bottom three income deciles. 9% of policy costs would go to the top three income deciles.

While unit discounts have a similar distributional profile to fixed payment discounts, they carry an additional challenge of reducing household incentives to reduce usage. They also expose taxpayers to an unknown and potentially uncontrollable cost.

Rising block tariff:

Modest public backing: net support was 32%.

Enjoys some support from stakeholders, especially those from environmental policy backgrounds, since rising costs for increased consumption are seen as helpfully incentivising demand reduction. Also an instinctive appeal to notions of fairness: those who use the most should pay the most.

However, rising block tariff models face serious problems because a household’s energy usage is often very loosely related to that household’s income. For reasons of health or housing type, high users can have very low incomes; and vice versa.

Distributional analysis suggests that 26% of households in the poorest decile could lose under a rising block tariff, while 62% of the richest would gain. In our view, policy that *increases* energy costs for poor, sick people in cold homes while benefiting people on high incomes in cosy homes cannot be politically viable.

Even when a £2bn mitigation payment is applied to our modelled policy, our rising block tariff model still leaves around a fifth of the most vulnerable households worse off. This equates to over 520,000 households.

Real bill cap:

Weak public support. 48% of adults were supportive of introducing a real price cap. 29% opposed, giving a net score of 19%, making this the least popular option that we polled on

With our assumptions of £3,000 bills and £900 worth of support, we find that 4.1 million benefits-recipient households would benefit from a real cap. So would 5.9 million pensioner households and 5.9 million households with incomes below £25,000.

The number of households directly helped by a real price cap is lower than the numbers reached by other policy options modelled for this report, because a significant number of households already have consumption that puts their bills below the likely level of the real price cap.

We modelled a tiered approach to capping, with the real cap set at different levels for different groups. This means a 20% discount for most households, whose cap would be around £2,400. Benefits-recipient households would get a 30% discount, for a cap of £2,100.

The overall cost of this policy would be £14.8bn, spent to benefit 9.5 million households. This is more than double the cost of a unit rate discount policy and a fixed payment policy, despite only benefiting 1.2 million more households.

Distributionally, the benefits of even a tiered real cap policy skew further towards higher income groups than other interventions modelled for this report. More than half of the very poorest households would not benefit

Energy efficiency

The UK has the least well insulated housing stock in Europe and the majority of homes do not reach a sufficient standard of efficiency. Less than half of homes in England (44%), Wales (38%) and Scotland (45%) qualify for an EPC rating of Band C or above.

Policy interventions to retrofit homes have been relatively limited compared to the scale of the challenge. While the ECO scheme has demonstrated success, our analysis finds that nearly 11 million homes rated EPC D or below in England would not be considered fuel poor and therefore ineligible for support.

On a “whole house” basis, we calculate that upgrading all 14.1 million UK homes rated EPC D or below to EPC C would cost in the region of £119bn and deliver total annual energy bill savings of £10.2bn, meaning savings equal costs after 12 years.

The consensus from our stakeholder consultations was that when considering energy-efficiency policy, targeted support would require a broader definition than would be applied to price support: help with efficiency should be given to people outside the group of people on means-tested benefits or the lowest incomes. This is because the relationship between efficiency and income is not straightforward. There are about just as many homes rated EPC D and below in the poorest decile (1.5 million) as there are in the richest (1.4 million).

An efficiency policy that prioritised fuel poverty would – working on a “whole house” basis – seek to upgrade 3.2 million homes. The cost would be around £27bn, delivering annual savings of £3bn, for a payback period of 12 years.

An efficiency policy that prioritised demand reduction would – working on a “whole house” basis – seek to upgrade 3.1 million homes. The cost would be around £46bn, delivering annual savings of £5.6bn, for a payback period of 8 years.

A surprising 54% of homeowners do not believe they need (more) insulation. This is made up of 41% who think they have already had all the insulation measures they need fitted and 12% who have not had insulation fitted but still don't think they need it. Raising awareness around energy efficiency seems an obvious and important way to increase uptake.

In principle, the public are very supportive of the idea that there should be a government energy efficiency scheme. Across all adults 77% they were supportive compared to just 5% who were opposed.

Public opinion is divided on how any government support on efficiency should be allocated. 40% of respondents preferred such help to be targeted, while 54% preferred universal availability.

There are significant limits on how much householders are prepared to pay for energy efficiency work. We found 14% of homeowners would not be willing to contribute at all and a further 23% would not contribute more than £250. Only 10% of homeowners said they would be willing to contribute £3,000 or more.

The evidence of (often unsuccessful) efficiency schemes from across the UK is that reducing the cost to households is key to increasing uptake. In our poll, affordability was the most cited barrier to getting insulation fitted.

In our polling we found the public preferred that a government energy efficiency scheme be paid for via taxation (40% support) rather than through energy bills (11%). But a relatively high proportion (29%) said they had no preference.

Market Reform

There is considerable exasperation among political stakeholders with market arrangements that mean that the cost of electricity is based on the price of gas, even when some of that electricity is generated from renewables with near-zero marginal costs.

Despite the complexities of this issue, there is considerable public interest. When polled, 54% of the public said they supported changing the way we price electricity, with only 7% opposed. And 67% of the public thought that this should be one of the top priorities for the government.

Voters are also strongly supportive of renewable generation, perhaps seeing it as a route to lower bills. In our polling 70% said they would support the development of a wind farm within a few miles of where they live. Only 6% said they would oppose this development.

That strong support for wind becomes even stronger when voters are offered a discount on bills as a result of local turbines. But that discount does not need to be very large: support was not significantly higher though for a £350 discount than with a £100 discount.

The ongoing Review of Electricity Market Arrangements (REMA) is considering locational pricing, where different areas of the national network set different prices for energy. Our polling suggests mixed views of this concept. 35% believed the price paid by homes and businesses for electricity should be the same across the country. 21% would support locationally cost reflective pricing for businesses, with all homes paying the same. Locational pricing for both homes and businesses was supported by 18%

Innovations in the retail market for energy could bring savings for households, for instance by varying the unit price they pay according to the time of day and demand on the wider network. However, while such “time-of-use” tariffs exist in the UK, uptake is low with fewer than 15% of households on one, compared with 50% in France.

CHAPTER ONE – BACKGROUND

The cost of living rose to become the dominant issue for voters in the spring of 2022, rapidly overtaking concerns about the NHS and the covid pandemic. Public First polling finds that the cost of living increasingly dwarfs other concerns in the minds of the public. We found that the cost of living was the top issue for three quarters of voters in November 2022, up 39 percentage points over the past 12 months.²

In focus groups conducted for this project and others, we hear of little else. People are worried, frightened even. They talk about the changes they are already making in their day-to-day lives to cut their costs. Even groups of households with above average earnings are anxious and have already cut their outgoings. To quote one:

“I'm dreading winter... it pushes on people's mental health because they can't afford to pay” (Derby).

We see a majority of households reporting an annual income over £60,000 saying they are cutting back. And in one poll we found 20% are eating less overall (not eating less of the luxuries - just eating less food overall).³

Government support for energy bills this winter is vital and welcome. But it cannot alleviate all of the financial pain that many families are facing.

In this section we set out the background – how we got here, what has been tried before, what is being tried now and what the public think about the challenges ahead.

Fuel Poverty

While there had been concerns about the affordability of fuel bills in the 1970s, at the time of the oil price shock, the government only began to consider the specific concept of fuel poverty in the late 1990s. In 1999 an Inter-Ministerial Group on Fuel Poverty was convened, including representatives of the devolved administrations.⁴

At the same time, a private members bill was proposed by the late David Amess MP.⁵ This became law as the Warm Homes and Energy Conservation Act 2000 and required the Secretary of State (in regard of England) and the National Assembly of Wales to publish a fuel poverty strategy.

The first Fuel Poverty Strategy was published in 2001.⁶ It defined a fuel poor household as "one that needs to spend in excess of 10% of household income on all fuel use in order to maintain a satisfactory heating regime" and set a target to end fuel poverty for vulnerable households by 2010.

In 2011, the coalition government commissioned Professor John Hills, Director of the Centre for Analysis of Social Exclusion (CASE) at the London School of Economics, to undertake an independent review of the fuel poverty definition and target. This review started from first principles and argued that the ‘10%’ measure of fuel poverty was flawed and should be replaced. Among the evidence cited for the need for a new methodology was media reports that the Queen could be in the fuel poverty statistics given the high cost of heating royal palaces.⁷ Professor Hills proposed a new definition (known as “LIHC”) which “would capture households where required spending is higher than the median (typical) required levels and where spending this amount would reduce household income below the poverty line”.⁸

While the governments in Wales and Scotland continued to use the ‘10%’ measure, the Department for Business, Energy & Industrial Strategy consulted in 2019 on a further change to the definition of fuel poverty. This identified a drawback in the LIHC measure in that the relative nature of the indicator means that the proportion of households in fuel poverty remains, overall, stable over time. It proposed (another) new measure where households would be classed as fuel poor if i) they lived in a property with an energy efficiency rating of Band D, E, F or G and ii) their disposable income (after housing costs and energy needs) would be below the poverty line. This new Low Income Low Energy Efficiency (LILEE) indicator was fully adopted in 2021.⁹

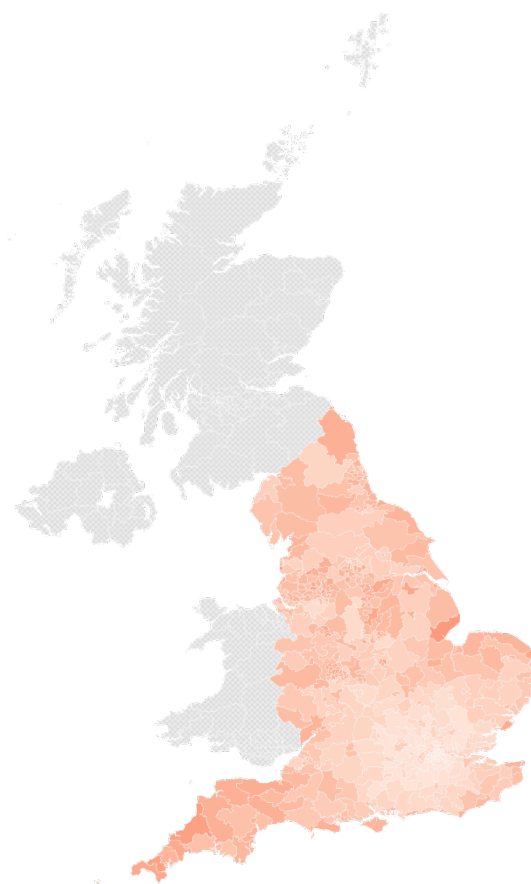
Fuel poverty statistics in England have shown a gradual decline in recent years, with the proportion of households in fuel poverty under the LILEE measure falling from 22.1% in 2010 to 13.2% in 2020.¹⁰

In Scotland, the specific version of the 10% measure of fuel poverty is as defined in The Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019. This establishes a two-part definition whereby a household is considered fuel poor if:

- after housing costs have been deducted, more than 10% (20% for extreme fuel poverty) of their net income is required to pay for their reasonable fuel needs
- after further adjustments are made to deduct childcare costs and any benefits received for a disability or care need, their remaining income is insufficient to maintain an acceptable standard of living, defined as being at least 90% of the UK Minimum Income Standard.

Scotland has not seen as significant a downward trend in fuel poverty as seen in England. The proportion of households in fuel poverty fell from 25.7% in 2016 to 24.6% in 2019.¹¹

Analysis conducted by Public First based on publicly available datasets found that households in the so called ‘Red Wall’ seats were more likely to be in fuel poverty – a timely reminder of the political salience of fuel poverty.

Figure 1: Distribution of households in fuel poverty in Summer 2022 (modelled)0  100

Source: Public First analysis

Schemes to provide support to households

At least since the liberalisation of the retail energy supply market there have been discussions about how to support those in need with their energy bills. These debates have led to a number of different, overlapping schemes being put in place. These typically have their own unique eligibility criteria and exemptions, and their own funding mechanism, making the landscape difficult for an individual household to navigate.

The Warm Home Discount

A requirement since 2011 for energy companies to provide an energy bill rebate each winter. From winter 2022-23 the WHD will be worth £150 per eligible household. This is given as a discount from the electricity bill of low income pensioners and other low income households.

Eligibility for the WHD is split into three groups. The Core Group 1 and Core Group 2 are coordinated by BEIS. The third, called 'Industry Initiatives' is administered by Ofgem. Core Group 1 assists less well-off pensioners – most eligible pensioners are identified by their receipt of Pension Credit Guarantee Credit. Core Group 2 prioritises rebates to low-income households that are more likely to have high energy costs. Eligibility is determined by matching property data held by the Valuation Office Agency (VOA) with means-tested benefits and Tax Credit data held by DWP and HMRC. The Industry Initiatives element of the scheme allows retail energy suppliers to help fuel-poor customers through measures such as benefit entitlement checks, debt assistance, energy advice or smart meter advice.¹²

The value of this scheme to eligible households in 2022 is expected to be £506m.¹³

The scheme is funded through energy bills, with suppliers recouping the total value of their obligation, plus any administrative costs they incur, through higher prices¹⁴ (which Ofgem accounts for when setting the price cap). The WHD is expected to add around £19 to a typical energy bill in 2022/23.¹⁵

The Energy Company Obligation (ECO)

A requirement for larger domestic energy suppliers to install heating, insulation or other energy efficiency measures in the homes of people who are low income and vulnerable or fuel poor.

ECO has been responsible for the majority of home energy efficiency measures installed in the last decade. 3.5 million measures were installed into 2.4 million households between January 2013 and March 2022.¹⁶

The current iteration of the Energy Company Obligation (ECO4) will run from 2022-2026. The annual cost of the scheme has been increased to £1 billion per year from 2022-26; this is funded by a *de facto* levy on energy bills.

Winter Fuel Payments

A benefits payment for pension-age individuals of between £250 and £600 to help with heating bills. Those in receipt of the State Pension (or certain other social security benefits) are automatically eligible and do not need to apply.

The Resolution Foundation has pointed out that 3.7 million pensioner households (~45%) are in the top half of the income distribution for the whole population¹⁷ – meaning WFP is a poorly targeted benefit.

The WFP is funded by central government. At the time of writing, the Government expects to pay this benefit to over 11 million pensioners at a total annual cost of £2bn.¹⁸

Cold Weather Payments

This is a scheme to provide payments of £25 to recipients of certain benefits for each 7 day period of very cold weather between 1 November and 31 March annually. Recipients do not need to make a separate claim for Cold Weather Payments. The payment is made automatically into the same bank or building society account as other benefit payments.

Cold Weather Payments are funded by central government. The cost to the Exchequer on a yearly basis is unpredictable as it is based on weather and can vary heavily from year to year – In 2007-08 Cold Weather Payments totalled around £4 million, but during the cold winter of 2009-10 around £431 million was paid out.¹⁹

Public understanding

Our focus groups found limited awareness of energy support schemes. Most participants could not name the above schemes unprompted, though the Warm Home Discount was mentioned by some. Participants were in favour of the Warm Home Discount even when it was explained that this was funded by everyone's energy bill being slightly higher.

“I'm all for the genuine people that do need benefits and do need help in times like this.... I mean, I've been in a position where I know that that grant could have massively helped me. So now I'm not, I don't mind chipping in and helping the guys that do need it” (Wakefield).

In general the groups had heard that further financial support was coming this year, but there was confusion as to who would receive it.

Social Tariffs

Prior to the introduction of the Warm Home Discount, energy suppliers offered social tariffs. The Institute for Government credits the Fuel Poverty Advisory Group (FPAG) with first floating the idea of social tariffs – charging certain groups lower prices for their energy – in 2005. And suppliers did follow, voluntarily. EDF introduced the first voluntary social tariff in 2006.

While the social tariffs offered were discounted tariffs, a number of studies found that customers on these tariffs could get an even better deal in the open market by switching.²⁰ Some of these better deals were restricted to payment by direct debit, which is not always an option for low income customers or those with a PPM fitted.

Social tariffs were strongly encouraged by government and the regulator at that time, but relied ultimately on the corporate responsibility of suppliers. As a result the terms, eligibility, and discounts offered by different suppliers varied. For some time, proposals to put social onto a mandatory basis fell into a gap between government and regulator. Ofgem saw mandatory social tariffs as a policy issue for government, whereas government preferred to be hands-off and let the regulator decide.²¹

This impasse ended when the Brown government legislated for a move from voluntary to mandatory support through the 2010 Energy Act, on the basis that the voluntary approach to social tariffs was not producing adequate protection for vulnerable households.

The coalition government largely accepted the mandatory approach and in December 2010 proposed a new social price support scheme it called the Warm Home Discount.

The Price Cap

There had been concern dating back at least to the early 2000s, that default tariffs (or SVTs) were poor value for money. Consumer groups had long argued that the model of attracting new customers with cheap one-year deals and then “rolling” customers onto expensive SVTs at the end of the term led to customers overpaying. In September 2013, Ed Miliband, then Labour leader, said that if his party was in government after the 2015 general election, energy bills for retail and business customers would be frozen for 20 months.

The Competition and Markets Authority (CMA) undertook an extensive study of the retail energy market between June 2014 and June 2016. In January, as energy bills began to fall, Miliband altered Labour’s policy to promise not a freeze on bills but a cap, to last until 2017.

In its June 2016 report, the CMA concluded that domestic customers of the Big Six energy companies were paying an average of £1.4bn a year more than they would in a truly competitive market. In the autumn of 2017, Prime Minister Theresa May announced legislation for an energy price cap in her 2017.

A key point in the context of this report is that the aim of the Price Cap is not to ensure affordability, but to ensure that default prices are reflective of the costs an efficiently-run supplier would incur. That is, it seeks to make bills fair – by limiting the difference between the lowest and highest prices paid in the market. But a “fair” market does not necessarily mean that energy is cheap.

Our focus groups in Wakefield and Derby were supportive of the idea of a price cap, but were confused about how it worked and what it aimed to achieve.

Our groups were conducted in July, around six weeks before the price cap level for October 2022 was due to be announced, but participants were aware that the cap was expected to rise and were understandably concerned. One group interpreted the expected rise in the level of the cap as the price cap being removed entirely and could not understand why the government had done this. Some lower income participants thought they had benefited from the cap, while others were not aware of it at all.

“I didn't even realise that there were a cap... until they've said that's what they were removing. I just don't get it. I don't understand why. it's crazy... they were obviously making profits as it were. But it's that and the fuel prices that's just made the cost of living more expensive. Because of those two things, everything else is so much more expensive. Life revolves around those two things, energy and petrol. Everything you eat, everything you see, everything you do revolve around those three things. So for them to put them up at the same time is just that's what's crippling everybody. And it just has a knock on effect to everybody. every business, every person” (Wakefield).

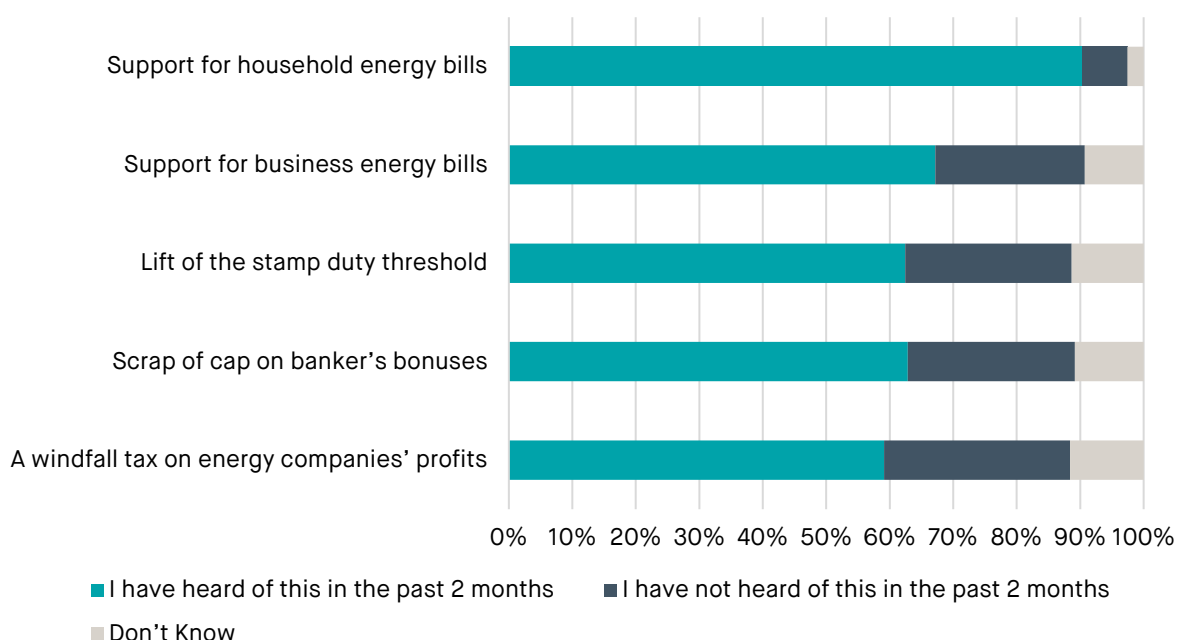
Energy policy is complex and sometimes poorly understood by the public. One of the groups conducted in Derby concluded that the government really should introduce a cap on energy prices - even though the price cap had been explained earlier in the session.

Energy Price Guarantee

The Energy Price Guarantee was announced by Prime Minister Liz Truss on 8 September. It uses public money to reduce the unit prices paid by domestic consumers, such that a household with typical energy consumption will pay an annual rate equivalent to £2,500, rather than the £3,549 level of the price cap announced by Ofgem in late August. On 17 November, Chancellor Jeremy Hunt announced that from April 2023, the EPG will be set to hold typical bills at £3,000.

In our poll we tested awareness of a number of policy interventions made at around the same time. Government support for household energy bills has higher recognition than other recent policy interventions. 90% said they had heard about household energy bill support, compared to 62% who had heard of changes to stamp duty, 63% who had seen the bankers' bonus cap had been scrapped and 59% who recognised the windfall tax on energy companies' profits.

Figure 2: Awareness of recent government interventions



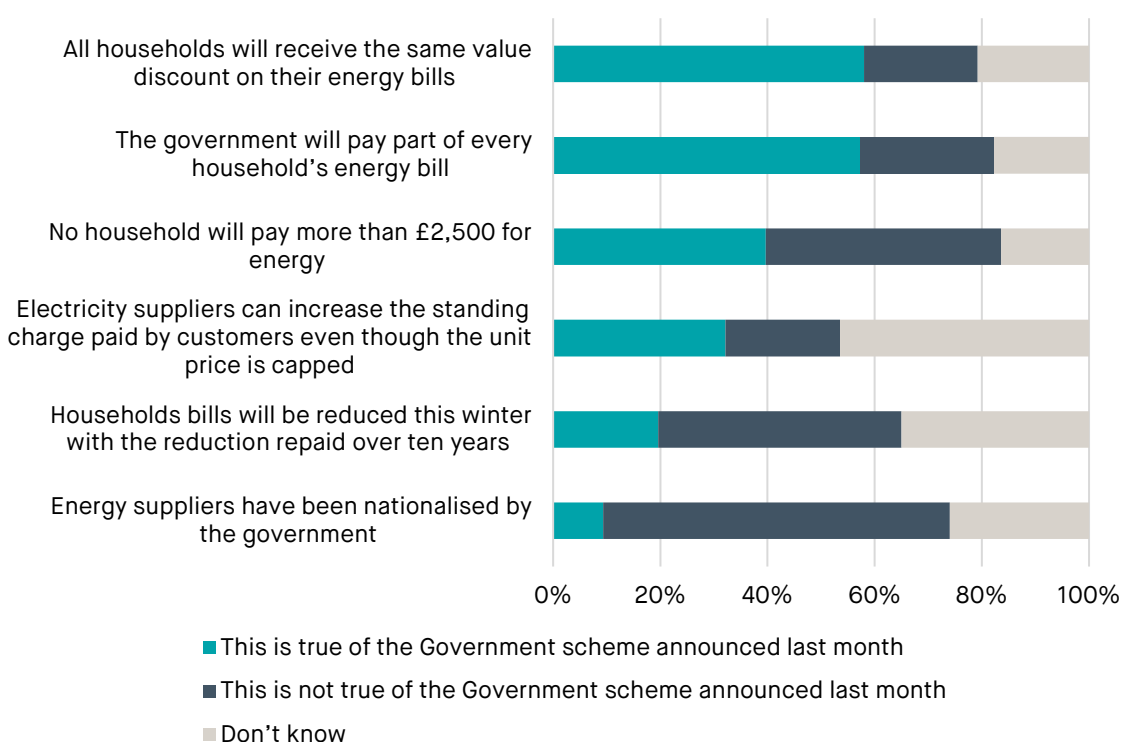
Source: Public First survey

Given the limited familiarity with the Price Cap seen in our focus groups over the summer it was perhaps unsurprising that understanding of the new Energy Price Guarantee was not high. 45% said they fully understood the Energy Price Guarantee. A further 43% said they had heard of the scheme but did not fully understand how it worked. Only 7% admitted to not understanding at all how the scheme works.

We then tested a number of different explanations of what the government's energy price support scheme actually was. 58% believed it meant all households would receive an identical bill discount. 57% said it meant the government covering part of every household's energy bill. 40% said it meant no bill could be more than £2,500. 32% thought it meant electricity suppliers could increase standing charges. 20% thought it meant bills would be reduced this winter with the reduction repaid over ten years.

Another often-overlooked facet of the EPG has a bearing on other bill support policies. While the EPG is in place, the costs of the WHD and ECO are not applied to household bills. Instead, they are met directly by government.

Figure 3: Familiarity with the Energy Price Guarantee



Source: Public First survey

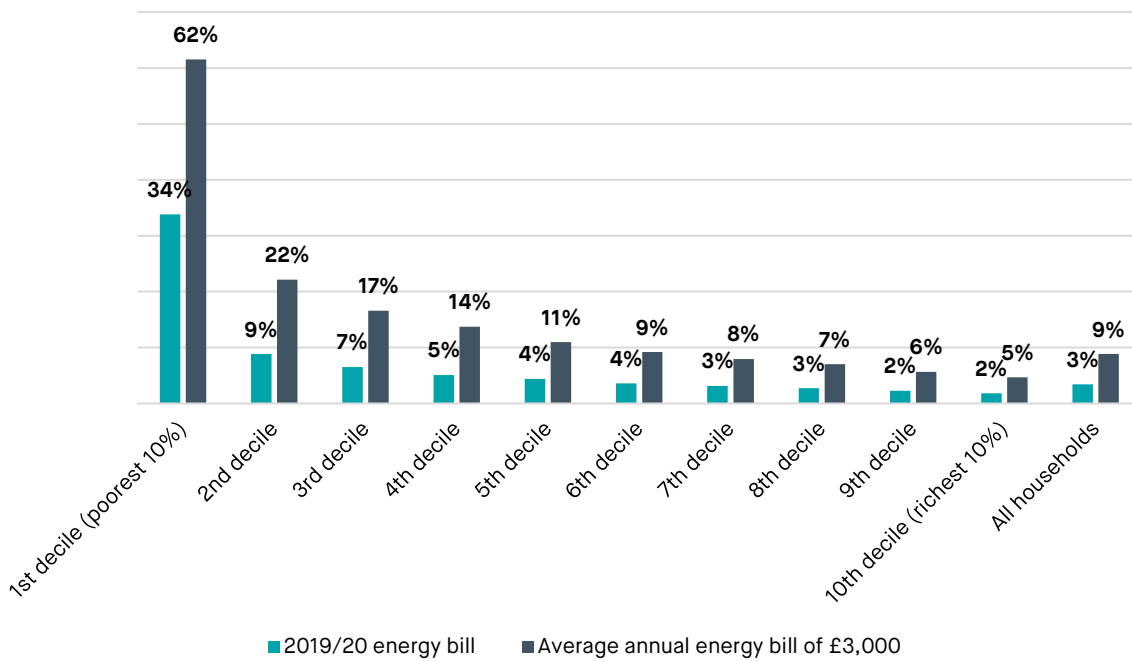
Looking ahead

The government's current support for energy bills provides welcome relief for UK households facing soaring and volatile prices. However, this is by no means "problem solved" for policymakers. Looking ahead, high energy bills are going to continue to impact household finances for the next eight years. Forecasts from Cornwall Insight estimate that an average annual energy bill could cost around £3,500 until at least 2024, with higher than average prices lasting throughout the rest of the decade.²² In comparison, direct government support for energy bills is set to last at least six months for all households and, at best, two years for an unspecified targeted group of households.

There is much uncertainty around what energy prices might look like beyond 2024. It is beyond the scope of this project to provide an accurate forecast. However, based on Cornwall Insight’s analysis and conversations with industry experts, we model how households may be impacted if prices fall in line with an average annual bill of around £3,000.

In this scenario, households will still be exposed to spending over twice as much on energy compared to 2019/20. Those on the lowest incomes would be hit much harder with energy comprising 62% of their total household income after accounting for housing costs, up from 34% in 2019/20. The existing level of support available through Warm Home Discount will be insufficient at protecting households from hardship and would only reduce after housing cost spending on energy bills by 1-2% for those in the lowest income decile.

Figure 4: Average proportion of household income (after housing costs) spent on energy bills, by income decile



Source: SMF analysis of Living Costs and Food Survey.

CHAPTER TWO – PRINCIPLES FOR ENERGY SUPPORT

Before getting into the practicalities of policy design, we sought to first find a consensus on the underlying principles of long-term energy support. This consisted of a series of stakeholder workshops, political roundtables, and focus groups in July and September 2022.

In July 2022, we held four focus groups with members of the public, two of which consisted of Labour-leaning voters and the other two consisted of Conservative-leaning voters. Per voting intention, one focus group comprised lower-income households and the other comprised above average-income households. The purpose of the focus groups was to test public opinion on rising energy bills and the nature of government support.

Following this, in July 2022, we also hosted four stakeholder workshops with industry and non-governmental organisation (NGO) representatives on the design principles of energy policy, as well as academics and other experts. The conclusions of the earlier sessions were then tested in three Chatham House roundtables of political stakeholders across five major UK parties in September 2022.

In total, around 70 people took part in these sessions.

Across all of our engagement activities, we sought to discuss the principles that participants felt should underpin energy policy, aiming to identify areas of agreement.

The following summarises the consensus reached across our engagement programme. It obviously does not reflect perfectly the views of all - or indeed any - of our participants. Rather, it is our attempt to capture the points where there was broadest agreement. Much of this chapter draws on a series of documents published during the course of the project, setting out our summaries of the different sessions. Those publications allowed participants a chance to review our conclusions about their sessions, further strengthening our confidence that the following is a fair summary of the broad spectrum of views we have heard and tested.

Principles for price support

Policies to reduce household energy bills through price support should be based on the following principles:

- **Target help at those in need without creating ‘cliff-edges’**
- **Provide a direct reduction in bills over general income support**
- **Avoid putting the burden of uptake on households, by assessing and identifying eligible households**
- **Fund help through transparent and progressive means**
- **Enable competitive market forces to drive costs down for households**
- **Take account of net zero and include incentives to reduce demand where possible**

Target help at those in need without creating ‘cliff-edges’ A first-principles approach to energy justice would be to provide support to those most in need. Targeting support in such a way prevents wider economic and social harms that are associated with fuel poverty, such as households falling into arrears and/or suffering from ill-health as a result of self-rationing or disconnection. From a fiscal responsibility perspective, a universal approach in which higher-income households also received support would not be considered a reasonable use of public finances: where possible, public money should not be used to support the finances of people who are able to meet even high energy bills without suffering economic hardship.

Focus groups and polling conducted by Public First as part of this project revealed that higher-income participants favoured targeted support while lower-income participants were more wary of targeting, partly on the basis of their own direct experience of means-testing. Over half (52%) of the public would support the government providing direct financial support to poorer households to help with their energy bills even if this meant taxes rise as a result. Only 22% said they opposed this approach.

The practical challenges of targeting are explored in more detail in Chapter Three. Key challenges include identifying who requires support and then delivering it. However it is also important to recognise the ‘cliff-edge’ risk of targeted support. This occurs when those just above the eligibility criteria who do not receive support may still have to contribute towards funding the mechanism and end up worse off in net terms. Additionally, those receiving support may also be disincentivised from improving their economic circumstances for fear of losing eligibility: if a few more pounds of income raises a household over the energy support threshold meaning a much larger increase in energy bills, it is not economically rational to seek that increase in income. This quantum of the disincentive rises with energy bills. As a result, an effective targeted price support policy would take account of this challenge to provide a step or taper in support.

Provide a direct reduction in bills over general income support. Fundamentally, energy poverty is an aspect of poverty in the wider sense. Income is a significant predictor of whether a household can afford its energy bills, albeit that there are other factors such as the efficiency or size of the property, and the energy requirements of a household. As a result, some stakeholders suggested that energy bill support should be administered through a general welfare system rather than directly in the energy market to avoid market distortions or excessive administrative burdens on suppliers. However, the consensus from our workshop and focus group participants opposed this view, because of concerns that direct cash payments could be used on other things and therefore not all money meant for energy bills would be used on energy bills. Instead, there was a clear preference for direct subsidies to reduce energy bills for eligible households.

Avoid putting the burden of uptake on households, by assessing and identifying eligible households. Schemes that require households to apply for support run a significant risk of lower uptake due to challenges of awareness, stigma and the burden of proof (if a means-test is applied). In short, asking people to come forward a claim or apply for help means that some will not do so. Public First focus groups demonstrated limited public awareness of existing support schemes, such as the Warm Homes Discount or the Winter Fuel Payment – even among low-income participants. A system that assessed, identified and automatically enrolled households would reduce these challenges while also potentially saving the administrative cost of managing applications. Of course, as we highlight later in this report, there are significant practical challenges to building a well-identified targeted list of households in-need.

Fund help through transparent and progressive means. Funding support schemes through on-bill levies is regressive, lacks transparency and lacks political feasibility in the current context. We found broad agreement that price support policies should be funded through general taxation. As previously highlighted, focus group participants from higher-income households supported paying more in tax so that lower-income households could receive support.

Enable competitive market forces to drive costs down for households. There is broad consensus among industry, NGO and political stakeholders that price support policies should not create disincentives for market competition, particularly in the case of targeted support. Households recognised as being in need of help should not be ‘locked’ into a tariff or mechanism that cannot benefit from the cost reductions that may come about from competitive market forces.

Take account of net zero and include incentives to reduce demand where possible. Decarbonising homes or the energy supply network is outside of the scope of this project. However, we and our participants recognise that it would be uneconomical and short-sighted to design a durable regime of price support that does not take account of the transition to net zero and the need to reduce overall energy demand. Price support policies should therefore ensure price signals are creating the right incentives for such behaviour.

Principles for energy efficiency

There is broad consensus that price support alone does not tackle one of the root causes of energy poverty in the UK – our poorly insulated homes. Due to the scale and nature of the challenge, the principles that underpin improving energy efficiency vary from price support. As such, energy efficiency policy should be based on the following principles:

- **Provide long-term certainty with limited political intervention**
- **If a targeted approach is employed, it should have broader eligibility criteria than those used for price support**
- **Offer varying levels of support to meet up-front costs, to help stimulate the able-to-pay market**

- **Offer improved information, advice and guidance to better equip all households to take action**

Provide long-term certainty with limited political intervention. Over the past decade, inconsistent and short-term energy-efficiency policies have diminished confidence in investment and caused disruptions in the supply chain, leading to relatively low levels of installations. There is widespread consensus on the need for committed long-term funding that is not easily removed or cut at fiscal events. This provides greater certainty for the supply chain to invest in skills to develop an established workforce and for the market to deliver innovative options such as in financing or consumer offers.

Take a targeted approach with broader eligibility criteria than those used for price support. There is agreement among industry and NGO stakeholders that a government-funded energy-efficiency scheme should be targeted at homes where improvements are most needed. The definition of this need should be broader than for price support (e.g. low-income and vulnerable households) due to the multiple factors that underpin the current retrofit challenge – the need to improve general housing stock means that higher-income households can still face significant costs; the fragmented approach of government policy means that there is an imperfect relationship between fuel-poor households and the quality of their homes; and, unambitious regulatory standards in the private rented sector means that renters live in the highest proportion of non-decent homes.

While there was limited consensus on how to define the most in-need homes, stakeholders warned that any approach should not be based primarily on carbon savings, since emissions can be an unreliable indicator of household need. At times of high energy bills, households may ration heating, meaning their emissions are reduced and their energy consumption (and therefore emissions) might in fact increase with better insulation in the short term.

Notably, the public were split on whether a government-funded scheme should be targeted at low income/vulnerable households or be available to everyone equally. Polling by Public First conducted for this project found that 40% of respondents preferred for this to be targeted, against 54% who preferred universal availability.

Varied levels of support to meet up-front costs that also stimulates the able-to-pay market. High upfront costs of energy-efficiency measures act as a barrier to uptake. As such, there has been little appetite among the public to make private contributions. There is a clear consensus that poorest households should not have to make capital contributions towards energy-efficiency measures, including ancillary costs, such as loft clearance. Beyond this, it was agreed that there should be varied levels of support available to more ‘able to pay’ households, including for landlords where payback incentives are less direct. In these cases, household contributions should still exist so as not to hamper the incentives to build the supply chain for mass-market retrofit funded by the “able to pay” group.

Improved information, advice and guidance to better equip all households to reduce demand. At a minimum, stakeholders agreed that households could be better informed as to how to reduce their demand through behavioural changes as well as energy-efficiency improvements. Currently, there is little government leadership on providing such advice.

Lack of consensus on mode of delivery. While there was overwhelming consensus on the need to better insulate our homes, there was little agreement on how such a policy should be delivered. In some cases, stakeholders highlighted the benefits of local authority-delivered schemes while others suggested that energy suppliers could play an even more pivotal role beyond ECO. There is also a lack of consensus on whether this might be done on a need-per-household basis or in ‘zones’ such as a street-by-street approach. In the case of the latter, concerns were raised around creating a postcode lottery and the cost-effectiveness given that the fragmented approach to energy-efficiency means homes in close proximity can vary widely in standards.

Principles for market reform

Overall, there is a strong consensus that the current energy crisis has exposed weak spots in the UK’s energy market that require reform. Our engagement with industry experts and political stakeholders found that attempts to reform the market should be based on the following principles:

- **Enable increasing security of the UK’s power supply**
- **Ensure the cost-savings from the lower marginal price of renewable generation are passed onto households**
- **Maximise the benefits of a smarter system**
- **Avoid trying to move too quickly on reform**

Enable increasing security of the UK’s power supply. Underpinning any debate on market reform, there is widespread recognition that the UK energy market needs to reduce its exposure to external risks for a more secure system. Over the long-term there is broad agreement that this requires increasing the capacity of renewable generation.

Ensure the cost savings from the lower marginal price of renewable generation are passed onto households. In principle, there is significant support for ensuring that households benefit from the falling cost of renewable generation by way of lower bills. This requires decoupling the price link between gas and electricity, which there is also a consensus for. However, in practice, stakeholders raised concerns that the design of such a mechanism is complex and requires extensive analysis and consultation.

Maximise benefits of a smarter system. There is notable enthusiasm among industry stakeholders to ensure that the UK moves towards a smarter, more efficient energy system. The introduction of half-hourly settlements is widely supported to pave the way for a smarter system based on time-of-use tariffs. There is agreement that this would enable households to better realise the benefits of off-peak pricing.

Avoid trying to move too quickly on reform. While there is consensus on the need to reform the energy market, stakeholders exercise caution that policymakers should avoid rushing complex reforms to meet the challenges of today. The crisis has created an impetus for reform and a sense of urgency, however there is still limited understanding of what externalities may occur as a result of reforms, such as the ones proposed in the Review of the Electricity Market Arrangements (REMA). Industry stakeholders therefore supported a more thorough review and policy consultation period that better avoids the risk of poorly-designed policy responses.

CHAPTER THREE – ADDRESSING THE LIMITATIONS OF TARGETING

There is broad consensus that, in principle, measures to address fuel poverty and to lower energy bills should be targeted at those most in-need. But in practice, targeting is extremely difficult. This is the case even during periods of more sustainable energy prices, let alone a prolonged crisis where the scope of who is considered ‘in need’ is significantly wider.

This tension is well-reflected in the government’s current approach to providing households with support for their energy bills. Thus far, interventions have primarily taken a universal approach, such as the £400 Energy Bill Support Scheme or the Energy Price Guarantee capped unit price. It would be an oversimplification to suggest that this is solely motivated by the idea that global crises tend to give rise to a “we’re all in this together” narrative. As our focus groups and polling show, the public recognise that the impact of such crises is felt more severely by lower-income households and as a result, believe that government spending should be targeted at those in need. This view persists for many participants even when they are asked if they would accept paying more in tax to support targeted help.

In a change of policy, Chancellor Jeremy Hunt announced in October 2022 that the Energy Price Guarantee would be reformed from April 2023, part of “*a new approach that will cost the taxpayer significantly less than planned whilst ensuring enough support for those in need.*” In his Autumn Statement on 17th November, the Chancellor announced that a universal unit-discount policy would remain in place – albeit allowing typical bills to reach £3,0000 – in combination with “targeted” support delivered to all in receipt of the state pension, means-tested benefits or disability benefits.

As this chapter will show, the social security system is incapable of reaching all those who might reasonably be considered in need of energy bill support, while using it to deliver that support means giving public money to those in less need. Given the Chancellor’s October remarks about the need to move away from universal support and target help on those in need, the Government’s November decision to retain a universal element in its bill support policy might be taken as tacit acceptance that the state lacks a truly satisfactory mechanism for identifying those in need and getting money to them. Such a gloomy conclusion about the capacity of current institutions to deliver help to the people who need it most is, sadly, borne out by our analysis here.

Limitations of targeting

Even in more sustainable times of lower energy prices, accurately measuring fuel poverty has been an ongoing challenge. As set out in Chapter One, conceptualisations of the issue have evolved over time from the 10% measure to low-income low energy-efficiency (LILEE). While this is useful for estimating the prevalence of fuel poverty, LILEE is illustrative and based on survey data. We do not know who or where the 3.2 million English households that were estimated as LILEE in 2020 actually are. That raises an obvious challenge for a policy of targeted help.

Operationalising this concept of fuel poverty to identify and assess households in need requires that the state has good data on measures like household income, energy requirements, and the efficiency of a home. This is true for only a minority of households in the UK.

HMRC's data on income is based on the individualised income tax system, not households. By contrast, DWP does evaluate means-tested benefits by household income, but this covers around 6 million households, just 22% of all UK households²³. Meanwhile, Ofgem collects data on household consumption, but this is a problematic proxy for energy needs given that fuel poor households may ration their energy use to cut costs. And, while energy efficiency data is more comprehensive – the Valuation Office Agency has issued EPCs for around 50-60% of households in England and Wales – EPCs are often criticised for being outdated²⁴ and inaccurate²⁵. Conceding the need for significant reform, the Government in 2020 set out an “action plan” to address the flaws of EPCs.

Targeting by welfare and social security

Given this patchy system of relevant data, existing targeted energy support schemes have primarily relied on the welfare and social security system for identifying and assessing households in-need. Where government data falls short, energy suppliers have discretion to ensure missed households receive support. While this arrangement was imperfect, it went some way to providing support for around 2.2 million fuel poor households via the Warm Home Discount and 3.7 million pensioner households via the Winter Fuel Payment.²⁶ However, as our analysis below highlights, in the context of prolonged higher-than-average bills, continuing with this approach to targeting would be both insufficient and wasteful.

Targeting energy bill support at all means-tested and disability benefit claimants irrespective of how much they spend on energy would benefit 6 million households. This is unlikely to be sufficient as millions more households not claiming benefits are likely to be in need (see below). In order to broaden the eligibility of targeting, policymakers may be tempted to include the additional 11 million households claiming other social security benefits including the state pension, which is used as the qualifying criteria for the Winter Fuel Payment. However, this would potentially include millions of households that do not necessarily require support. Giving them support with bills would be inconsistent with a targeted approach and might be regarded as an unreasonable use of public money at a time of fiscal constraint.

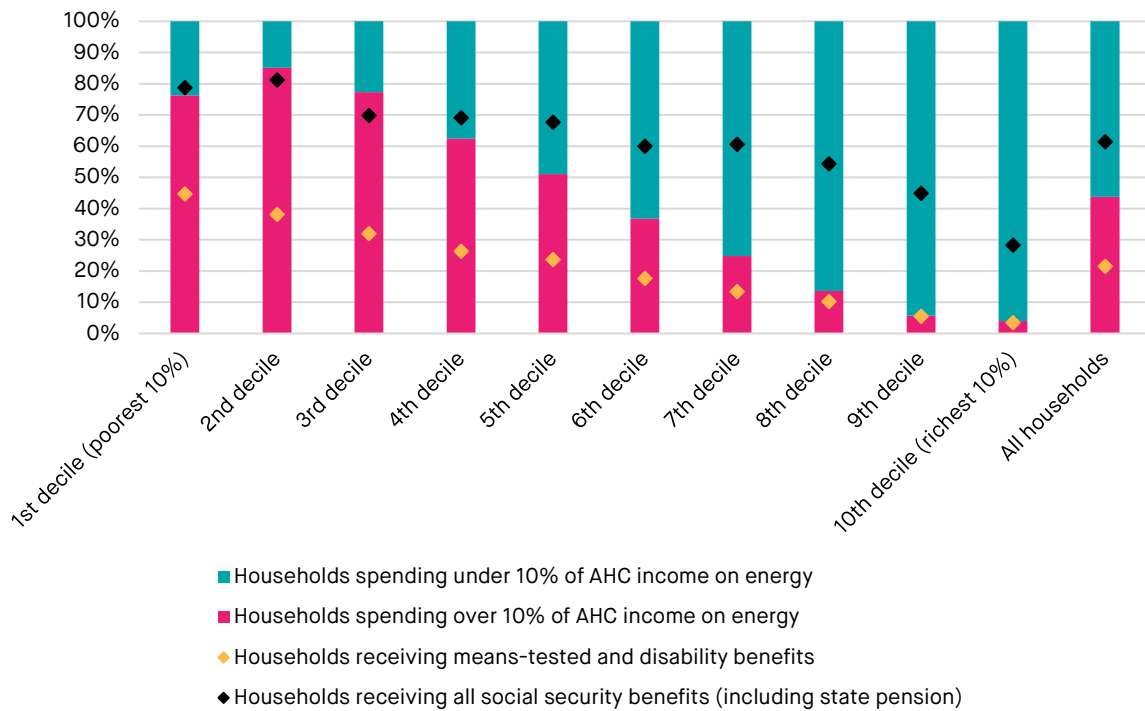
Our analysis finds that in the context of an average bill of £3,000, 12 million households would spend over 10% of their income after housing costs on energy (see Figure 5). This 10% figure was once the definition of ‘fuel poverty’ in the UK, however as noted measures now reflect the efficiency of the home as well. However, in lieu of this data for the UK, the 10% measure provides a useful picture.

Figure 5 illustrates what the picture of potential need and targeting could look like by income deciles. Our analysis shows households most likely to be missed by a means-tested and disability benefits approach to targeting are among the poorest income deciles after housing costs. Nearly half (45%) of households in the lowest income decile claim means-tested and disability benefits. By comparison, in the context of an

average £3,000 annual energy bill, the vast majority (76%) of the poorest households would face spending over 10% of their income on energy after accounting for housing costs. This is similarly the case in the poorest three income deciles where the proportion of households facing a significant hit to their disposable income more than doubles those that can be reached through the means-tested and disability benefits system. Relying solely means-tested and disability benefits criteria for delivering targeted support would be clearly inadequate and, throughout years of higher-than-average bills, would have severe consequences for poverty and inequality.

Again, broadening eligibility could be possible through the wider social security and state pension system. This could increase the number of households that could be reached to a total of 17 million. This would reach 79% of households in the lowest income decile. While this is much closer to addressing the scale of hardship for the poorest households, wealthier households would also disproportionately benefit. Under this targeting approach, around one in three (61%) of households in the highest income decile would receive government support. This would likely be politically unfavourable and economically unsustainable.

Figure 5: Proportion of households spending over 10% of their income (after housing costs) on energy compared to proportion of households that can be targeted through the welfare and pensions system, by income decile



Source: SMF analysis of Living Costs and Food Survey. Assumes an average annual energy bill of £3,000. Note: The chart is illustrative of the total households in each category – for example, not all households receiving social security benefits in the second income decile would spend over 10% of AHC income on energy.

The missing middle

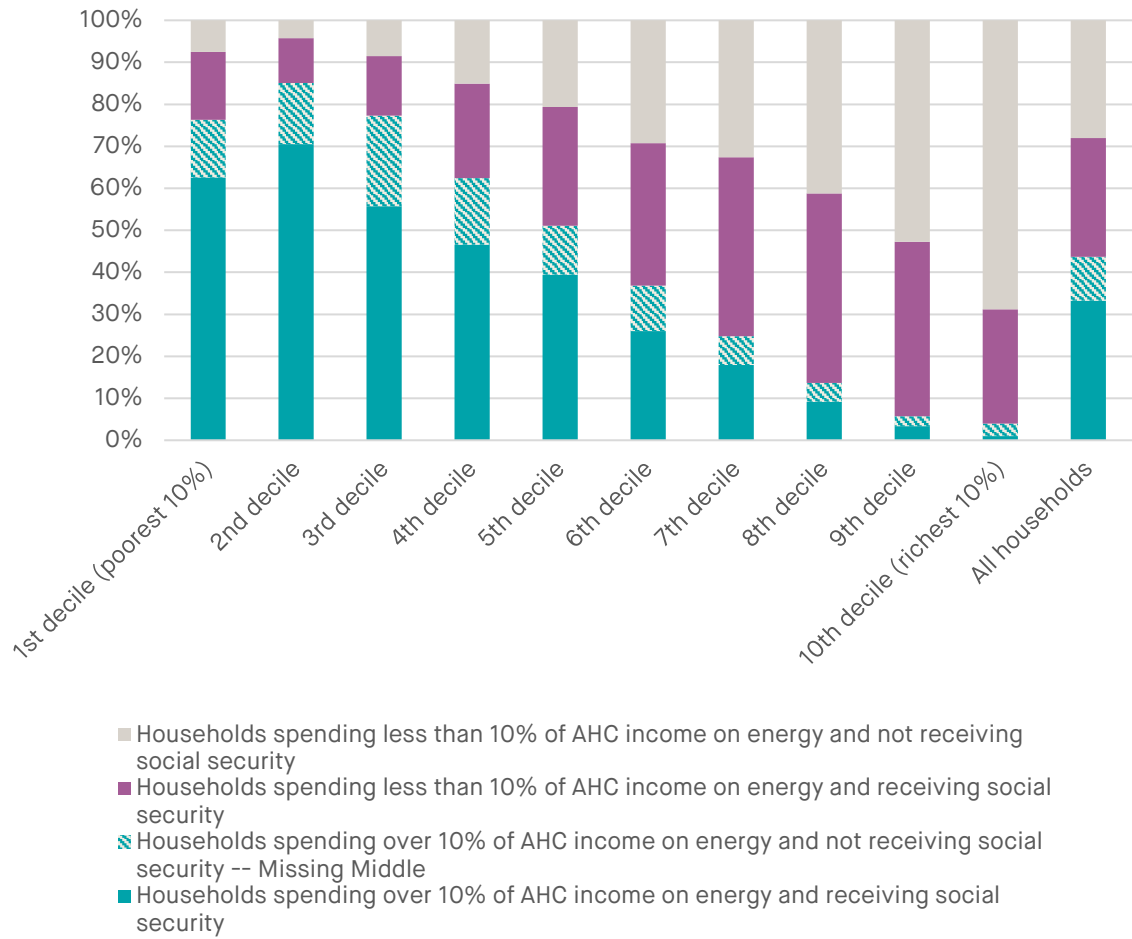
The chart above (Figure 5) provides a useful guide for the order of magnitude of households in need and that are able to be targeted. However, it does not clearly capture the extent to which these groups interact. For example, the chart would indicate that those in the second income decile are well targeted and supported, when in fact not all those receiving social security payments in this decile may also face spending over 10% of their income on energy. Below (Figure 6), we provide further analysis into these counterfactuals.

As noted, we find that in the context of an average bill of £3,000, 12 million households would spend over 10% of their income after housing costs on energy. Using survey data we are better able to estimate how many of these 12 million households are also claiming social security (benefits and/or state pension). Our analysis finds that just over 9 million of these households are in receipt of social security payments. This means that nearly **3 million households across the UK would spend more than 10% of their after-housing-cost income on energy but would be ineligible for support as they do not claim benefits or a state pension**. We designate this group the ‘missing middle’. One in five (21%) of the 3 million ‘missing middle’ households are in the third income decile and 15% are in the fourth income decile.

We are also better able to identify where a targeting approach based on social security eligibility would potentially allocate public funding to those less in-need. Of the 17 million households that are in receipt of social security, nearly half (8 million) would not meet the 10% spending threshold – this equates to nearly one in three (28%) UK households. Where poor targeting leads to ‘policy winners’ in lower income deciles, policymakers may reasonably accept this imperfect allocation of funds. However in this case, excess funds are disproportionately allocated to *higher* income deciles, which raises questions about fairness and responsible use of public money.

Consequently, using the existing welfare and social security system is not a plausible targeting method for energy price support.

Figure 6: Households spending over 10% of AHC income on energy, by social security eligibility and income decile



Source: SMF analysis of Living Costs and Food Survey. Assumes an average annual energy bill of £3,000.

Other existing mechanisms for targeting

Outside the welfare and social security system, various mechanisms for targeting help are also limited in how far they can provide adequate supportⁱ.

Based on individual income: Targeting support by income currently relies on HMRC’s data from the individualised income tax system. However, given that energy is consumed at household level, assessing need (and thus eligibility of support) requires data on household income. The needs of a household with one middle-income earner and multiple dependents would differ significantly from the needs of multiple middle-income earners. As a result, it has been suggested by the Tony Blair Institute that HMRC develops a new system based on household income to assess eligibility and entitlements. This would require households to jointly declare their income which would be administratively costly and does not guarantee effective uptake. This raises questions about whether it is necessary to change the taxation system for what may be a “temporary policy challenge”.²⁷

Based on council tax bandings: council tax may also be considered a proxy for household income. There is a precedent here – the first £150 energy rebate paid to households in April 2022 was targeted at households in bands A-D. Besides the fact that council tax property valuations are extremely outdated, the correlation between property size, income and energy consumption is far from straightforward. Using council tax to deliver energy bill help means that households with larger, potentially drafty homes and/or high energy needs may be less likely to receive support, irrespective of their income and need.

Through suppliers: As part of the Warm Homes Discount and the ECO scheme, suppliers are already involved in means-testing their customers for support. Could suppliers scale this process up and deliver targeted support to several million households? This would involve high search and administrative costs and additional data from households on their income. Already, suppliers spend a total of £40 million a year identifying and assessing households for ECO.²⁸ Beyond the practical or financial limitations, there may be political questions as to whether private companies should be delivering a function of the welfare state which policymakers would have to address. And would the public be content to share significantly more data – including, potentially, household income figures – with energy companies?

Tax clawback on universal support: Alternatively, it has been proposed that the government uses the tax system to achieve targeting. This would mean universal payments followed by taxation to claw back the money from better-off households above the eligibility threshold for energy bill support. The TBI suggests that in this sense ‘rough justice’ could be achieved by providing a universal rebate which is clawed back through a similar tax system that is used for the High-Income Child Benefit Charge. However, the limitations involve compliance challenges and perverse

ⁱ For another analysis of this challenge, see, for example, this from the Tony Blair Institute for Global Change, October 2022

incentives, as well as the familiar problem that income and energy use (and therefore bills) are not always closely aligned.²⁹

As it stands, there are no workable options for targeting energy support in the immediate future that would be adequate for addressing the scale of the challenge. Proposed policy options have tried to contend with the systems that we currently have available to provide imperfect solutions in a timely and cost-effective manner. While this may be reasonable over the short-term, in the longer term 'rough justice' will likely become politically untenable, as years of poor targeting culminate in inequality and/or waste.

It is also notable that most mooted targeting options are based on income. This is reasonable as income is a significant predictor of fuel poverty, but the efficiency of a home matters too. Bills reflect not only the price of energy, but the volume of units consumed - less efficient homes require higher consumption for the same energy needs. But the relationship between efficiency and income is not straightforward - there are about just as many homes rated EPC D and below in the poorest decile (1.5 million) as there are in the richest (1.4 million).³⁰ Existing and past schemes for energy efficiency have relied on means-tested benefits data and supplier searches to identify low-income low-efficiency homes or voluntary applications from households. However, neither approach has sufficiently addressed the scale of the challenge that is improving the efficiency of the UK's homes.

A social justice approach to targeting support would also need to address this - albeit the mode of delivery for support may be different. Whether that is a long-term insulation scheme or price support, efficiency must be considered when identifying and assessing households.

We need to build a better system for identifying and assessing household need that is sustainable not just for the rest of the decade, but for the wider transition to net zero energy and homes by 2050. This is a necessary precondition of any future policy for targeted energy support.

A new system for identifying and assessing household need

This challenge of identifying households in need is not unique to the energy sector. Citizens Advice, the sponsor of this report, has considered similar challenges in water, financial services and telecommunications sectors, as well as energy³¹.

While this report is about energy policy, we note the case for better identification mechanisms in other sectors. The challenge of identification in the energy sector could be addressed individually or in a wider initiative that would also encompass some or all of those other sectors.

Whatever choice is made there, we argue that the need we identify for better targeting of energy bill support should be met via some sort of independent non-departmental public body equipped to take an empirical, non-political and longer-term approach.

Long-term stubborn challenges, such as addressing fuel poverty and insulating our homes, require leadership that is independent from political motivations and private interests, and can work across various levels of government as well as departments

and agencies. Much as the Office for Budget Responsibility has done for fiscal policy and the Committee on Climate Change has done for climate policy, a new targeting body would set out credible public analysis of the energy bill landscape, allowing ministers to make policy choices on the basis of evidence and allowing observers of all sorts to hold informed debates about energy bill policy.

The targeting body's statutory remit would include price support and energy-efficiency measures, and involve four core functions:

1. **To create new criteria for assessing households.** This would include reviewing the existing proxies by which households are assessed for targeted energy support and identifying what data points are missing for a new system based on households' energy needs and their ability to afford it.
2. **To collect relevant data for the assessment criteria.** This would require access to existing data from various departments including HMRC, DWP, DLUC via VOA, and BEIS via Ofgem, as well as gathering new data such as household income or missing property data.
3. **To identify which households meet these criteria.** The Commission could either then share household details with departments for targeting support or for privacy reasons, could issue support directly to households with relevant department funding.
4. **Establish the quantum of support required.** A system that better reflected the varying needs of households would allow for more varied levels of support and avoid harsh cliff-edges. The Commission would establish what level of support would be needed for households that met the criteria – for price support this may be a financial value whereas for energy-efficiency this may be specific improvement measures.

The Chancellor's Autumn Statement 2022 included the announcement of a new Energy Efficiency Taskforce (EETF) which "*will be charged with delivering energy efficiency across the economy*".³² This is a welcome step for policy delivery; however, this does not address the wider challenges of targeting energy bill support. It remains to be seen how the taskforce will operate in practice with existing schemes and devolved authorities. Furthermore, it is unclear when the taskforce is expected to begin, given that the associated funding is not committed until 2025. Policymakers should consider how the EETF may interact with a Commission on building a better system for identifying need and delivering support for energy bills.

Key data may include household income, energy efficiency ratings, energy consumption, household size, household composition, and vulnerability (e.g. disability or long-term sickness). Crucially, for the energy-efficiency assessment, data on the prevalence of individual insulation measures (lofts, walls, windows etc.) would be necessary. Property details such as the property value and the build date or listing should also be included to test for cost-effectiveness and feasibility. As noted, much of this data exists already across different departments. Where it does not, the Commission may request that households voluntarily submit information (e.g. on household income) or that bodies such as the VOA undertake further property assessments (e.g. where EPCs are missing).

Understandably, accessing more data from households raises concerns about privacy. There is a potential political difficulty to a body gathering such data as it may be deemed intrusive. Politicians could help here by ensuring strict safeguarding measures are in place and by having an honest conversation with the public about the need for better data. The longer that the government relies on poor methods of targeting (by way of poor data), the greater the number of households that will miss out on much-needed support and the more public money wasted on those who do not need it. More accurate data enables better targeting which ultimately delivers better outcomes for the most vulnerable households and all UK taxpayers.

This is not a new model. The functions of our proposed targeting body are not dissimilar from previous independent bodies. Examples include the Pension Commission under Adair Turner. Another is the Child Maintenance and Enforcement Commission (CMEC), which improved assessment, collection and enforcement processes, corresponding to the broad aims of our other three functions. This can provide a guide for the administrative costs of such a body. In its last full year of running in 2011/12, the net operating costs of the CMEC totalled £484 million (£563 million in 2021 prices).³³ Reasonably, a significant proportion of these costs would be related to enforcement, which would not be required of the Energy Support Commission. As such, the overall costs would be expected to be lower. This would still likely be notably higher than the current annual search costs of a scheme like ECO (£40 million a year). However, the investment in the new targeting body would remove the need for ongoing search costs by energy suppliers for individual policies, as well as reduce the social and health costs related to ‘missed’ households.

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CHAPTER FOUR – FINANCIAL SUPPORT

Much of the emergency response has comprised short-term demand-side price support (e.g. £400 Energy Bills Support Scheme and the Energy Price Guarantee) and long-term supply-side reform on generation and pricing. However, there is a need to review what *long-term* demand-side price support could be available to households.

In our political and industry engagement we found a consensus that some financial support specific to energy bills should be provided. This was matched in our public polling. The idea of financial support for households who struggle to pay their energy bills was supported by 73%, with just 9% opposition. Younger respondents were more likely to be supportive and less likely to be opposed than older respondents.

Even when the suggestion that this support might require additional taxation is raised, there was still strong support. In our June opinion poll, we asked “To what extent would you support or oppose the government providing direct financial support to help poorer households with their energy bills, such as an ongoing discount on their monthly bills, even if this means taxes rise as a result?”. In June we found 52% supportive and 22% opposed.

We repeated this exact question again in our October poll and found 64% supportive and 15% opposed. It is possible that the scale of recent energy bill increases has persuaded more people to see the benefit of providing financial support, even if that means higher taxes.

In our industry stakeholder roundtables we heard broad agreement that this support should be a “social tariff”; that term is also used in the Autumn Statement’s commitment to develop a “new approach” to bill policy. But it is striking that different participants in our engagement – and across the sector more widely -- use this term to mean very different things. Historically this was most likely to refer to a different pricing schedule for a set of eligible customers, but some used the phrase to mean something closer to the current Warm Home Discount. Instead the phrase “social tariff” seems to be increasingly used to mean simply that some sort of financial support should be given through energy bills.

In our discussions with stakeholders we have identified four main options for delivering energy bill support:

- 1. A fixed-value bill discount, akin to the existing WHD**
- 2. A discount applied to unit rates**
- 3. A rising block tariff**
- 4. A real bill cap**

To complicate matters further, some have proposed models that combine two or more of these options (e.g. a rising block tariff to deter high consumption, offset by a fixed bill discount to ensure the less well-off do not lose out financially). And within each model there are additional questions to be answered about eligibility criteria and the quantum of support.

In this chapter, we present an analysis of these four main policy options including estimated costs, distributional impacts on households, and their wider advantages and limitations. Our modelling of the policy options is based on analysis Living Costs and Food Survey data from 2019/20. The quantum of support modelled across the policy options is of similar value and is informed by desk research analysis, public polling, and stakeholder engagement. In percentage terms this is equal to a 30% reduction in bills. In cash terms, this equates to around £900 for an average annual household bill of nearly £3,000.

Our earlier analysis showed that with bills at £3,000, some 12 million homes will struggle with costs, a group much larger than the 6 million households in receipt of welfare payments. Here we model a number of policy options that would extend financial support beyond those 6 million welfare-recipient households, but would still not help to all 12 million.

This is because since we are mindful of the fiscal cost and political practicality of energy policy. Instead, we model policies that would extend help to households with overall incomes below £25,000 who are not in receipt of benefits or the state pension. Policies based on that criteria would reach most but not all of the 12 million, at costs we think are likely to be considered reasonable by policymakers.

Here a note on methodology is required. Changes in energy prices can result in behaviour change. At this stage of our work, our modelling does not account for price elasticity and subsequent changes in consumption due to the lack of relevant elasticity figures for such high prices. However, we recognise the importance of how different policy options create different incentives for demand. As a result, our final report will include further analysis which accounts for dynamic responses to policy.

More details on the methodology can be found in the annex.

1. Fixed payment discount

Perhaps the simplest model is one that gives a cash discount to eligible households. This is the model that has been used in the UK since the introduction of the Warm Home Discount (WHD) in April 2011. The WHD currently provides a £150 rebate to around 2.8 million lower-income and vulnerable households in England and Wales. The recent temporary £400 Energy Bills Support Scheme also uses this model. The advantages of this delivery model include its simplicity. In recent years government data matching has meant that the vast majority of 'Core Group' beneficiaries receive their rebate automatically and without having to apply for it.

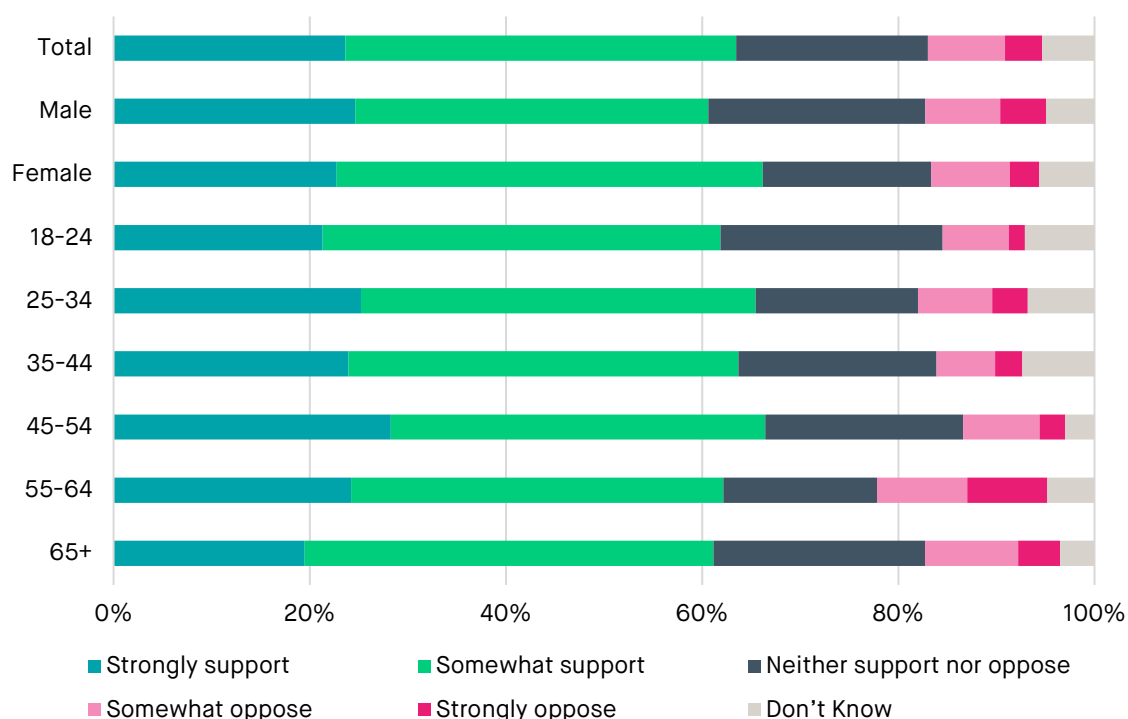
Unlike a per-unit percentage reduction which continually discounts all units consumed, a fixed payment has a clear 'endpoint'. As such, a fixed discount also does not blunt the incentive to reduce consumption. There is also a sense of fairness about all eligible customers receiving the same benefit.

However, there is a concern that this model comes with steep and high cliff edges. Two households could have weekly income that differed by just £1 and yet one would be eligible for a discount and the other not. Given the way WHD currently interacts with the benefit system, it would not be possible simply to taper the energy bill discount away with rising income. Still, a different set of eligibility criteria could be designed that would allow such smoothing, as modelled below.

Fixed discounts also do not take account of whether an eligible household has specific needs, including for example disabilities or medical conditions, which could require them to use more energy. This model does not reflect the energy efficiency of the home.

Our focus groups were in favour of financial support being in the form of a bill discount, which participants felt ensured the money really did go on energy rather than other priorities. Our polling found the public were supportive of this model of delivery, across demographic groups.

Figure 7: Support for a direct cash discount on bills



Source: Public First survey. Survey question: “One way to provide support to eligible households would be a direct cash discount on bills. To what extent would you support or oppose this idea?”

We asked in our polling what the value of financial support for energy bills should be. Among those who thought there should be a support scheme, there were mixed responses to how much support should be provided. 41% chose a support level below £60 a month. And 42% chose a support level of £60 a month or above. The mean value of support chosen was close to £1,000 a year when the question was expressed in £ terms – a third (33%) of an average energy bill of £3,000.

But when expressed as a percentage of the bill the average was around 27%. In a scenario of historically ‘normal’ energy bills, this would suggest a support level of around £300. A £300 support level applied to the same 2.8m households currently in receipt of the Warm Home Discount would cost between £840m and £950mⁱⁱ. However, in the context of an annual average bill of £3,000, a 27% amount would equate to around £800 of support. This would cost around £4.62bn based on an eligibility of means-tested and disability benefit claimants.

For context, at present the Warm Home Discount scheme provides £150 of support for eligible households. The government argues that this level strikes “*a balance between supporting as many households as possible... with providing meaningful support*”.³⁴

Options for a fixed payment policy

The cost and impact of a fixed payment policy would depend on the value of the payment, how it is targeted (if at all) and energy prices. The table below provides an aggregate picture of potential options based on an average annual energy bill of around £3,000. In line with the polling findings, the annual value of fixed payment support is set at £900 – the average of the £ and % amount selected by polling participants.

As with the WHD, we envisage this payment would be paid to suppliers who would then add the payment value as a credit to the household’s account.

A universal approach to bill support is highly unlikely to command durable political or public support but the option is included in our analyses for transparency. Targeting bill support at means-tested and disability benefit claimants would cost the Exchequer £5.2bn per year. As highlighted in Chapter Four, targeting by means-tested and disability benefits accounts for around a fifth (22%) of all households and around a third (38%) of households in the poorest three income deciles. As such, policymakers may wish to target support at pensioners (total cost of £7.8bn) or those on below median household incomes (£8.9bn). Reasonably, targeting by income sees the greatest energy bill reductions for the average household in the poorest deciles. This is also in part because the overall number of households targeted is greater.

ⁱⁱ The lower bound assumes no cost to deliver, the upper bound is extrapolated from the WHD.

Table 1: Impact and fiscal cost of a fixed payment policy options

	Number of households 'policy winners'	Average value of government support for 'policy winners'	Annual fiscal impact of policy (cost to HMT)
Annual fixed payment of £900			
Targeted at all households claiming means-tested and disability benefits	5.8 million	-£900	-£5.2bn
Targeted at all households with one person aged 65+	8.7 million	-£900	-£7.8bn
Targeted at all households with a household income of less than £25,000	9.9 million	-£900	-£8.9bn
All households	27.2 million	-£900	-£24.5bn

Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

As previously noted, there is a risk of creating sharp cliff-edges which can engender perverse incentives for work and earnings. An imperfect but potential method for better mitigating this risk would be to have a tiered approach to a fixed payment, whereby multiple payment options are available: higher payment for a more 'in-need' targeted group and a lower payment for a secondary targeted group. This would not remove all perverse incentives, but would be more effective than a method of support. It may be reasonable to have further tiers, however, stakeholders cautioned against complexity to reduce the administrative burden on officials and to make it easier for households to engage with.

Given the vulnerability of those claiming means-tested and disability benefits, it would seem reasonable to provide these households with a higher value of payment. The table below provides an idea of a tiered approach and its cost.

A tiered fixed payment policy would cost a total of £6.7bn for 8.3 million households.

Table 2: Impact and fiscal cost of a tiered fixed payment policy

	Number of household policy 'winners'	Average value of government support for 'policy winners'	Annual fiscal impact of policy (cost to HMT)
Primary group: annual fixed payment of £900			
Targeted at all households claiming means-tested and disability benefits	5.8 million	-£900	-£5.2bn
Secondary group: annual fixed payment of £600			
Targeted at households not claiming means-tested or disability benefits with a household income of less than £25,000	2.5 million	-£600	-£1.5bn
Aggregate tiered policy option	8.3 million	-£811	-£6.7bn

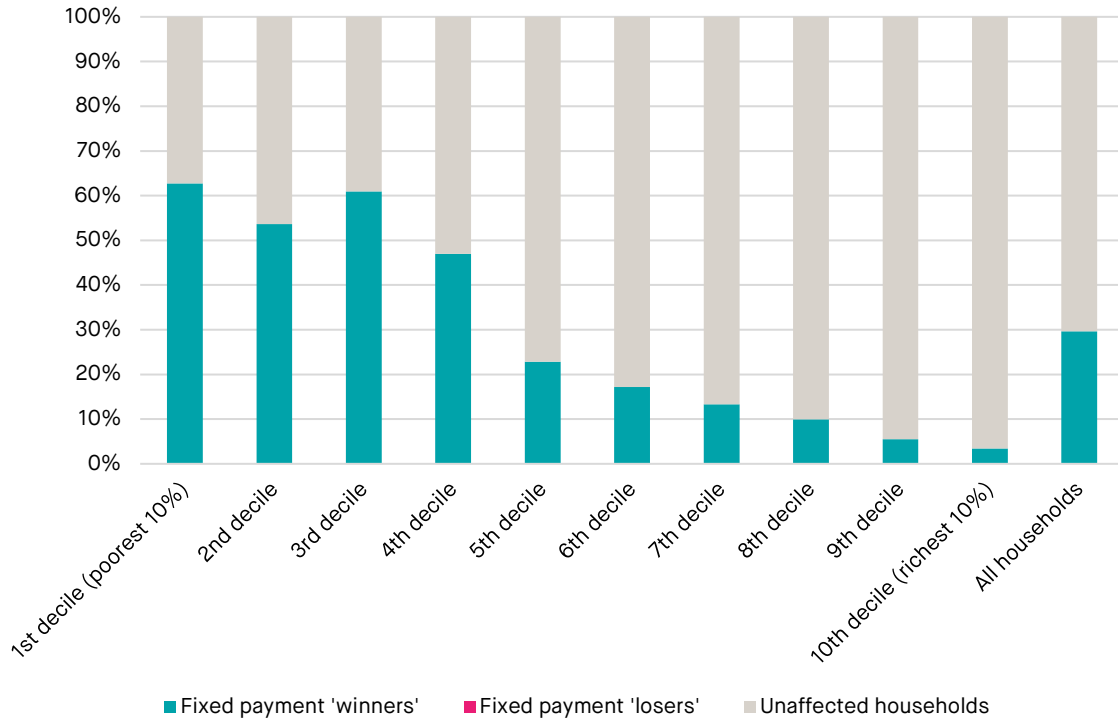
Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

Distributional impact

Policymakers must also consider what the distributional impact of a fixed payment policy may be on different households. The breadth of this impact (number of households affected) is highly dependent on how a policy is targeted while the depth of impact (reduction in energy bills) is more dependent on the value of support provided and energy prices.

The figures below illustrate what the impact of a tiered fixed payment policy might look like across income deciles. In terms of the breadth of the policy, of the 8 million households that would receive a payment, the majority (60%) are among the poorest three income deciles. As discussed later in this chapter, we assume that this policy would be paid for through general taxation. As a result, households who do not receive policy support would not see their energy bills increase in order to pay for the policy - we designate that these households are therefore unaffected.

Figure 8: Proportion of households affected by a tiered fixed payment policy, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

In terms of the depth of impact, Figure below shows the aggregate reduction in the average energy bill per income decile as a result of the policy. Over half (58%) of the overall value of government support would be focused on benefiting the bottom three income deciles while 7% of overall support would benefit the top three income deciles.

Figure 9: Aggregate value of government support for tiered fixed payment policy 'winners', £bn, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

2. Unit rate discount

The second option is to discount the rate charged for each unit of energy used by an eligible household. This was a common model of social tariffs in the years before the WHD was introduced. It is very similar to the design of the government's current Energy Price Guarantee, although the latter scheme is universal.

A discounted unit rate provides a greater value of financial support to households that consume more energy. But in doing so it also somewhat blunts the incentive to consume less energy or to insulate one's home better.

One concern about social tariffs pre-2011 was that they took customers out of the competitive market. While in theory these customers were getting a special rate, for example discounted below the standard variable tariff, this was not necessarily the cheapest rate on the market.³⁵ These social tariffs gave customers the sense that they did not need to switch provider in order to get the best deal. And suppliers had a reduced incentive to market to these customers. The result, it can be argued, was that low income and vulnerable customers did not receive the full benefits of competition.

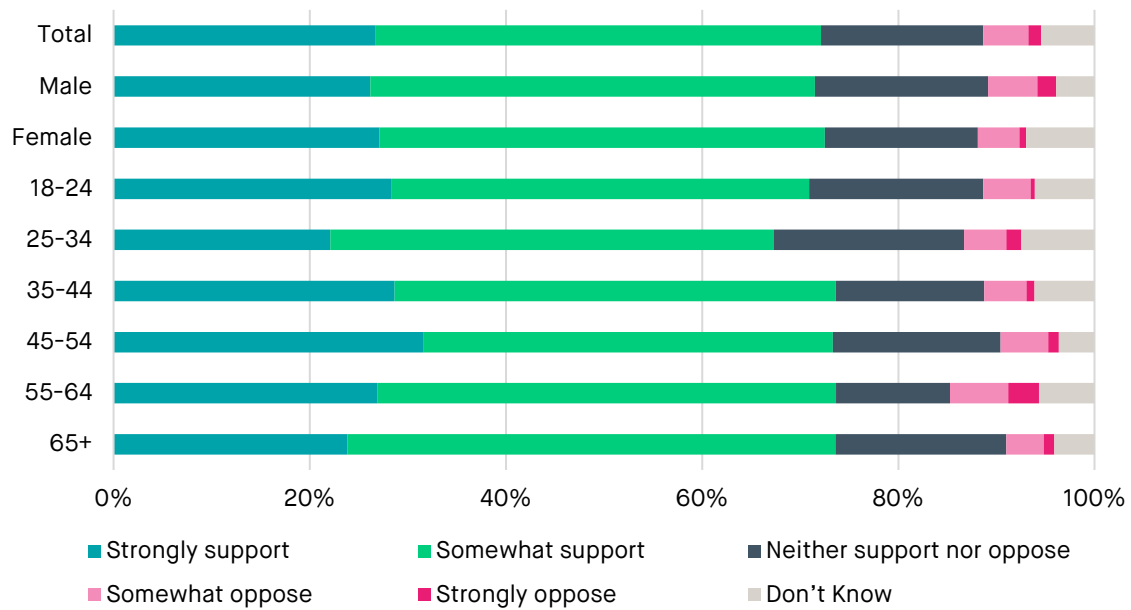
The Resolution Foundation (RF) has called for a "social tariff" that is essentially a tiered unit rate discount policy.³⁶ RF's proposal consists of a 30% bill reduction to all households where no-one earns more than £25,000 and a 12% bill reduction to households where no-one earns over £40,000. RF analysis indicates that the policy would result in 94% of the poorest half of households benefiting compared to 45% if entitlement was limited to those on benefits.

In our focus groups we heard support for discounts generally, but also concern that this should reflect the number of people living in a house or other household circumstances.

"I think it should vary on how many people live in your house... because the more people that live there, you'll use more energy" (Wakefield)

Our polling found the public were supportive of this model of delivery. 72% of all adults supported a unit rate discount, with only 6% opposed. Support was strong across demographic groups; indeed this was the most widely supported of the four options presented.

Figure 10: Support for a unit price discount



Source: Public First survey. Survey question: “One way to provide support to eligible households would be to discount the unit price of the energy they consume. To what extent would you support or oppose this idea?”

Options for a unit rate discount policy

A flat 30% discount on unit rates is in line with public opinion on the average level of support and similar to the payment modelled in our previous section. Accounting for behaviour change in response to above average energy prices, this would offer around £922 of support for a median household. However, overall costs are higher as the discount is applied to every unit consumed. The reach of the policy is similar as the fixed payment model set out previously, since we assume the same eligibility criteria as before.

Table 3: Impact and fiscal cost of a unit rate discount policy options

	Number of household policy 'winners'	Average value of government support for 'policy winners'	Annual cost to the Exchequer
Unit discount rate of 30%			
Targeted at all households claiming means-tested and disability benefits	5.8 million	-£947	£5.5bn
Targeted at households with one person aged 65+	8.7 million	-£900	£7.81bn
Targeted at households with a household income of less than £25,000	9.9 million	-£808	£8bn
All households	27.2 million	-£922	£25.1bn

Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

A variation on this policy would be to take a tiered approach, giving different levels of unit discount to households dependent on their status or income. This tiered approach would help smooth the cliff-edge problem of a flat discount and is arguably more progressive in that it offers the greatest help to those with lowest incomes. And offering an additional tier of help to people above the threshold for benefits makes the policy means greater reach: offering a 20% unit rate discount to non-welfare households with incomes below £25,000 would mean another 2.5 million people get help with bills. This adds around £1.2 billion to the cost of the policy. As our model does not account for behaviour change at this time, it is possible these costs could be higher as some of those households increase their energy use in response to their energy becoming cheaper.

Table 4: Impact and fiscal cost of a tiered unit discount rate policy

	Number of household policy 'winners'	Average reduction to energy bills for policy 'winners'	Annual cost to the Exchequer
Primary group: unit discount rate of 30%			
Targeted at all households claiming means-tested benefits	5.8 million	-£947	£5.5 bn
Secondary group: unit discount rate of 20%			
Targeted at households not claiming means-tested or disability benefits with a household income of less than £25,000	2.5 million	-£485	-£1.2bn
Aggregate tiered policy option	8.3 million	-£809	-£6.7bn

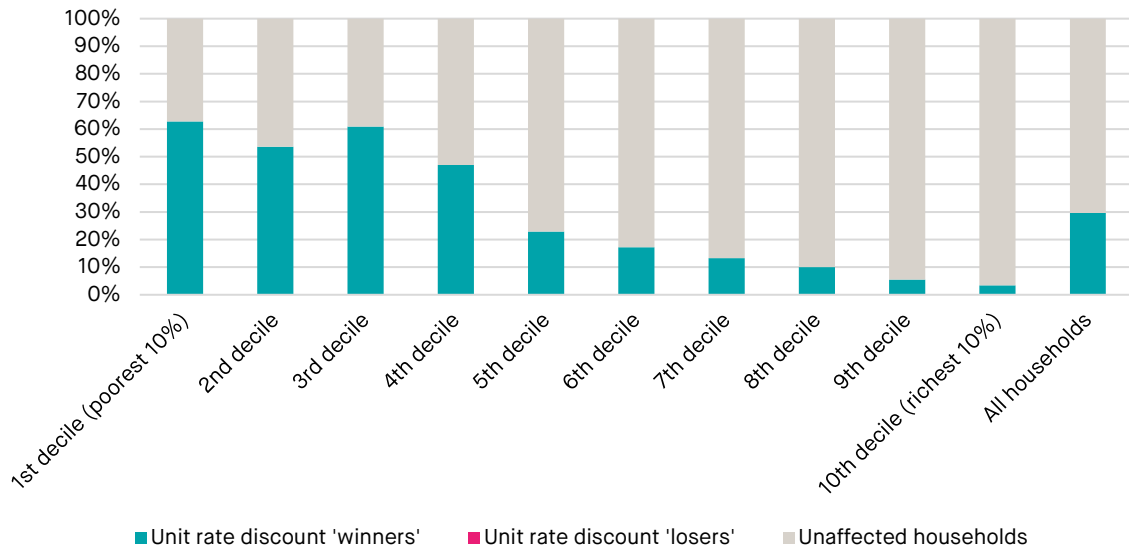
Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

Note that the value of this discount to our secondary group of households (non-welfare claimants with low incomes) is lower than the value to that group of a fixed payment shown in Table 2. This is because the value of the unit-based discount varies with energy usage, and there is a wide spread of usage levels within the secondary group.

Distributional impact

The breadth of impact for this policy is identical to the fixed payment given their shared approach to targeting. With a tiered unit rate discount, around 60% of policy 'winner' households are in the bottom three income deciles.

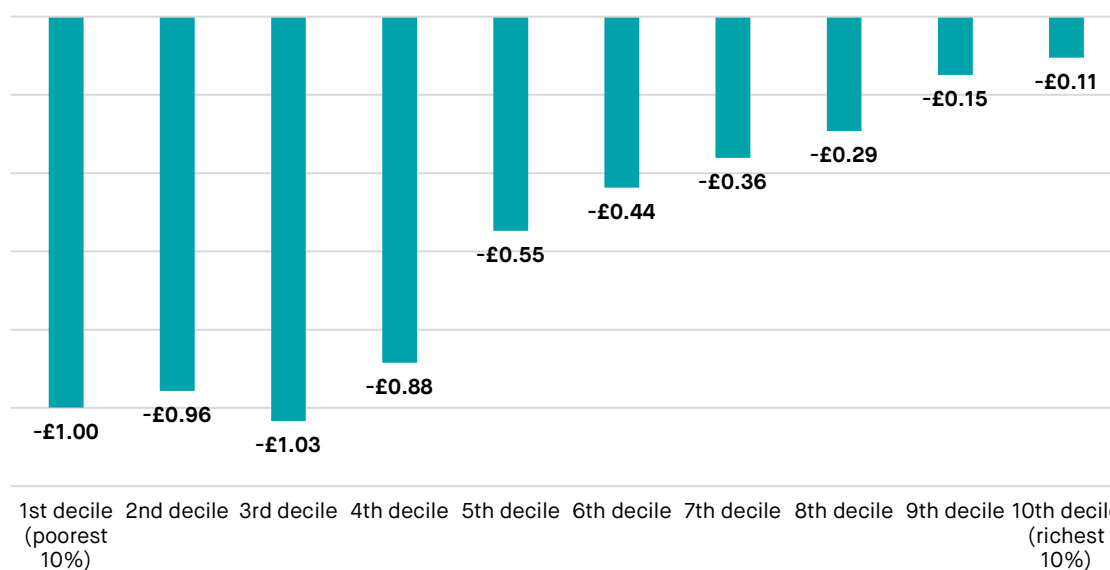
Figure 11: Proportion of households affected by a tiered unit discount rate policy, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

In terms of the depth of impact, Figure shows the aggregate reduction in the average energy bill per income decile as a result of the policy. Despite being of similar value and breadth as the fixed payment policy, a unit discount rate would be less progressive in allocating funds. Some 52% of overall policy costs would go to help the bottom three income deciles, compared to 58% under the £900 fixed payment policy. Meanwhile 9% of policy costs would go to the top three income deciles (compared to 7% under fixed payment). As such, this policy is more generous to middle- and high-income households, reflecting the *median* trend that higher income households have higher energy consumption. Variations within income deciles are explored in the next section on rising block tariffs.

Figure 12: Aggregate reduction in energy bills for a tiered unit rate discount policy ‘winners’, £bn, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

3. Rising block tariff

A rising block tariff is one that charges consumers an increasing unit rate as their consumption increases. The first units of energy are usually heavily discounted or perhaps free - reflecting a customer’s basic needs. Higher bands can then be charged as the household consumes more units. This policy is sometimes compared to tax allowances, where a person can earn a certain amount without paying tax on that income, but then faces increasing tax rates as income rises.

In theory, a rising block tariff could have rates increasing on a sliding scale, but in practice the more common design incorporates three consumption bands, each with its own unit price.

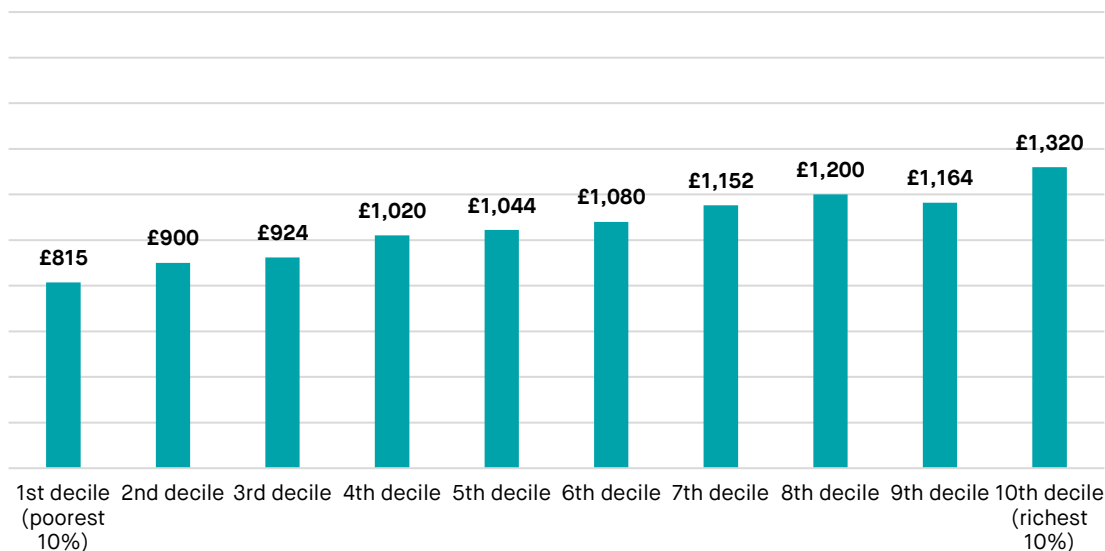
In 2008, the government of Dubai introduced a “slab tariff” on monthly electricity and water consumption in order to promote more efficient use of utilities and conservation.³⁷ In the residential market, the electricity tariff includes four consumption (kWh/month) “slabs”. The design of the tariff has not changed since its introduction and Dubai officials are reported to believe there will not be a need to increase the lower-cost bands in response to the global gas crisis.³⁸ Learning lessons from this policy is challenging given the limited literature on the distributional impact of its design; the Dubai authorities have disclosed relatively little about the policy and its workings.

In our consultations, one frequently cited reason to support a rising block tariff is that it sharpens the incentive for higher-usage households to reduce their consumption, either by behavioural change or energy efficiency measures. In our stakeholder engagement, we heard arguments in favour from people and groups concerned with the environmental impact of energy consumption. But others noted the risk of penalising those who have high consumption for example due to a medical need or a disability. Another challenge here is that by providing lower rates at lower levels of consumptions, a RBT could actually create incentives for low-use households to *increase* usage since the marginal cost of consuming more energy in the low-price bands is more affordable.

Others have proposed rising block tariffs on the basis of fairness, or progressivity. As one stakeholder framed this argument, someone sufficiently well-off enough to be heating their swimming pool should be paying a higher rate for their energy than a low-income customer worrying about the cost of heating their home at all. The New Economics Foundation has recently proposed a version of the rising block tariff in which an allowance of “free basic energy” is given to all households, with a “premium” rate being charged for consumption above this level.³⁹

It can be argued that this policy is progressive. At the median level, since there is a correlation between income and household energy consumption. And plotting the median consumption of households in each decile would show an upward trend.⁴⁰

Figure 13: Median annual energy costs by income decile, £

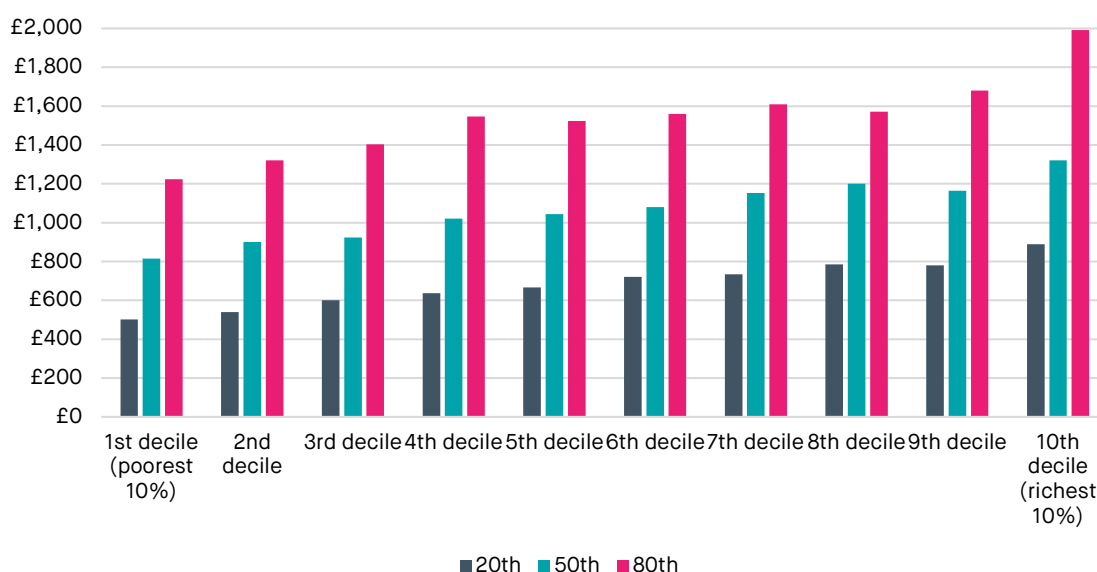


Source: Public First analysis of Living Costs and Food Survey 2019/20

However, that median-level analysis masks important variations in household energy use, which significantly weaken the case for rising block tariff policies. Simply put, some of the poorest households use large amounts of energy, and some of the richest households use small amounts. So a rising block tariff could see some poor users paying higher prices for energy than some rich ones.

These variations in usage within income deciles are set out below.⁴¹

Figure 14: Annual energy cost percentiles, within income decile groups



Source: Public First analysis of Living Costs and Food Survey 2019/20

The spread of energy costs is such that the top 20% energy consumers within the second decile by income spend more on their energy than the median consumer in the richest decile. This spread means that while a rising block tariff would have a (small) progressive effect across the population as a whole, some of the very poorest in society would suffer significant financial loss.

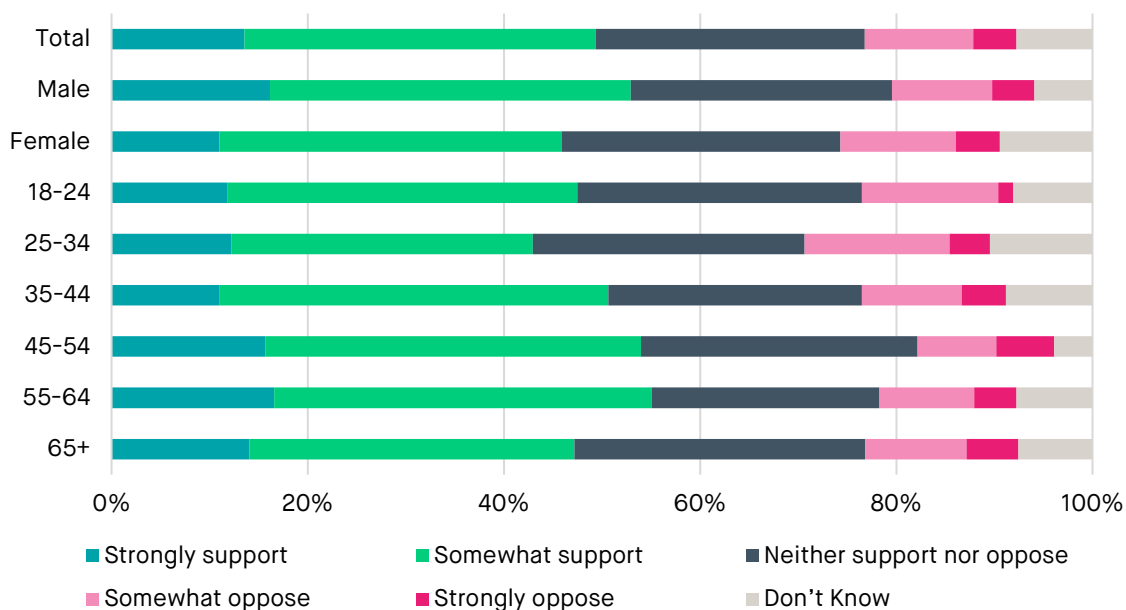
Consider, for example, a simple rising block model that gave 80% of median consumption away for free and recouped the total cost of household energy from units consumed above this level. Assume also no behavioural change in response to these prices. Then the 80th percentile consumer in the second lowest income decile would see their energy bill rise by 29%.⁴²

As the aim of this report is to consider policy options for supporting households in more normal times, we have used here data that relate to energy costs before the recent price shocks. Upated to current energy bills these differences would be significantly starker.

The nuance of variations in energy use within and between income deciles is complex and not easily visualised. By contrast, the broad principle of the rising block tariff (the more you use, the more you pay) is simple to grasp and appeals to common notions of fairness.

Perhaps as a result, rising block models can be popular. In our polling we found 49% of adults supported this model, with 15% saying they opposed it. Net support was lowest among those aged 25-34. Net support was also significantly influenced by social grade, with a net support score of 42% among AB respondents but only 23% among respondents in social grade DE. Support was also lower among those who either voted Labour or did not vote in 2019.

Figure 15: Support for a rising block tariff



Source: Public First survey. Survey question: “One way to provide support to eligible households would be to charge less for the first units consumed and charge more as consumption increases. To what extent would you support or oppose this idea?”.

Options for a rising block tariff policy

Next, we model a rising block tariff policy. In practice, blocks might be demarcated in units of energy, meaning households pay one rate for the first x units consumed, then a higher rate for the next x units. However, because of data availability - and to ease comparison - our modelling here uses blocks based on spending. This means a household’s first £500 of spending on gas and first £500 spending on electricity would buy x units at a 50% discount on current market prices. The next £500 of units for each energy type (gas and electricity) would buy units at a 22% premium over current prices.

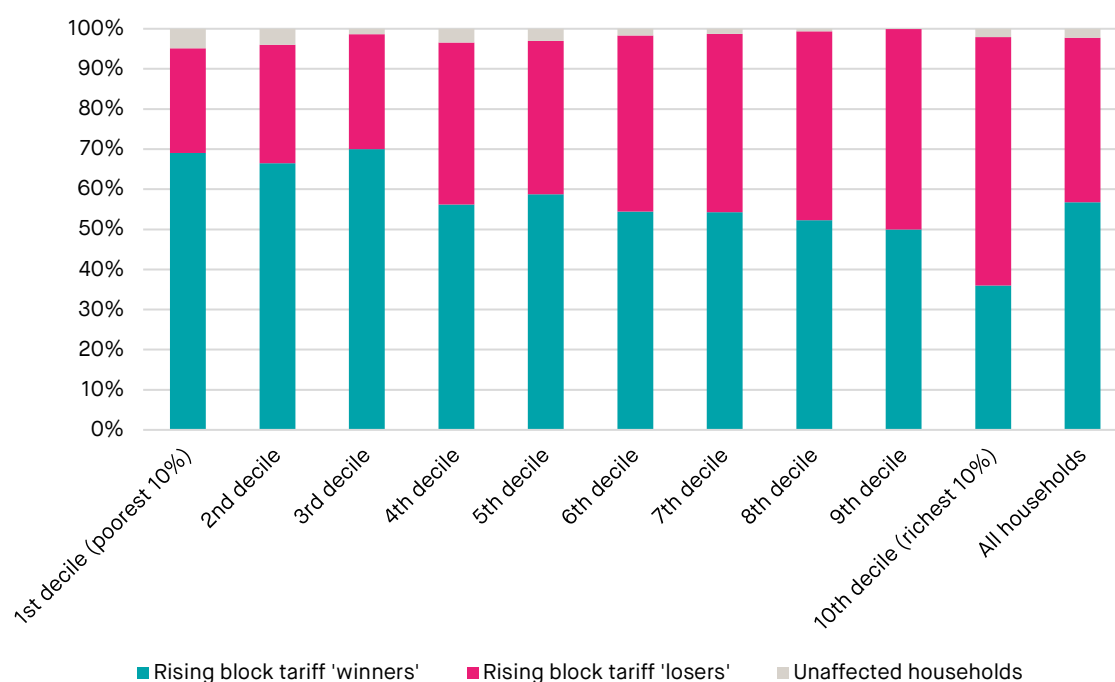
Despite this approach to data, this modelling still allows the costs and distribution of a rising block tariff to be illustrated. The policy is modelled as being close to revenue neutral – it is assumed that the cost of discounted blocks is met by suppliers (which would likely be passed onto billpayers) rather than the government.

Table 5: Impact and fiscal cost of a rising block tariff options

	Number of household policy 'winners'	Number of household policy 'losers'	Average reduction to energy bills for policy 'winners'	Average increase in energy bills for policy 'losers'	Annual impact on aggregate bills (cost to billpayers/suppliers)
Rising block tariff					
All households	15.8 million	11.4 million	-£198	+£318	£0.58bn

Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

When it comes to distributional analysis, despite a broadly progressive impact profile, this form of rising block tariff still creates a significant proportion of losers (2.3 million households compared with 5.7 million households) in the lowest three income deciles.

Figure 16: Proportion of households affected by a rising block tariff, by income decile

Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

As described earlier, variations in energy usage between households of similar incomes mean a rising block tariff creates disparate outcomes within income bands: with this policy, there are winners and losers at all income levels.

Figure 17: Aggregate impact of rising block tariff on energy bills, £bn, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

An average policy ‘loser’ with high consumption in the lowest income decile would see their bills increase by an average of around £300 while a low income policy ‘winner’ would see their bill be reduced by an average of around £240.

While there is a smaller proportion of them, a high-income policy ‘winner’ would see bills fall by an average of around £160. Higher-income policy ‘losers’ would see an average increase of around £440.

This may be narrowly progressive in that the highest costs fall on the highest earners. However, it may also be unfair on low-income/high-usage households, a group that is likely to contain people with disabilities and health conditions associated with higher energy use and/or highly energy-inefficient homes. A policy that *increases* energy costs for poor, sick people in cold homes cannot be viable.

To mitigate this, the rising block tariff could be supplemented with a targeted fixed payment for those with higher energy needs. An illustration, based on those claiming means-tested and disability benefits, follows.

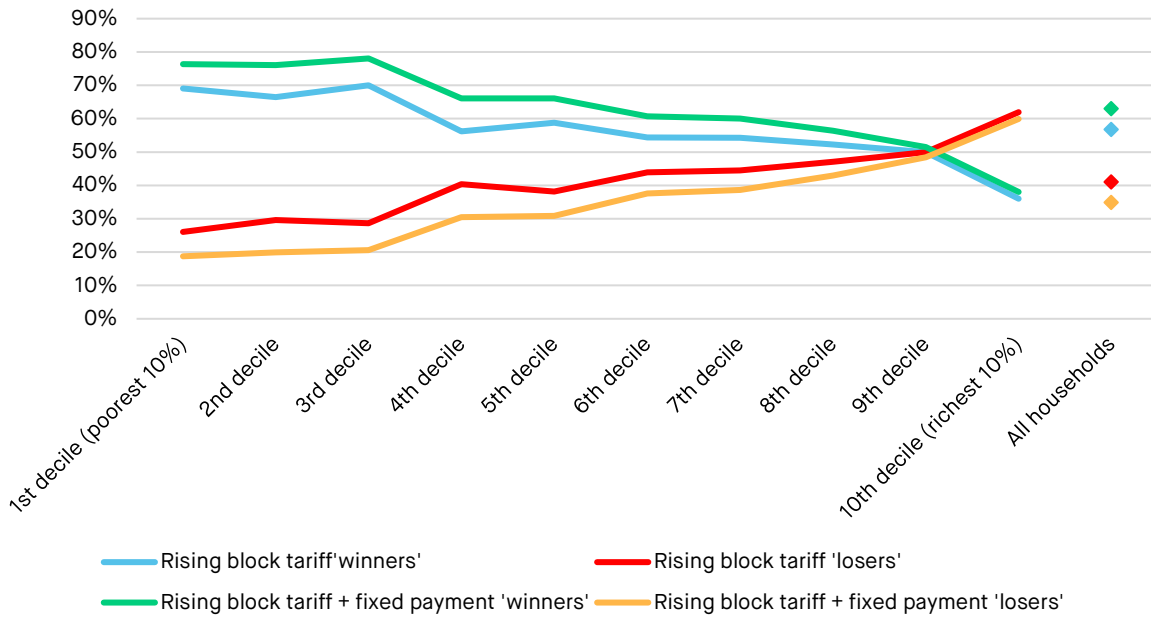
Table 6: Impact and fiscal cost of a rising block tariff + fixed payment options

	Number of household policy 'winners'	Number of household policy 'losers'	Average reduction to energy bills for policy 'winners'	Average increase in energy bills for policy 'losers'	Annual cost to billpayers/suppliers	Annual cost to the Exchequer
Rising block tariff						
All households	15.8 million	11.4 million	-£198	+£318	£0.58bn	-
Targeted group: annual fixed payment of £400						
Targeted at all households claiming means-tested benefits	5.8 million	-	-£400	-	-	£2.31bn
Aggregate rising block tariff + fixed payment option	17.5 million	9.7 million	-£276	+£311	£0.58bn	£2.31bn

Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

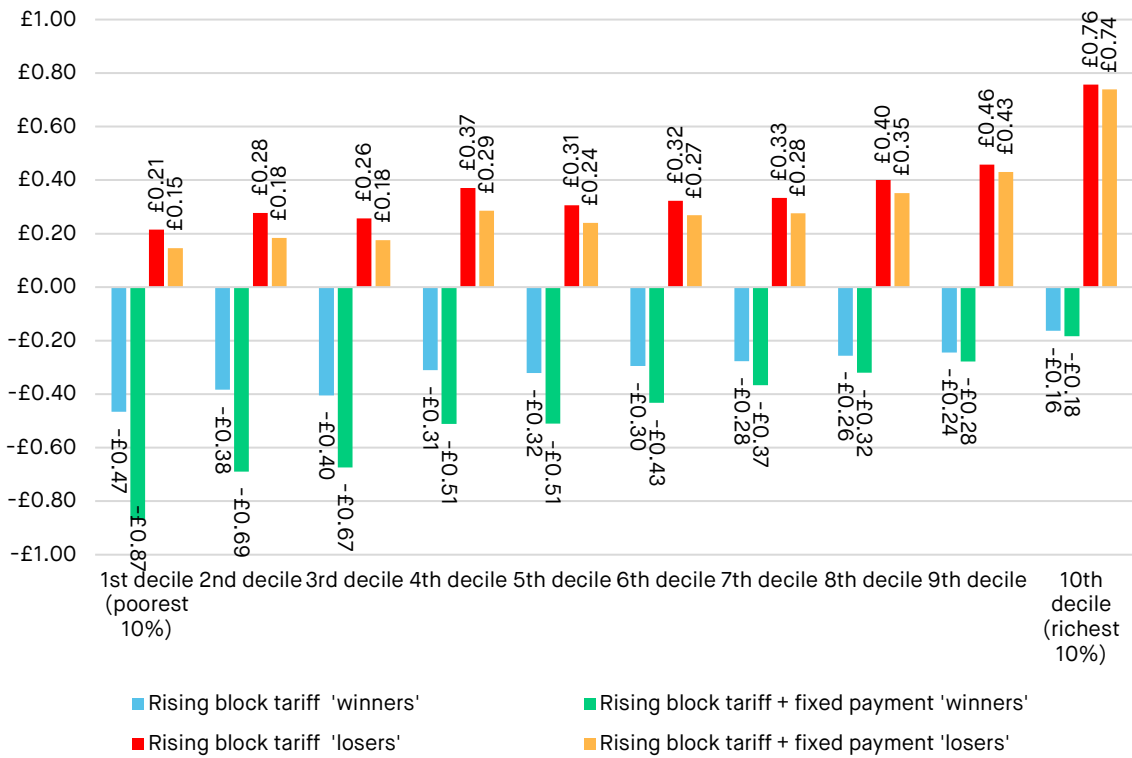
The mitigation payment also narrows slightly the difference in outcomes within income bands, but it remains the case that even after spending over £2bn of public money to blunt the edge of the policy, our rising block tariff model still leaves around a fifth (over 520,000) of the most vulnerable households worse off.

Figure 18: Proportion of households affected by rising block tariff policy options, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

Figure 19: Aggregate impact of rising block tariff policy options on bills, £bn, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

4. Real bill cap

The fourth model of financial support we consider is a real bill cap – that is a maximum energy bill that any household can receive, regardless of their level of consumption.

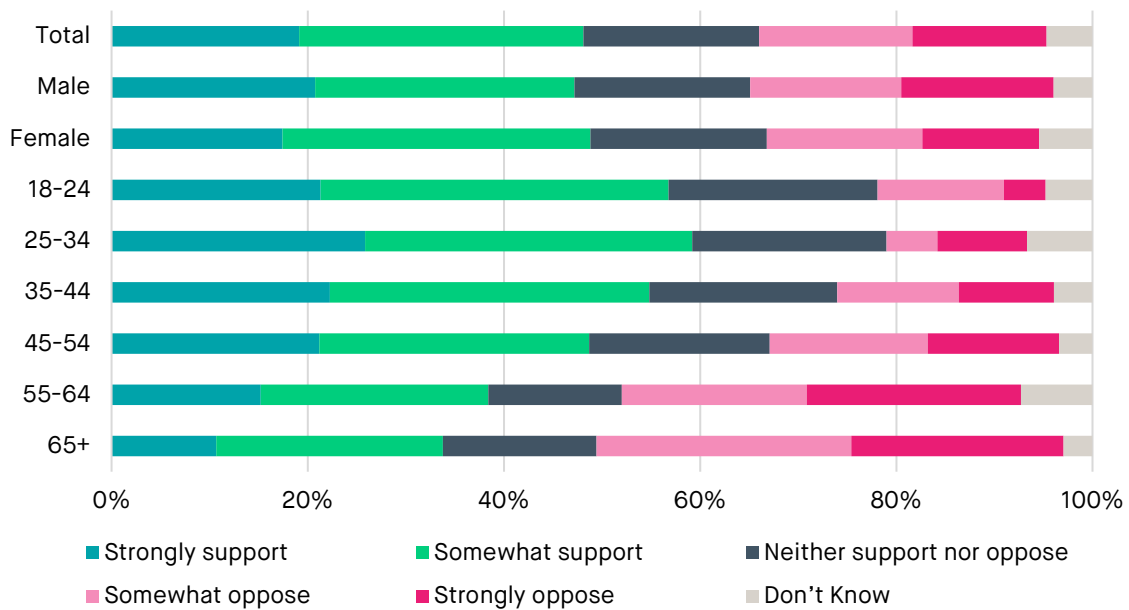
This is what 40% of adults in our polling thought the government’s Energy Price Guarantee means for this winter, reflecting significant confusion over what this policy actually means in practice.

A real bill cap would protect those in especially cold homes or those who need to consume larger quantities of energy from excessive bills. As we saw with the distributional analysis for the rising block tariff model above, this would benefit some on low incomes as well as some on high incomes. Some of the biggest gainers from such a policy, however, would be those very well-off households with unusual energy needs. All else being equal, someone with a swimming pool to heat might gain significantly.

A real bill cap would remove the incentive to reduce consumption or to fit insulation for some households whose consumption was already at or close to the cap level. It would also risk increasing the quantity of energy used by some households for whom additional consumption would now become free of charge.

This was the least well supported of the four models of delivery we covered in our polling, with 29% of the public saying they opposed this approach. Still, 48% of adults were supportive, giving a net support score of 19%. The real bill cap was more popular with younger respondents, but those over aged 55 reported net opposition. Among those who had voted Labour in 2019 there was net support of 35%, but this fell to just 3% among those who had voted Conservative at the last general election.

Figure 20: Support for an absolute limit on energy bills, regardless of how much energy is consumed.



Source: Public First survey. Survey question: “One way to provide support to eligible households would be to set an absolute limit on how much their bill can be, regardless of how much energy they consume. To what extent would you support or oppose this idea?”

While it may not be as desirable in the energy market, there is a partial precedent for such a scheme existing in UK utilities. In the water market, eligible households can benefit from their bills being capped at the cost of a water company’s average household bill. Households who claim certain benefits or have a high essential use of water (due to family size or disability) can qualify for the WaterSure cap.⁴³ However we should not overdo this comparison, since the water and energy sectors have significant differences. Water bills are driven by costs based on largely fixed asset costs; energy bills are derived from volatile commodity costs.

Options for a unit rate discount policy

In a scenario where pre-intervention energy bills were £3,000, setting a real price cap at £2,100 would mean 30% reduction on the average energy bill. This is a level of support in line with the other policy modelling set out above.

Table 7: Impact and fiscal cost of a real bill cap policy options

	Number of household policy 'winners'	Average reduction to energy bills for policy 'winners'	Annual cost to the Exchequer
Real bill cap of £2,100			
Targeted at all households claiming means-tested and disability benefits	4.1 million	–£1,734	£7.1bn
Targeted at households with one person aged 65+	5.9 million	–£1,589	£9.4bn
Targeted at households with a household income of less than £25,000	5.9 million	–£1,412	£8.4bn
All households	19.2 million	–£1,621	£31.1bn

Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

Perhaps surprisingly to some readers, the number of households directly helped by a real price cap is lower than the numbers reached by other policy options modelled for this report. This is because around a third of all households already have consumption that puts their bills below the modelled level of the real price cap here. Despite reaching fewer people, this policy has higher costs. In other words, it costs more public money to help fewer people. And that cost is concentrated on households with the highest usage, who have no financial incentive to reduce that usage.

To explore ways of improving a real cap policy, we model an option of a tiered cap, where selected households (those on means-tested benefits) have prices capped at a lower level than others.

Following the tiered options we modelled for other policies, this means a 20% discount for most households, whose cap would be around £2,400. Benefits-recipient households would get a 30% discount, for a cap of £2,100.

The overall cost of this policy would be £16.3bn, spent to benefit 9.5 million households. This is more than double the cost of a unit rate discount policy and a fixed payment policy, despite only benefiting 1.2 million more households.

Table 8: Impact and fiscal cost of a tiered real bill cap policy

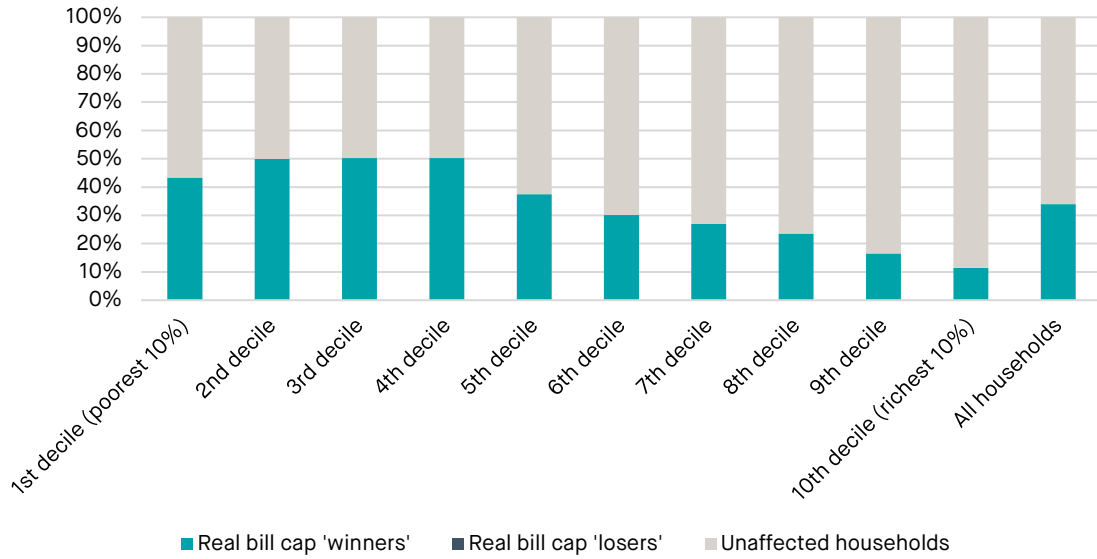
	Number of household policy 'winners'	Average reduction to energy bills for policy 'winners'	Annual cost to the Exchequer
Primary group: real bill cap of £2,100			
Targeted at all households claiming means-tested and disability benefits	4.1 million	-£1,734	£7.1bn
Secondary group: real bill cap of £2,400			
Targeted at households not claiming means-tested or disability benefits with a household income of less than £25,000	5.4 million	-£1,443	£7.8bn
Aggregate tiered policy option	9.5 million	-£1,570	£14.8bn

Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

Distributional impact

Because of its interaction with usage levels, the benefits of even a tiered real cap policy skew further towards higher income groups than other interventions modelled for this report. More than half of the very poorest households would not benefit from a policy that is, as noted above, more expensive than others considered here.

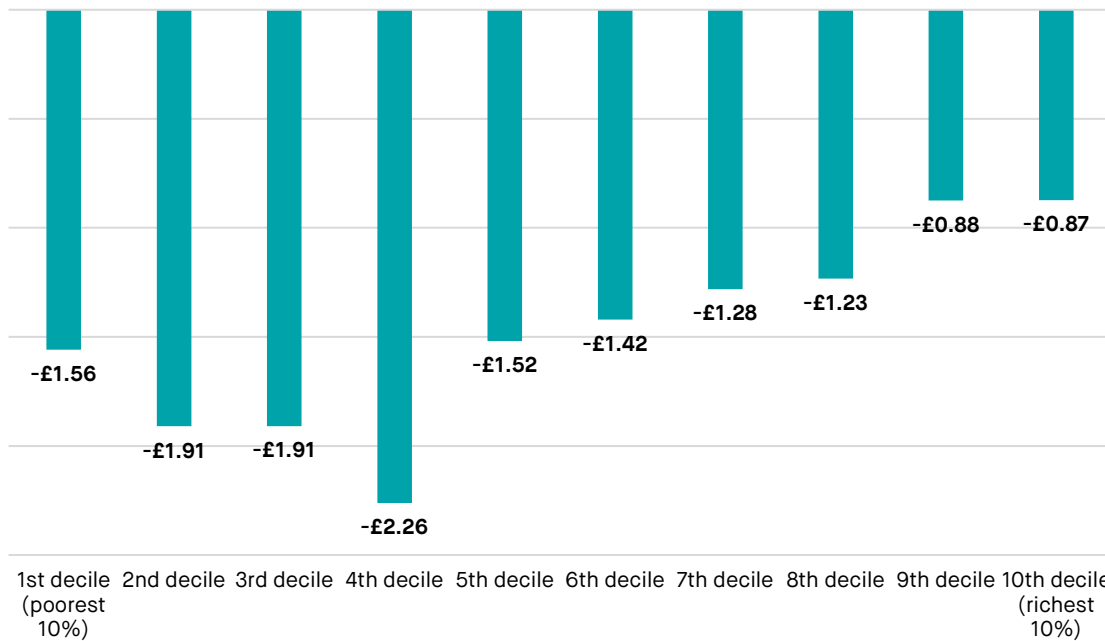
Figure 21: Proportion of households affected by a tiered real bill cap policy, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

A similar pattern is visible in the aggregate reduction in bills the real cap policy would deliver. Gains in the second, third and fourth deciles exceed those felt by the very poorest. The biggest gains are felt by those in the fourth decile and gains in the fifth decile are almost as large as those felt by the poorest.

Figure 22: Aggregate reduction in energy bills for a tiered real bill cap policy 'winners', £bn, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

Summary of financial support policy options

This section compares the impact – both positive and negative – of the various four policy options. Policymakers may choose to vary the value, and therefore the total cost, of energy support, particularly over the long term as energy prices come down.

Table 9: Summary of policy options' impact and costs

	Number of household policy 'winners'	Average reduction to energy bills for policy 'winners'	Annual cost to billpayers/suppliers	Annual cost to the Exchequer
Tiered fixed payment	8.3 million	-£811	-	£6.7bn
Tiered unit discount rate	8.3 million	-£809	-	£6.7bn
Rising block tariff + fixed payment	17.5 million	-£276	+£311	£2.3bn
Aggregate tiered real bill cap	9.5 million	-£1,570	-	£14.8bn

Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill. Assumes cost of fixed payment, unit discount rate, and real bill cap would be funded through general taxation. Rising block tariff discount to initial block of energy is assumed as being covered by other billpayers or suppliers.

Distributional impacts

In aggregate, the **fixed payment** and **unit rate discount** appear broadly identical. They benefit the same group of households, for the same cost with a similar average level of support. However, a fixed payment sees a slightly greater proportion of the overall funding pot go to lowest income households than a unit rate discount, and would therefore be considered as more progressive (Figure 25).

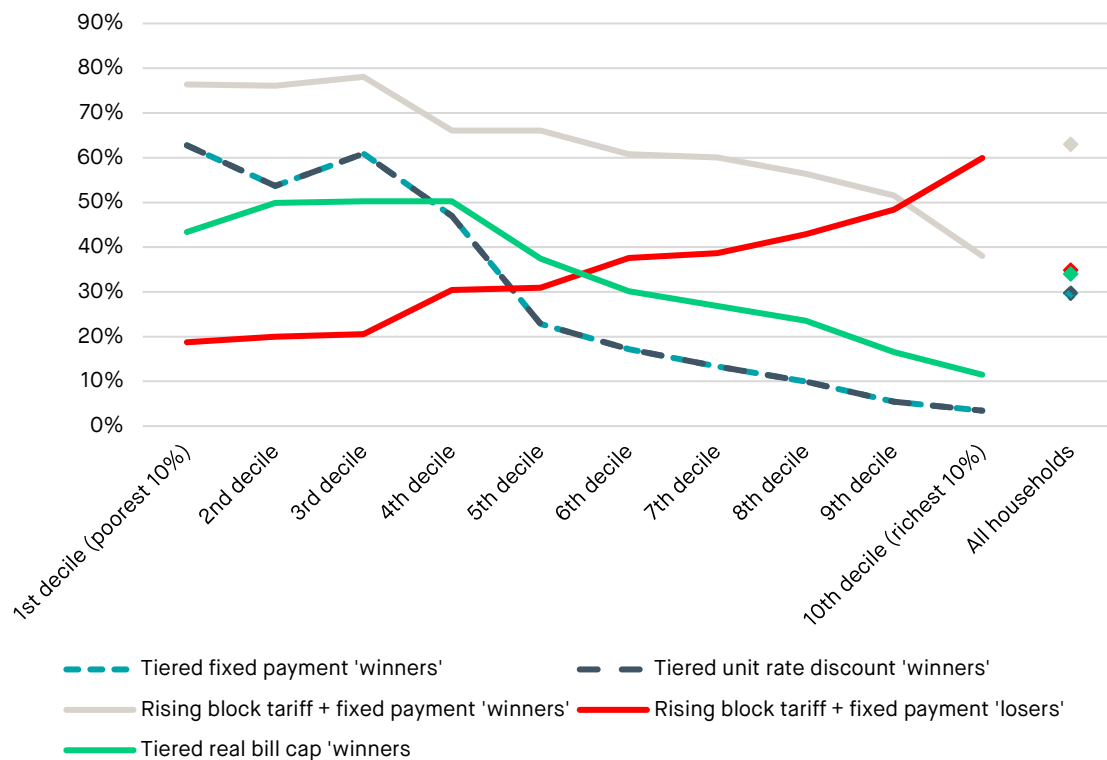
The distribution and scale of the benefit differs though. Although a small proportion of highest income households benefit from either policy, the value of this discount varies between the two policies. With a fixed payment, this benefit remains broadly stable for all groups at somewhere close to the value of payment (we put this value at £810). For a unit-rate discount policy, the highest benefit to a household can be almost as much as £1,265 for groups such as disability claimants on the highest incomes (Figure 24). The difference between these two policies is largely about incentives over usage: the unit rate discount policy significantly reduces household incentives to reduce energy consumption. At this time, our model does not account for behavioural change in response to policy options. Given the unit discount rate reduces incentives to reduce demand, it is likely that fiscal costs could increase to a greater extent than with a cash payment. Our final report will consider this factor and include further analysis on price elasticity and behaviour change.

Rising Block Tariff has instinctive appeal to ideas of fairness, and appears to offer useful incentives to reduce usage at higher levels. But by targeting usage alone without regard to income, this policy falls foul of significant variation in energy use within income bands. These mean that a simple rising block tariff scheme is likely to deliver higher energy bills for people on the lowest incomes who are, by reasons of health or housing that may be beyond their control, high energy users. Even when mitigation payments are introduced to blunt this impact on more vulnerable groups, significant variations in outcomes between groups remain.

Real bill cap is the most expensive of our options. It also provides the biggest discount to those on the highest incomes: gains from this policy might be worth £1,290 for households in the lowest income decile, and £2,737 for disability claimants in the highest income decile. This policy also reduces incentives to reduce energy usage.

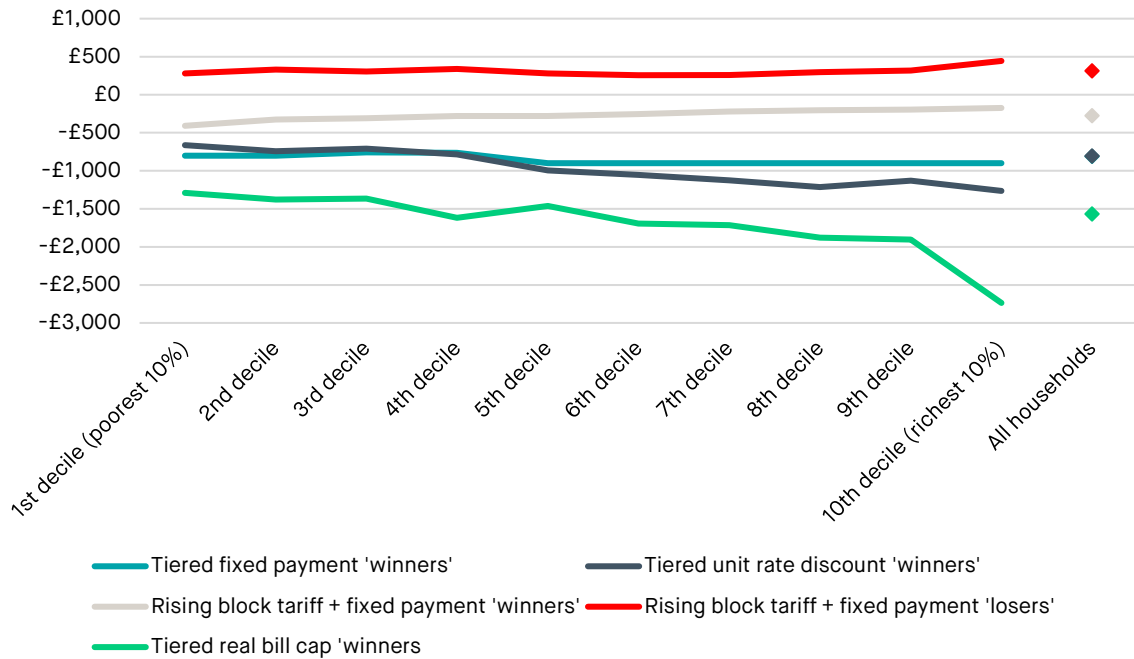
The following charts summarise the distributional impact of the different policy options modelled for this report.

Figure 23: Proportion of household ‘winners’ per policy option, by income decile



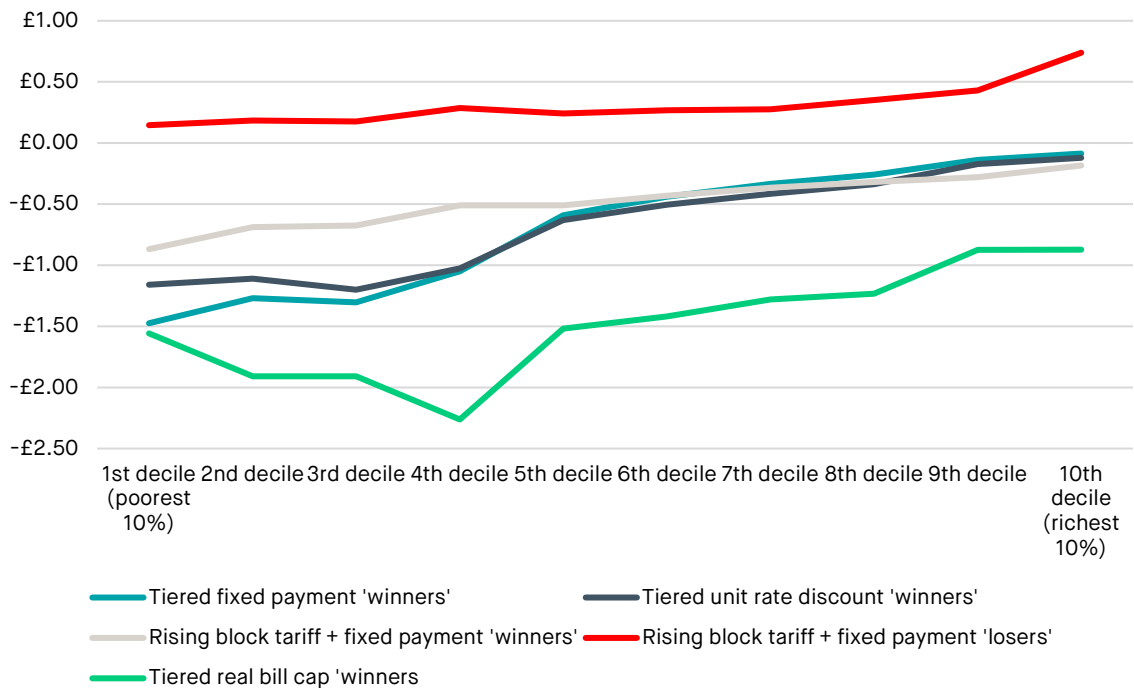
Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill. NB: “Tiered fixed payment winners” and “Tiered unit rate discount winners” are identical.

Figure 24: Average change in energy bills for policy winners, per policy option, by income decile



Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

Figure 25: Aggregate change in energy bills for policy 'winners', £bn, per policy option, by income decile

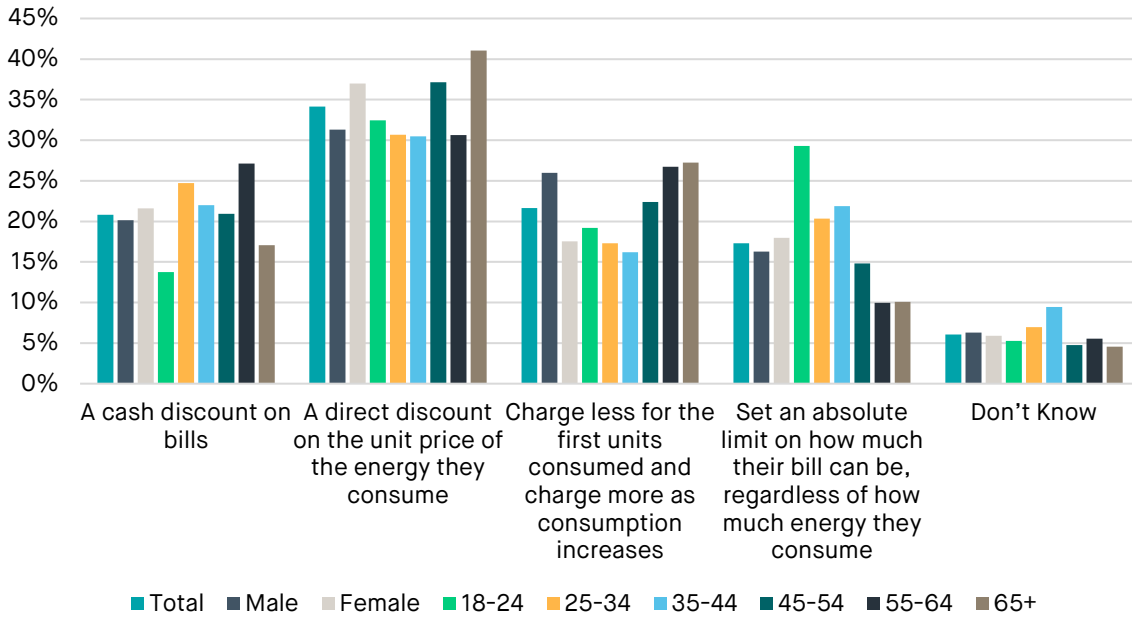


Source: SMF analysis of Living Costs and Food Survey 2019/20. Note: Assumes an average £3,000 energy bill.

Public attitudes on financial support

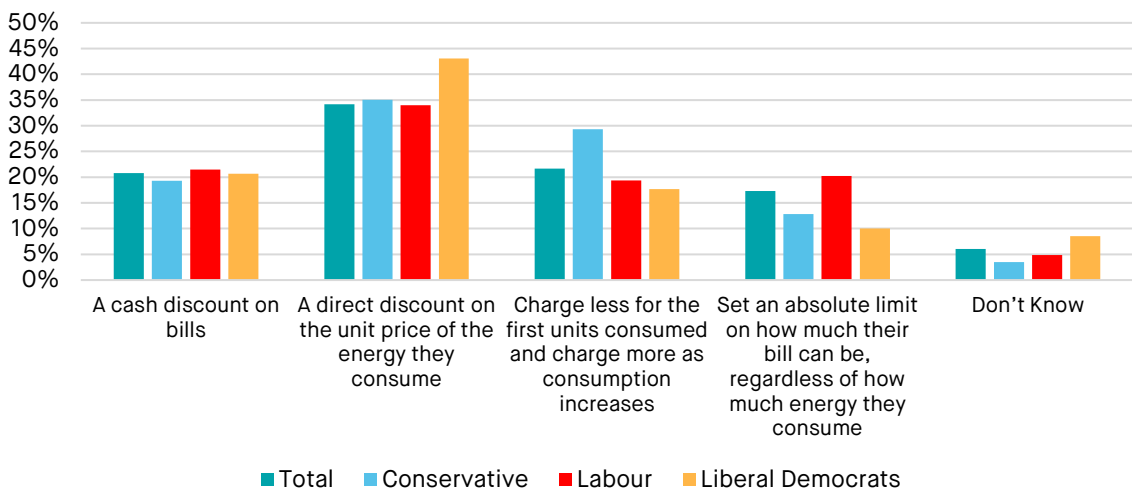
When forced to choose between these four models of delivering help with energy bills, the unit rate discount was the most popular across all demographic groups and political persuasions. Conservative voters were more likely than voters for other parties to support a rising block tariff. Older respondents were also more supportive of a rising block tariff than younger respondents.

Figure 26: Preference between the four energy bill support options, by sex and age group



Source: Public First survey. Survey question: “And of the four options you just saw on the ways support could be provided to eligible families, which is your preferred one?”

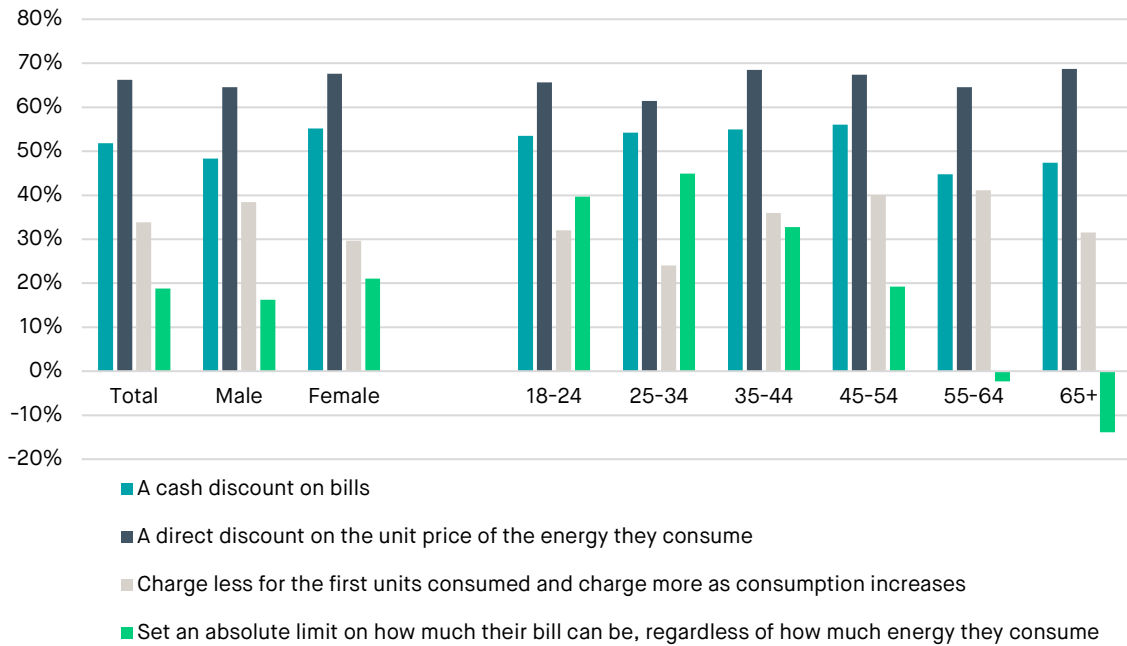
Figure 27: Preference between the four energy bill support options, by voting intention



Source: Public First survey. “And of the four options you just saw on the ways support could be provided to eligible families, which is your preferred one?”

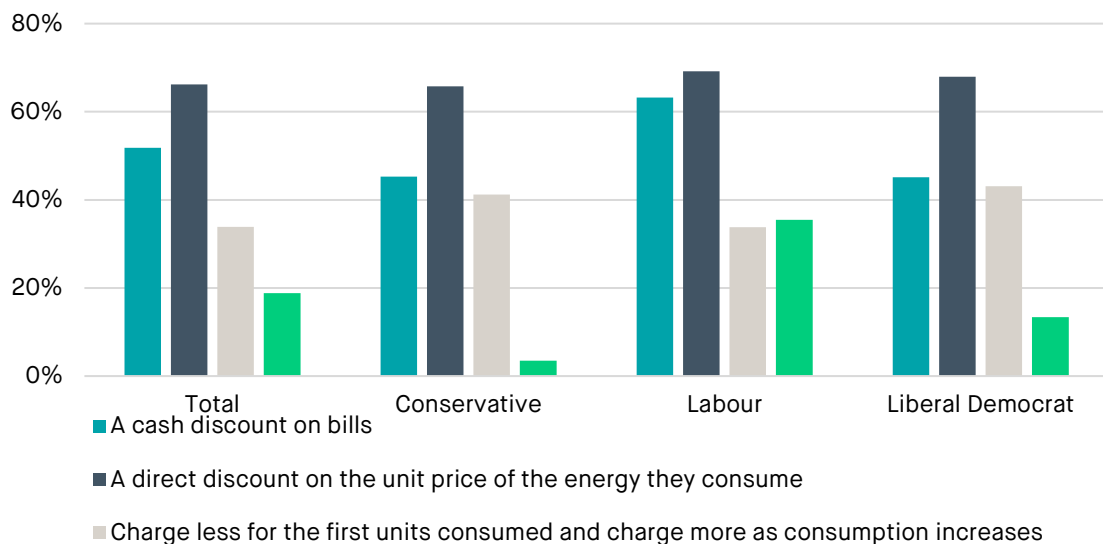
While, across all those we surveyed, preference for a rising block tariff was similar to preference for a cash discount - both with just over 20% preferring this option - the rising block tariff is a much more “Marmite” measure, with more opposition to it. When we look at public support for the measure, net of opposition, it fares much less well than a cash discount.

Figure 28: Net support for measure (% supporting minus % opposing), by sex and age group



Source: Public First survey

Figure 29: Net support for measure (% supporting minus % opposing), by voting intention



Source: Public First survey

Funding

Currently the costs of the Warm Home Discount scheme are recouped by suppliers through higher prices for all energy customers. Government estimates that the current scheme adds £19 to an average annual bill.

There is a long precedent of government policies in the energy sector being funded in this way through energy bills. On the basis of the energy price cap from the summer of 2022, the total of these levies added £153 to a typical dual fuel bill.⁴⁴ There is a legitimate concern that this model of funding is regressive as it results in a greater proportion of the total cost being met by those in lower income deciles.

We can see an argument for paying for policies that decarbonise the energy system through bills, since environmental objectives offer a clearer case for linking energy consumption with the costs of decarbonisation. However, we argue that support for low income and vulnerable groups is more properly seen as welfare policy rather than energy policy. In that sense we believe it would be more appropriate for it to be funded through general taxation and not via levies on bills. A question for further consideration is how to ensure such tax revenues are definitely spent on energy bill support, given the numerous other demands on funds controlled by HM Treasury.

In our polling we found that the public agreed. 38% agreed that financial support for energy bills should be paid for via taxation with only 12% preferring that it be funded through tariffs on bills. However, we should note that a relatively high proportion (31%) said they had no preference between these two funding routes.

CHAPTER FIVE – ENERGY EFFICIENCY

Energy bills are a function of unit prices and units consumed. The consensus from our stakeholder engagement is that any approach to reduce household energy bills would therefore be insufficient without also supporting reduced consumption over the long term by increasing the efficiency of our homes.

Better insulation benefits the individual household with lower bills, a more comfortable home, and less worry about using and paying for heating. But it also has wider benefits. Every unit of gas not burned in a home reduces national carbon emissions, local air pollution, and reduces our dependence on imported gas. Also, where the government supports households to pay their bills, energy efficiency reduces costs to the taxpayer.

The UK has the least well insulated housing stock in Europe and the majority of homes do not reach a sufficient standard of efficiency. Less than half of homes in England (44%), Wales (38%) and Scotland (45%) qualify for an EPC rating of Band C or above.⁴⁵ To make this challenge worse, there is limited enthusiasm from the current government in addressing the state of our housing stock. Insulation levels have barely recovered since former Prime Minister David Cameron’s cutting of ‘the green crap’ (that being the levies on bills to subsidise onshore wind, solar and energy efficiency schemes) caused them to plummet in 2013 (see Figure 30 below). Last year, energy-efficiency installations reached just 150,000 – just 30% of the 500,000 required each year until 2025, according to the Climate Change Committee (CCC).⁴⁶

Policy interventions to retrofit homes have been relatively limited compared to the scale of the challenge. Public investment in the energy-efficiency of homes previously stood at around £1.5bn a year for fuel poor and socially rented homesⁱⁱⁱ. The Chancellor’s Autumn Statement included an additional £6bn of new funding over three years for energy efficiency across all buildings, however this is not committed until 2025. It is also unclear what proportion of this will be committed to residential buildings.⁴⁷

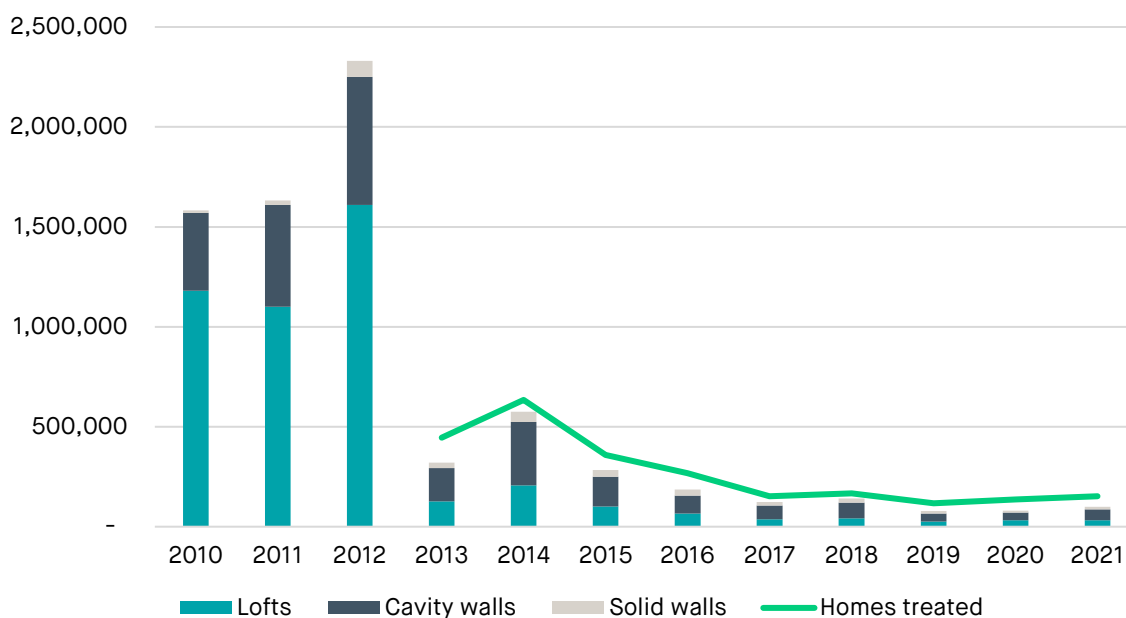
While the ECO scheme has demonstrated success, our analysis finds that nearly 11 million homes rated EPC D or below in England would not be considered fuel poor and therefore ineligible for support.⁴⁸ The wider ‘able to pay’ market for energy efficiency improvement work has been fraught with demand- and supply-side issues, not least exacerbated by the stop-start nature of government policy in this area. As such, the consensus from our engagement with stakeholders and the public is that policymakers should do more to address this challenge.

However, there is little sign of consensus on the design of such a scheme. There are still questions to be answered as to who should benefit from government support here – everyone or a targeted group? How might that targeted group be defined? What level of support would be given? And what political support is there for these options? The current fiscal outlook further hampers the development and delivery of stable long-

ⁱⁱⁱ ECO4 commits £4.36bn between 2022 and 2026. The Plan for Growth announced a further £1bn over three years. The Social Housing Decarbonisation Fund commits £179m from 2022 to 2023.

term policies to promote greater energy efficiency. Not least since that efficiency can take several years to pay for itself in the form of reduced aggregate energy use and spending, other demands on the public finances can appear to politicians to be more urgent and more politically rewarding.

Figure 30: Home energy efficiency installations 2010-2021, UK



Source: CCC, 2022

Principles for designing an energy-efficiency scheme

It is beyond the scope of this project to design various energy-efficiency schemes in full. Our analysis does however provide a high-level cost-benefit guide to answering some of the questions for policymakers posed above.

The findings presented below are based on analysis of the household, physical, and fuel poverty datasets from the English Housing Survey 2019/20. More details on the cost and energy savings assumptions are provided in the annex.

Considering speed and scale

Before considering who should benefit from publicly-funded energy-efficiency upgrades, policymakers should consider whether a government scheme should aim to achieve *speed* or *scale*. By this we mean whether a scheme prioritises key individual measures that can deliver notable energy savings, such as loft and wall insulation, or a “whole house” approach to improving efficiency. A ‘whole house’ approach considers the house as an energy system with interdependent parts that complement each other. As such, this approach offers a comprehensive plan for home improvements including insulation, heating, ventilation while taking account of wider factors like the local climate.⁴⁹

There are various benefits and limitations to either approach. Where capacity and funding are limited, an approach which prioritises individual measures such as insulating lofts and walls could deliver quicker measures across more homes, and therefore spreading the benefits of reduced energy bills across more households compared to a ‘whole-house’ approach. For some measures, this could mean a quicker payback period which may be considered a better use of public funds. However, there are potential disadvantages to this approach, such as a ‘patchwork’ effect that may give rise to installation issues and/or limit the overall potential for energy savings.

In comparison, a ‘whole house’ approach requires designing a comprehensive improvement plan which would increase the overall labour and capital costs of measures. However, it is expected that overall energy savings would also be greater than individual measures. Currently, the UK government’s approach to the latest iteration of the ECO energy efficiency scheme favours a ‘whole house’ approach.⁵⁰ This is in line with PAS 2035 quality standards, based on the German standard of *Passivhaus*. Although, evidence suggests that has not always been the case - in evidence to the Environmental Audit Committee in 2020, the UK Green Building council highlighted that ECO funding was not compatible with the delivery of whole-house retrofits as it tended to deliver single energy efficiency measures only.⁵¹ In light of the recent crisis, there have been many calls for the government to invest in energy-efficiency schemes - however, the climate change think tank E3G warns that there is a risk that companies may choose to deliver low-cost measures as opposed to a ‘whole house’ approach which could ‘cannibalise’ the existing ECO scheme.⁵²

In order to provide a comparative cost-benefit guide to this trade-off, we analyse the capital costs and energy savings of a ‘whole house’ approach by a proxy measure-upgrading all homes currently rated EPC D or below to EPC C. We have already noted the limitations of EPCs in this report, but in lieu of more accurate data, EPCs provide the best picture of whole-house energy efficiency at a national level. The cost-benefit data for a ‘whole house’ approach is based on DLUHC average estimates for upgrading a home to EPC C from the English Housing Survey. Our analysis reflects the varied costs between different EPC bands D, E and F/G provided by DLUHC. Due to the availability of data, the cost-benefit of individual measures is based on Energy Saving Trust estimates by property type - our analysis also reflects these varied costs. We recognise that in reality, costs also vary by a number of different factors per property. As noted, the analysis below is intended to provide a guide for an order of magnitude.

We find that on average, upgrading all 14.1 million homes rated EPC D or below to EPC C would cost in the region of £119bn and deliver total annual energy bill savings of £10.2bn. This is based on an average annual energy bill of £3,000 and is shown in Table 10. This equates to an average payback period of 12 years. In comparison, the costs and savings from an individual measures-based approach varies according to the measure concerned. Insulating all 8.5 million lofts, 5.1 million cavity walls, and 6.2 million solid walls in England could deliver total energy bill savings of £7bn for a capital cost investment of £50.3bn - as shown in Table 11. This would reduce the payback period to 7 years.

Table 10: Capital costs and energy savings from upgrading all homes rated EPC D or below to EPC C, England

	Homes requiring improvements	Average cost per household	Aggregate capital cost	Average annual energy bill savings per household	Aggregate annual energy bill savings	Simple payback years
'Whole house' upgrade to EPC C	14.1 million	£8,456	£119bn	£721	£10.2bn	12 years

Source: SMF analysis of English Housing Survey 2019/20. Cost data based on English Housing Survey. Energy savings calculated based on an average annual energy bill of £3,000. 2021 prices.

Table 11: Capital costs and energy savings from key individual energy-efficiency measures, England

	Homes requiring improvements	Average cost per household	Aggregate capital cost	Average annual energy bill savings per household	Aggregate annual energy bill savings	Simple payback years
<i>Individual measures</i>						
All lofts	8.5 million	£410	£3.5bn	£100	£845 million	4 years
All cavity walls	5.1 million	£864	£4.4bn	£459	£2.3bn	2 years
All solid walls	6.2 million	£6,890	£42.4bn	£621	£3.4bn	11 years
Total estimate of households requiring at least one measure	14.7 million	£3,428	£50.3bn	£477	£7bn	7 years

Source: SMF analysis of English Housing Survey 2019/20. Lofts with insulation below 150mm are considered requiring insulation installed or upgraded, as estimated in the English Housing Survey. Cost data based on Energy Savings Trust, 2021 and BEIS, 2017. 2021 prices. Energy savings calculated based on an average annual energy bill of £3,000.

Overall, these costs are significant, particularly in comparison to other estimates made by the CCC and BEIS. In its Sixth Carbon Budget, the CCC estimates that its Balanced Net Zero Pathway requires £55bn of investment in home energy-efficiency to 2050.⁵³ According to the CCC, this corresponds with a similar level of ambition as the Government's EPC C target that all homes should reach EPC C by 2035, "where practical, cost-effective and affordable". BEIS' own analysis in 2019 estimated that reaching this target would cost £35-65bn.⁵⁴ These figures refer to UK homes.

In comparison, DLUC estimates the overall cost to upgrade all *English* homes to EPC C would be £93-95bn in 2020⁵⁵; compared to our estimate of £119bn.

Clearly, there is significant variance between cost estimates here. This is based on the notion of what is considered easy or beneficial to treat. It is widely recognised that in some instances, such as insulating older solid wall properties, there are significant costs and practical challenges that might mean it is not worthwhile doing the work.

The BEIS analysis essentially removes homes such as these, and thus produces a lower estimate for overall costs. The BEIS approach removes homes based on key assumptions and ‘thresholds’ for what is deemed practical, cost-effective, and affordable. Homes are kept in the analysis where a package of measures would deliver below £100-£200t/CO₂e in terms of investment to carbon savings ratio. There is an affordability cap of £5,000+2-4% of a property’s value. And 25-75% of uninsulated solid wall properties are excluded.⁵⁶ Similarly, the CCC’s analysis removes over 5.5 million homes, which includes over half of solid wall properties and 1 million houses in conservation areas.⁵⁷ Analysis by DLUC of the English Housing Survey finds that 26% of uninsulated or partially insulated lofts, 26% of uninsulated cavity walls, and 85% of uninsulated solid walls would be deemed ‘hard to treat’.⁵⁸

At an individual home level, the CCC estimates an average cost of below £10,000 for efficiency. Within that average, 63% of homes need to spend no more than £1,000. This contrasts with DLUC’s analysis of the English Housing Survey, which estimates that just 5% of homes could be upgraded for less than £1,000. In this view, nearly half (47%) of homes would cost between £5-10,000.⁵⁹ This appears to reflect the fact that the EHS has minimal exclusions in their analysis: only around 3% of properties rated EPC D or below are excluded. Due to varying criteria of ‘eligible’ households included in different estimates, our analysis is based on not removing any properties from consideration.

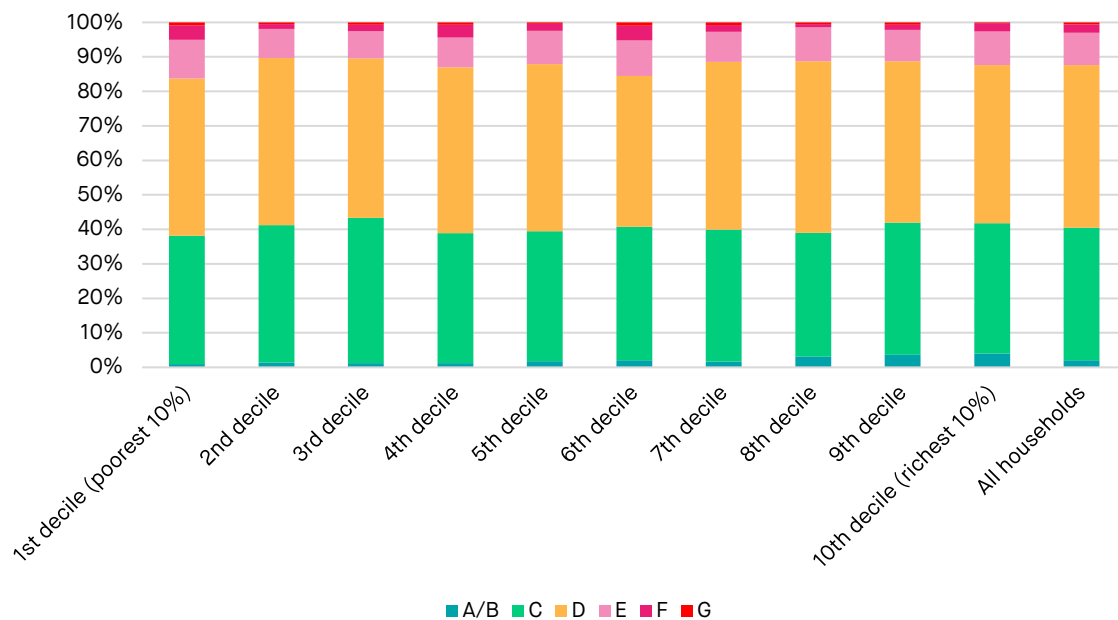
Whether policy should prioritise ‘whole-house’ efficiency or promote individual measures is not a question on which our stakeholder engagement process revealed any clear consensus. Our provisional conclusion is that debate among policymakers about delivering national energy efficiency policy is not yet sufficiently mature enough to allow a full consideration of that question. Such an informed debate is therefore urgently needed.

Targeting energy efficiency policy

As with price support schemes, policymakers must also answer the question of who should benefit from energy efficiency policy. Current policy is largely focused on fuel poor households and social renters through ECO and the Social Housing Decarbonisation Fund. However, there is appetite among the public and wider industry stakeholders for policymakers to also address low insulation levels and cost barriers for doing so in the ‘able to pay’ market. What level of policy support is required in this market is a question that remains to be answered. More details on public attitudes on energy-efficiency are explored later in this chapter.

The consensus from our stakeholder workshops was that when considering energy-efficiency policy, targeted support would require a broader definition than would potentially be applied to price support - help with efficiency should be given to people outside the group of people on means-tested benefits or the lowest incomes. This is in part because the relationship between efficiency and income is not straightforward. There are about just as many homes rated EPC D and below in the poorest decile (1.5 million) as there are in the richest (1.4 million) – as shown in Figure 36.⁶⁰ So some people who are better off than those who might receive price support could well be living in cold and draughty homes where the cost of efficiency upgrades exceed their means. The upfront costs of those improvements can be significant, as highlighted above, meaning that even households in middle to higher income deciles may still face affordability issues.

Figure 31: EPC rating by income decile, England



Source: SMF analysis of English Housing Survey 2019/20

In our consultation process, stakeholders were in agreement that where there are trade-offs to be made, especially in a time of constrained public spending, efficiency-promoting schemes should prioritise in-need households who lack the means to upgrade, in preference to helping ‘able to pay’ households that could afford to meet upfront costs privately but may be reluctant to do so. There was a concern that a policy that significantly benefits the latter group could i) potentially hamper the development of a sustainable ‘able to pay’ market and ii) divert resources away from in-need households. Here, however, it should be noted that stakeholders offered little clarity on how to define those “in need” of help with energy efficiency in such a way as to maximise uptake and minimise wasteful public spending. Similarly, the concept of ‘able to pay’ is ill-defined. Often it is used to refer to owner-occupiers although, as highlighted by the Committee on Fuel Poverty, this group also comprises the highest proportion of fuel poor households making it an unhelpful generalisation.⁶¹

Before answering *who* should benefit from energy-efficiency policy, policymakers would need to outline *why* public funding should be committed to it. This may seem needless - to many in this field, the benefits of insulating homes are so well-evidenced that they barely need to be rehearsed. As a result energy-efficiency policy can be seen as a panacea for reducing fuel poverty, energy demand, carbon emissions, and the negative health implications of cold, damp homes - all of which are in the interest of policymakers and the taxpayer. While these co-benefits can be true in aggregate and striving to achieve them is a worthy aim, designing a targeted energy-efficiency scheme in which only a proportion of households can benefit means accepting trade-offs and hard choices where all these benefits do not align. As such, policymakers will have to clarify which outcome(s) are the government's priority.

During a time when energy costs are high and the government is subsidising the cost of every unit consumed, mitigating very high energy bills and reducing consumption are two key priorities for policymakers. However, they are not always mutually achievable. As a consequence, there could be tensions in designing a scheme that can deliver on both. For example, insulating the home of a fuel poor household could make a material difference to their living standards but may not deliver significant demand reduction (and thus carbon savings): residents may not reduce energy consumption, instead heating their home to a higher temperature than previously; indeed, if affordability concerns driven by energy waste had previously forced them to ration their energy use, increased efficiency could theoretically lead some of the newly-insulated to *increase* their use. A policy that addresses fuel poverty might not reduce energy demand.

By comparison, home improvements that deliver notable demand reduction or carbon savings could likely be properties that are bigger in size or households with high energy needs. It is plausible that this would include households on higher incomes that are considered part of the 'able to pay' market. Helping insulate a large and affluent but energy inefficient home might reduce energy demand, but it would do little or nothing to address fuel poverty.

Below, we consider the cost-benefit of these two conceptual approaches for targeting energy-efficiency support. First, if policymakers wish to prioritise addressing **fuel poverty**, a scheme could be designed to target fuel poor households in line with the government's own low income low energy-efficiency (LILEE) measure. We estimate that under a 'whole house' approach to a fuel poverty energy efficiency scheme, 3.2 million households would be considered in-need. The capital cost of upgrading all of these homes would be around £27bn but could deliver £3bn in annual energy savings, meaning a payback period of 12 years. A poverty-first approach which focuses on individual measures would vary in the cost and energy savings based on which were chosen. Insulating the lofts of the fuel-poor would cost £576m, delivering savings to households that would match that cost in three years. Filling the solid walls of the fuel poor would cost almost £8.7 billion and take 11 years to realise matching savings.

Second, if policymakers wish to prioritise reducing **overall energy consumption** as much as possible, a scheme could be designed to target households where potential energy savings would be considered “above average”. As our modelling shows, this approach has higher capital costs as savings are likely to be greatest in homes that need the most improvement.

We estimate that an energy efficiency policy that focussed on demand reduction and took a whole-house approach would target 3.1 million homes that have potential to deliver above-average energy savings. Despite covering a similar number of homes as the poverty-focussed approach, this policy would cost much more: £46 billion. Annual savings would also be higher, at £5.6bn, meaning a shorter payback period: 8 years compared to 12 for a poverty-first policy.

A demand-first policy using an individual measures approach might be the best route to releasing savings equal to costs. Insulating the lofts of the homes with scope for above-average savings would cost £494m but deliver annual savings of £466m, almost paying for itself in a single year. Similarly, filling the solid walls of the homes with the greatest scope for savings would cost over £17 billion and take 7 years to realise matching savings.

Table 12: Capital costs and energy savings from upgrading all homes rated EPC D or below to EPC C, by targeted groups, England

	Homes requiring improvements	Average cost per household	Aggregate capital cost	Average annual energy bill savings per household	Aggregate annual energy bill savings	Simple payback years
Whole house upgrade to EPC C	14.1 million	£8,456	£119bn	£721	£10.2bn	12 years
Fuel poor households	3.2 million	£8,585	£27.3bn	£725	£2.3bn	12 years
Households with the potential for above average energy savings	3.1 million	£14,630	£45.6bn	£1,799	£5.6bn	8 years

Source: SMF analysis of English Housing Survey 2019/20. Fuel poor households are estimated based on the English Housing Survey LILEE designation. “Above average energy savings” = above £721/a year.

Table 13: Capital costs and energy savings from key individual energy-efficiency measures, by targeted groups, England

	Homes requiring improvements	Average cost per household	Aggregate capital cost	Average annual energy bill savings per household	Aggregate annual energy bill savings	Simple payback years
All lofts	8.5 million	£410	£3.5bn	£100	£845 million	4 years
Fuel poor households	1.4 million	£404	£576 million	£119	£170 million	3 years
Households with the potential for above average energy savings	1 million	£486	£494 million	£460	£466 million	1 year
All cavity walls	5.1 million	£864	£4.4bn	£459	£2.3bn	2 years
Fuel poor households	756,000	£774	£585 million	£442	£334 million	2 years
Households with the potential for above average energy savings	1.7 million	£1,390	£2.4bn	£859	£1.5bn	2 years
All solid walls	6.2 million	£6,890	£42.4bn	£621	£3.4bn	11 years
Fuel poor households	1.3 million	£6,652	£8.7bn	£587	£764 million	11 years
Households with the potential for above average energy savings	1.9 million	£8,824	£16.7bn	£1,209	£2.3bn	7 years

Source: SMF analysis of English Housing Survey 2019/20. Note: Lofts with insulation below 150mm are considered requiring insulation installed or upgraded, as estimated in the EHS. Fuel poor households are estimated based on the EHS LILEE designation. "Above average energy savings" = above £100/year for lofts; above £459/year for cavity walls; and above £621/year for solid walls.

Policy options

It is beyond the scope of this report to design a comprehensive energy-efficiency scheme, but it may be helpful to consider real-world practices and proposals to show how differing approaches to promoting efficiency can be enacted.

A poverty-first approach to efficiency might be broadly consistent with an **enhanced ECO**. The latest iteration of this scheme (ECO4) is set to deliver upgrades for 450,000 households over the period 2022-26.⁶² Our research finds 3.2 million fuel poor households have EPC rated D or below, meaning there is clearly scope for more households to get efficiency help through an expanded ECO or a scheme like it. Is such an expansion feasible? Research from Gemserv found that the energy-efficiency supply chain is operating with some spare capacity and there is strong confidence that capacity could double over the next two years if there was more funding and therefore demand.⁶³

A demand-reduction approach to energy efficiency might also feasibly be delivered via **an ECO-like scheme**, albeit one that was targeted at a different set of households. Selection criteria for such a scheme would need to determine which homes are cost-effective, affordable and practical to upgrade, in order to target the ‘low-hanging fruit’ and see maximum return (in terms of demand reduction) on investment of public money. As noted above, such a scheme might face broader questions about fairness, since it would almost certainly involve some degree of public subsidy for householders who could reasonably be described as able to pay for their own upgrades.

Turning to that “able to pay” group, Energy UK has proposed a scheme called **ECO+**, which is described as being based on the ECO model, albeit without putting any obligation on industry. The proposal is aimed at the “able to pay” group, but targeted at those of lesser means: only homes in council tax bands A-D would be eligible, thus excluding the wealthier half of households. ECO+ would be voluntary meaning households put themselves forward to suppliers, who could then claim public money to reduce costs. Possibly the most important element of the proposal is its duration: at least five years, a period that is persuasively argued to be necessary to give industry some certainty and therefore the confidence to expand. Shortly before the publication of this report the government announced its adoption of a form of the ECO+ scheme, to run for just three years to March 2026.⁶⁴

There remain questions about the level of customer contributions that might be required for this scheme, but Energy UK notes that these contributions are necessary to increase the impact and reach of publicly-funded subsidies.⁶⁵ There is clearly a debate for policymakers to have about the right level of contribution that “able to pay” households should make to efficiency measures, compared to the public subsidy. We note that in heat pump market, government has provided £5,000 grants for air source heat pumps, around 50% of the upfront cost.

Given the evidence that low levels of consumer information and engagement with the detail of energy efficiency (for instance, our poll findings about those who don’t believe they need insulation) there is scope for much better advice and guidance to engage the public and help them navigate what can be a highly complex marketplace and policy environment.

Scotland provides what could be an example to other parts of the UK. **Home Energy Scotland (HES)** is a national energy-efficiency advice service managed by the Energy Saving Trust.⁶⁶ It offers a "one stop shop" for information, bespoke advice, access to schemes and even 'handholding support' for installing more complex measures. Staff can act as a referrers to government financing programmes. Consumer protection is also built in whereby households cannot access much financing support without talking to HES first. The network helps more than 90,000 customers a year in Scotland and the total lifetime energy bill savings from the network are estimated to be well over £1bn since 2008.⁶⁷

There is currently no service available in England, but the Environmental Audit Committee has recommended a similar service as HES for England.⁶⁸

Again, timeframes are important here. HES exists as part of the Scottish Government's Energy Efficient Scotland route map, which has a timetable stretching over 20 years.

Public attitudes to energy efficiency

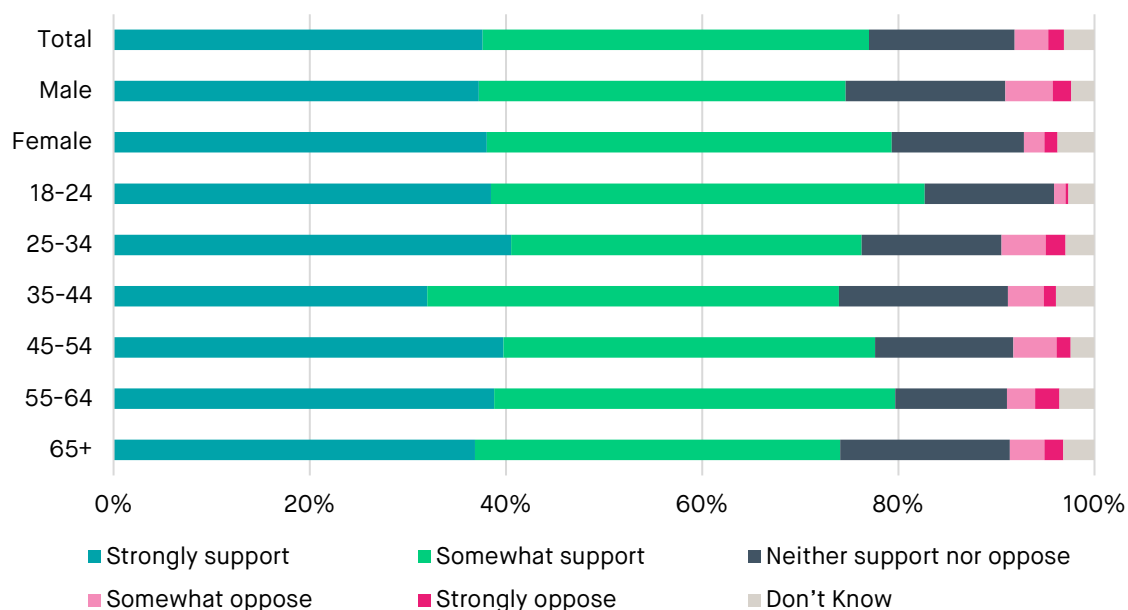
A surprising 54% of homeowners do not believe they need (more) insulation. This is made up of 41% who think they have already had all the insulation measures they need fitted and 12% who have not had insulation fitted but still don't think they need it.

This is concerning given there are around 3.8 million homes with easy-to-treat uninsulated wall cavities, around 5.7 million homes with easy-to-treat uninsulated (or under-insulated) lofts, and 7.7 million uninsulated solid wall properties in Great Britain.⁶⁹

Raising awareness of the awareness of energy efficiency may therefore be a key way to increase uptake. In our polling 67% said they had read at least some advice on how to cut their energy consumption over the past few months. Female respondents (73%) were more likely to have read such advice than male respondents (61%).

Asked whether this should be the responsibility of Governments, 64% said it was the Government's responsibility to provide *information* to households on how to reduce their energy consumption in order to help them make savings and alleviate pressures on our energy system. By contrast, 28% said it is not the Government's place to tell people how they should behave, and people should consult other sources if they want advice on how to reduce their energy consumption. Younger respondents were more likely to see a responsibility for government.

In principle, the public are very supportive of the idea that there should be a government energy efficiency scheme. Across all adults 77% they were supportive compared to just 5% who were opposed. Indeed there were no statistically significant sub-groups in our polling where even 10% of respondents opposed this idea.

Figure 32: Support for a government scheme to insulate poorly insulated homes

Source: Public First survey. Survey question: "Some households face high energy bills because their home is poorly insulated. Some people have called for a government scheme to insulate such homes. To what extent would you support or oppose this idea?"

This may of course reflect the 'motherhood and apple pie' nature of the question. In our focus groups we explored whose responsibility participants thought it was to insulate homes. The groups felt that landlords should be responsible for improving the insulation of houses they rented out and that homeowners had responsibility for the fabric of their own home. There was little support (especially in one of the higher-income focus groups) for the government having a role, except where homeowners found themselves on a very low income or where there was a safety concern. One of our lower-income focus groups could see a role for government upgrading homes when presented with the alternative being the need to provide a cash grant every year to help with energy bills made larger by higher usage. Participants would rather public is used on lagging than subsidising the cost of trying to heat draughty homes.

If the government were to fund a scheme to insulate homes, the public splits on whether this should be targeted at low-income/vulnerable households or be available to everyone equally. 40% of respondents preferred such help to be targeted, while 54% preferred universal availability. There was some political divergence on this, with those intending to vote Conservative at the next election more likely to support a universal approach and those intending to vote Labour split broadly in line with the public as a whole. Only those intending to vote Liberal Democrat were more likely to prefer the targeted approach.

We asked those who identified as homeowners how much of their own money they would be willing to contribute to a government energy efficiency upgrade of their home. In order to give respondents some anchor for their expectations in answering this question, we explained that the average investment required to bring draughty homes up to the Government's target EPC rating of C is around £7,000.⁷⁰ We found

14% of homeowners would not be willing to contribute at all and a further 23% would not contribute more than £250. Older homeowners were the most likely to say they were unwilling to contribute. Only 10% of homeowners said they would be willing to contribute £3,000 or more, or around half the likely bill.

Figure 33: Public willingness to contribute to home energy-efficiency costs



Source: Public First survey. Survey question: “If the Government were to offer you a discount to help you upgrade your home’s insulation, how much would you be willing to pay out of your pocket to contribute to this insulation upgrade? As a rough guide, the average investment required to bring draughty homes up to the Government’s target EPC rating of C is around £7,000.”

Learning from previous energy efficiency schemes

Despite multiple government schemes delivered over more than a decade, the UK still has some of the least energy efficient homes in Europe. That’s not to say that nothing has been achieved; for example since 2013 almost 2.5 million homes have received energy upgrades under the Energy Company Obligation (ECO) scheme.⁷¹ But many government schemes in this area have underperformed and we find multiple lessons that can and should be learned.

The first is a misunderstanding of the role of finance. Energy efficiency upgrades should be an economically sensible step for many homeowners; they should pay back the investment in a few years and then offer lower energy bills for many years ahead. When homeowners don’t make this investment, the conclusion that many policymakers have drawn is there must be a lack of accessible finance to help people over the initial investment hurdle. This conclusion appears to be backed up by public opinion research. For example in the polling undertaken for this project affordability

was the most cited barrier to getting insulation fitted. This same logic led the coalition government to introduce the Green Deal, a loan scheme for energy efficiency upgrades. It failed. Only 14,000 households took out Green Deal loans⁷² – less than 0.1% of the homes needing upgrades. The National Audit Office found that for the £240m on the scheme by government, it had “not generated additional energy savings”.⁷³ There were multiple reasons for this scheme’s underperformance, some common to other schemes discussed below. There were two specific failures of the Green Deal: the belief that there was pent up demand for energy efficiency measures; and the belief that a finance scheme was all that was needed to unlock demand. The reality is likely to be more prosaic. Our assessment is that – when bills are at normal levels – families have a lot to think about and insulation measures are rarely top of their mind. And that very many families hate the idea of taking out a loan and being in debt.

The second lesson is the benefit of a scheme being in place for the long term. In 2020 the government announced a six-month scheme of Green Homes Grant Vouchers. These were intended to cover two-thirds of the cost of eligible improvements, up to a maximum government contribution of £5,000. Ministers hoped to allocate £1.5bn and help 600,000 homes to become more efficient in just six months. That didn’t happen. At best 47,500 homes will have been upgraded under the scheme.⁷⁴ One of the key reasons was the short duration of the scheme – this reduced the incentive for Trustmark registered installers to sign up to the scheme and meant there was no pipeline of work to encourage new installers to become Trustmark registered. Building a supply chain of accredited installers will be vital to delivering a national energy efficiency programme, and that in term will require a long duration scheme where potential installers can see the enduring benefit of undertaking training and applying for accreditation. It remains to be seen whether the additional three years of funding committed in the Autumn Statement 2022 is long-term enough for the sustainable development of the supply chain.

There may be further lessons to learn here from Scotland. In 2015 the Scottish government classified energy efficiency as a national infrastructure priority. Following this, in 2018, the Scottish government published its Energy Efficient Scotland route map setting out a 20-year programme to improve homes, business and public buildings, which has led to more comprehensively governed and targeted centrally-funded, long-term schemes.⁷⁵

The detailed design of an energy efficiency programme is beyond the scope of this paper. But it is clear that policy will be more successful if it learns the lessons from past schemes, both positive and negative.

Funding

We argue that energy efficiency policies should bring down the total UK energy bill and improve UK energy security. In that sense they are part of energy policy, and it would be reasonable for this to be funded through energy bills.

In recent years the fact that the ECO energy efficiency scheme is funded through energy bills has not been especially controversial. In her leadership campaign Liz Truss did pledge to take “the green levy” off energy bills, but never spelled out what that “levy” was. It may even be instructive that Truss did not specifically say she would remove the cost of energy efficiency from bills.

It is perhaps worth recalling that the increasing cost of an earlier iteration of the ECO scheme in late 2013 was one cause of David Cameron’s “cut the green crap” intervention. Changes made by the coalition government as a result did reduce bills by around £50 (of which £30-35 was related to the ECO scheme⁷⁶). An analysis by Carbon Brief⁷⁷ earlier this year found that the reduced number of energy efficiency measures installed as a result meant that household bills were around £464m higher as a result at the start of 2022. Adjusting this to reflect more recent energy prices⁷⁸ equates to a typical household bill being around £50 more expensive now than had ECO not been cut back.

In our polling we found the public preferred that a government energy efficiency scheme be paid for via taxation (40% support) rather than through energy bills (11%). But a relatively high proportion (29%) said they had no preference between these two funding routes.

CHAPTER SIX – MARKET REFORM

Attempts to reform the way the energy market works seem to be hardy perennials in Whitehall.

In part this reflects the major changes that have already been implemented as well as those that will still be needed as we move from a high-carbon to a net-zero world. Reforms⁷⁹ in the last decade were highly successful in bringing forward large volumes of offshore wind as well as driving down the price. Offshore wind that required a subsidy equivalent to £200/tCO₂ less than ten years ago is now being built essentially subsidy free in the UK.

Decoupling gas and electricity prices

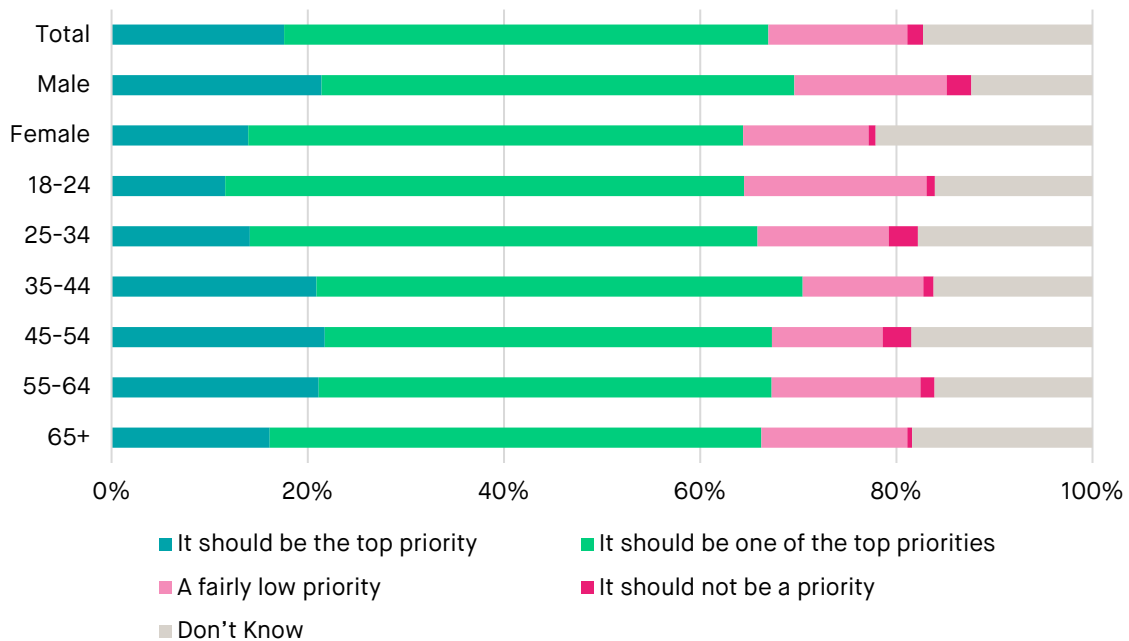
Despite the fact that almost 40% of our electricity now comes from zero-marginal-cost sources such as wind,⁸⁰ the recent rocketing of gas prices has highlighted that the benefits of low cost renewables do not directly feed through into lower bills. One government source was recently reported to have described as “completely crazy that the price of electricity is based on the price of gas when a large amount of our generation is from renewables”.⁸¹ Our own conversations with policymakers across the political spectrum confirm that this view is widely shared.

The government announced in April that it would undertake “a comprehensive Review of Electricity Market Arrangements (REMA) in Great Britain”.⁸² This process is “exploring whether there is a case for fundamental wholesale market reform”, including to decouple electricity prices from expensive gas prices. But REMA is a medium-term project that aims to deliver change from the mid-2020s onward.

In the near term the government has passed legislation, the Energy Prices Act, on an emergency timetable⁸³ taking powers to implement a quick fix. Specifically, the Act allows the government to expropriate the revenues of certain generators above a certain level for the purposes of funding a reduction in the cost of electricity. The legislation does not specify which generators or what level of revenue they will be allowed to keep, but estimates have suggested this could raise in excess of £16bn a year.⁸⁴

This may seem like a byzantine area of policy, but it is one the public care about to a perhaps surprising extent. When polled, 54% of the public said they supported changing the way we price electricity, with only 7% opposed. But 67% of the public thought that this should be one of the top priorities for the government.

Figure 34: Public attitudes on whether decoupling the price link between gas and electricity should be a government priority



Source: Public First survey. Survey question: “To what extent do you think moving away from wholesale electricity prices being linked to gas prices should be a priority for the Government, if at all?”

Retail competition

It’s not just in the wholesale market space that reform is proposed. Retail competition has also been in the spotlight, including the government running a call for evidence over the last Christmas and New Year period on the “future of the energy retail market”.

This comes against a backdrop of declining customer choice. A falling number of suppliers offering a falling number of tariffs could be seen as looking like a return to the bad old days of the “Big Six” energy suppliers.

Citizens Advice published earlier this year a critique of how regulatory failures in the retail market led to 28 suppliers failing, leaving behind a bill for customers of more than £2.6bn.⁸⁵ Ofgem has since estimated that the cost to customers of these failures - excluding the single biggest failed supplier Bulb - will equate to around £94 per customer.⁸⁶

Electricity settlement reform

Settlement reconciles differences between a supplier’s contractual purchases of electricity and the demand of its customers. Generators and suppliers trade electricity in the wholesale market in half-hourly periods. Currently, most customers are settled on a ‘non-half-hourly’ basis using estimates of when they use electricity, based on a profile of the average consumer usage and their own meter readings.

Smart meters can change this, given that they can record the amount of energy consumed or exported in each half hour period. This provides an opportunity to make the settlement process more accurate and timely, and act as an enabler for new products and services, for example making use of smart appliances to ensure products operate when energy prices are lower.

Ofgem analysis has predicted that market-wide half-hourly settlement (MHHS) could bring net benefits for consumers in Britain of between £1.6bn and £4.5bn over the period 2021-2045.⁸⁷

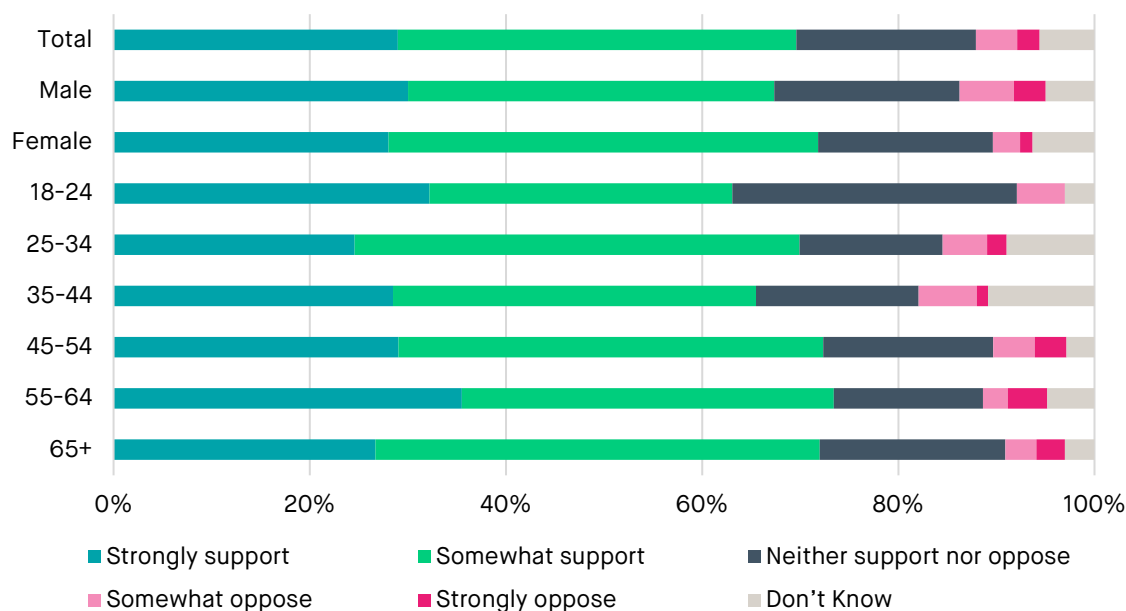
While time-of-use tariffs exist in the UK, uptake is low with fewer than 15% of households on one, compared with 50% in France. Since 2014, Spain has offered real-time pricing as the regulated default rate for residential customers.⁸⁸

Getting new capacity built

The Committee on Climate Change argues that the UK is likely to consume around double the amount of electricity each year in 2050 as it does today.⁸⁹ Meeting that level of demand will require significant new generating capacity to be built and the rate of build to be increased above that seen in recent years.

Much of the additional capacity will be offshore wind. But we are also interested in what would be needed to get onshore wind capacity built. In our polling 70% said they would support the development of a wind farm within a few miles of where they live. Only 6% said they would oppose this development.

Figure 35: Public attitudes on support for a wind farm development proposal in their area

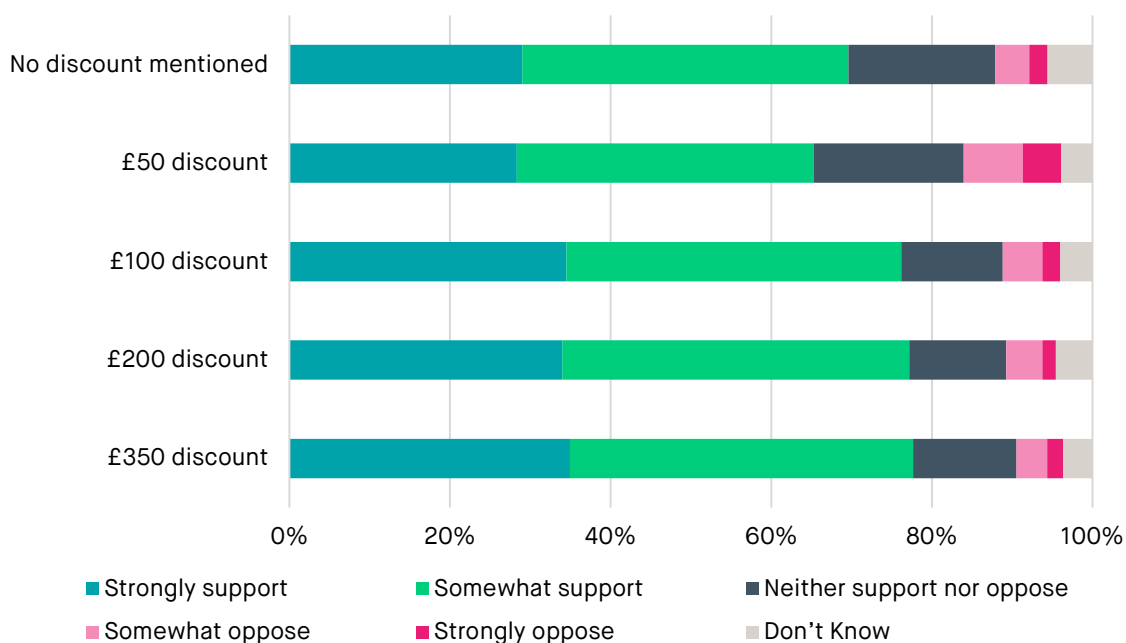


Source: Public First survey. Survey question: “Imagine there was a proposal for a wind farm to be developed within a few miles of where you live. Would you personally support or oppose the proposed development?”

This is an already very high level of support. But a number of politicians have recently suggested that support could be increased by sharing the benefits of lower prices with local communities. In April 2022, the government said it would consult on “developing local partnerships for a limited number of supportive communities who wish to host new onshore wind infrastructure in return for benefits, including lower energy bills”.⁹⁰

In our poll we tested whether the strong support for offshore wind seen above would change if those who live near the development will receive different levels of discount off their energy bills. Support actually appeared to go down very slightly when a £50 discount was offered, but there was an increase in support for £100, £200 and £350 annual discounts. Support was not significantly higher though for a £350 discount than with a £100 discount.

Figure 36: Public attitudes on support for a wind farm development proposal in their area, if they received an annual payment of the following amounts



Source: Public First survey. Survey question: “Imagine there was a proposal for a wind farm to be developed within a few miles of where you live. Would you personally support or oppose the proposed development?”

Locational pricing

One of the live debates in the energy sector being considered in the Review of Electricity Market Arrangements (REMA) mentioned above is Locational Pricing. The REMA consultation put it this way: “The current wholesale market has a single national price and... network users may not be appropriately incentivised to locate in areas with spare network capacity and to use the network in ways that help overall system efficiency”.⁹¹

35% believed the price paid by homes and businesses for electricity should be the same right across the country. 21% would support locationally cost reflective pricing for businesses, with all homes paying the same. Locationally cost reflective pricing for both homes and businesses was supported by 18%. Older respondents (51% of those aged 65+) were very much more supportive of electricity prices being the same across the country than younger people (16% of 18-24s).

CHAPTER SEVEN – QUESTIONS FOR CONSULTATION

Since this is an interim report, we offer here few firm conclusions and recommendations. Instead, we raise questions, based on the evidence and analysis set out in this report. These questions, and their answers, will underpin our final report in the spring of 2023, where we will draw conclusions and make recommendations. We welcome responses at energy.bills@smf.co.uk

Our questions, and the analysis that leads us to them:

1. **Should help with high energy bills be universal, or should support be targeted in some way on groups deemed to be in particular need of help?** The evidence compiled here points towards some degree of targeting, but also highlights the downsides and challenges of targeting. Selection: **Who should receive targeted support with energy bills? How should selection criteria account for income and energy usage?** Incentives: **How can a system of targeted support avoid – or lower – cliff-edges that see some recipients losing significant sums of money because of changes in their circumstances?** Stigma, low knowledge and participation: **How can a system of targeted support address the risk that some eligible recipients might not claim the help they are entitled to?**
2. It is (relatively) easy to answer the questions above. Implementing those answers in practice is a very different matter, because as this report has shown – and the current government has tacitly accepted – existing mechanisms for identifying those in need of bill support and then delivering that support are inadequate and wasteful. **Do you agree that an energy bill policy that seeks to deliver targeted support to those in financial need requires the creation of new state mechanisms to identify those people and deliver that help?**
If you do: **What information about households' financial situation and energy usage would such a new system require?** And further: **Is the creation of a new state mechanism, reliant on knowledge of the personal circumstances of households, politically viable? How might political and public concerns about “database” policies be addressed here?**
3. When it comes to delivering bill support, we have considered four broad options for policy. We find that two of these approaches raise such significant problems that they should not be considered as the basis for long-term policy. Rising block tariff models have superficial appeal and a degree of public support, but because of the complex relationship between income and usage, they create inconsistent and unsustainable outcomes. Real price caps also have an appealing simplicity, but create regressive outcomes and remove incentives to reduce usage or increase energy efficiency. **Do you agree with our rejection of these two models?**

4. Rejecting rising block tariffs and real price caps leaves two options on the table: fixed payment discounts and per-unit discounts. Both are progressive, delivering the most help to people on lower incomes. Fixed payment discounts can deliver lower bill reductions, given the changes in behaviour they can encourage. Per-unit discounts can deliver the biggest benefits to people on higher incomes, and significantly reduce household incentives to reduce energy usage. We think these two policies, their advantages and downsides, should be considered in more depth as part of a long-term energy bill policy. **Do you agree with our assessment of these two policy options? Are there other ways to deliver bill support that we should consider?**

5. Energy efficiency is clearly a vital part of any effort to reduce energy bills, and Britain's poor performance on increasing the efficiency of homes is regrettable in the extreme. Given that a key obstacle to increasing efficiency is unstable, short-lived policy, an important question here is: **What is the best way to ensure lasting, stable efficiency-promoting policies that can survive economic and political cycles?** But while there is widespread agreement that efficiency must be increase, many fundamental questions remain, not least since efficiency policies can and do have multiple aims. **Should efficiency policies be set in order to maximise reductions in overall UK energy demand, or to maximise the bill savings to those in greatest financial need?**
 Responses to that trade-off might help frame answers to a subsequent question: **Should government support with the costs of household energy efficiency work be targeted solely on those in financial need of help with bills, or should some support be available to those who are able to pay for efficiency measures but do not choose to do so?** A related question: **Should the group deemed to be in need of help with efficiency measures be the same as the group selected for targeted price support, or should it differ? If so, how?**

6. We have largely considered price support and energy efficiency separately in this report. Of course, we acknowledge that in reality, such policies would co-exist and interact. **How should price support and energy-efficiency policies interact?**

7. Electricity market reform is a vast and complex topic, much of it beyond the scope of this report and this project. But clearly the way wholesale energy prices are determined is directly relevant to energy bills and the people who pay them. **What principles should underpin electricity market reform, and how can that reform take full account of household energy bills? How should market reform policy interact with other energy bill policies?**

ANNEX – PRIMARY RESEARCH METHODS

Focus groups and polling

To support the research, Public First undertook four focus groups and two nationally representative surveys.

We conducted two focus groups on 13 July. The first group comprised lower income households who would consider voting Labour. The second group comprised households on above average incomes who would consider voting Labour. Participants in both groups lived in or close to the Derby North parliamentary constituency.

We conducted another two focus groups on 19 July. The first group comprised households on above average incomes who would consider voting Conservative. The second group comprised lower income households who would consider voting Conservative. Participants in both groups lived in or close to the Wakefield parliamentary constituency.

The first nationally representative survey was in the field between 19th July and 23rd July 2022, with a sample size of 2,012 adults. A second nationally representative survey, exploring policy options in more detail, took place between 21st October and 25th October 2022, with a sample size of 2,002 adults.

All survey results were weighted using Iterative Proportional Fitting, or 'Raking'. The results were weighted by interlocking age & gender, region and social grade to nationally representative proportions.

Full survey data tables are available on the Public First website, and the project microsite – <https://www.smf.co.uk/future-of-energy-bills/>. The microsite also contains summaries of the focus groups.

Financial support

The analysis in Chapter Four is based on SMF modelling of the Living Cost and Food Survey 2019/20. Household expenditure on energy was uprated by 157% from an average household bill of around £1,170 in 2019/20 to around £3,000 to reflect potential higher long-term costs.

Changes in energy prices can result in behaviour change. At this time, our model does not account for price elasticity and subsequent changes in consumption. This is due to the lack of relevant elasticity figures for the current and ongoing context of above average prices. As the crisis continues, officials are gaining almost real-time insight into how behaviour is changing in response to price signals. We recognise the importance of how different policy options create different incentives for demand. We are working with officials to better understand this behavioural response which will be accounted for in further analysis presented in our final report.

During the next phase of the project, we will consult on how energy-efficiency and price support policy should interact, and therefore whether to include short-run or long-run elasticity figures. The former concerns relatively simple decisions around

energy consumption; the latter encompasses how households make structural behavioural changes or investments in response to continued high prices.

Details of each individual financial support policy option are provided in Chapter Five.

Energy efficiency

The analysis in Chapter Five is based on SMF modelling of the English Housing Survey 2019/20. The cost and energy savings data for a ‘whole house’ approach and individual measures are detailed below. Where necessary, capital costs for measures are updated in line with 2021 prices to make data comparative across different sources. Energy savings data used was expressed in £ value by the data sources. In order to analyse how this would change in line with an average energy bill of £3,000, a percentage was calculated based on the average energy bill for the year that the energy savings prices were calculated.

‘Whole house’ approach

The cost and energy bill savings for energy efficiency measures vary among sources. Our analysis assumes costs and savings in line with the English Housing Survey 2019/20 for a whole home approach.⁹² This includes costs to upgrade a home to EPC C varying by EPC ratings D-F/G. These costs were updated to 2021 prices to be comparable with Energy Saving Trust data for individual measures. DLUC calculate the average cost of upgrading all homes to EPC C to be £7,737 in English Housing Survey Energy Report 2020 and £8,110 in 2019.⁹³

Table 14: Capital costs and energy savings data assumptions of ‘whole house’ improvements, by EPC rating

	Average cost (updated to 2021 prices)	Annual energy bill savings (%)
Improve dwellings to EPC C		
D	£6,696	14%
E	£13,745	36%
F/G	£19,511	57%

Source: DLUC, English Housing Survey, 2019 to 2020: Energy

Individual measures

Due to the availability of data, the cost-benefit of individual measures is based on Energy Saving Trust estimates by property type - our analysis also reflects these varied costs.

Lofts with insulation of beneath 150mm were considered requiring a form of insulation in line with the English Housing Survey methodology. Capital costs and energy bill savings from loft insulation depending on whether homes already have partial

insulation (up to 150mm) or none at all. Less than one in ten (8%) of homes in England have completely uninsulated lofts while almost two-thirds (63%) of homes that require loft insulation have at least 100mm. Households living in homes with no loft insulation are modelled using the costs and energy savings of such below. Due to data constraints, households living in homes with partial insulation (up to 150mm) are modelled using the costs and energy savings of lofts with partial insulation from 120mm. Just over a quarter (28%) of all homes requiring some level of loft insulation have up to 99mm of insulation. As such, for these homes, the costs and energy savings in our model may be understated.

Treating solid walls requires internal or external insulation. While the costs vary, with external being more expensive, both methods offer similar energy savings. The choice to implement internal or external is primarily based on consumer preference and individual property characteristics. As such, the capital cost of upgrading solid walls used in our analysis reflects the average of internal and external insulation costs provided by a 2017 BEIS review^{iv} (also used by Element Energy for CCC Sixth Carbon Budget analysis), uprated to 2021 prices in line with English Housing Survey and Energy Savings Trust estimates. Energy Savings Trust data did not include costs of internal and external solid wall insulation.

The Energy Savings Trust are undertaking a review of capital costs in 2022 to reflect recent changes in the market.

^{iv} BEIS, *What does it cost to retrofit homes?*, 2017

Table 15: Capital costs and energy savings data assumptions of individual measure improvements, by property type

	Average cost	Annual energy bill savings (%)
<i>Loft insulation (based on upgrading homes with no insulation)</i>		
Detached	£630	24%
Semi-detached	£480	14%
Terraced	£455	13%
Flat (with roof)	£470	13%
Bungalow	£680	24%
<i>Loft insulation (based on upgrading homes with partial insulation from 120mm)</i>		
Detached	£480	2%
Semi-detached	£390	1%
Terraced	£370	1%
Flat (with roof)	£390	1%
Bungalow	£480	2%
<i>Cavity wall insulation</i>		
Detached	£1,800	28%
Semi-detached	£1,000	16%
Terraced	£580	9%
Flat	£395	7%
Bungalow	£800	12%
<i>Solid wall insulation</i>		
Detached	£10,611	37%
Semi-detached	£8,312	22%
Terraced	£5,500	13%
Flat	£4,575	10%
Bungalow	£8,050	17%

Source: Energy Saving Trust, 2021. BEIS, 2017.

ENDNOTES

- ¹ Cornwall Insight, April 2022.
- ² More in Common, *Britons and the Cost of Living*, November 2022
- ³ Public First, *Energy Bills and Fuel Poverty*, September 2022
- ⁴ Institute for Government, *Implementing the Fuel Poverty Strategy*, 2014
- ⁵ Hansard, Warm Homes and Energy Conservation Bill, Friday 10 March 2000
- ⁶ An archived version is available at Fuel Poverty Strategy, 2021
- ⁷ *Financial Times*, 22 October 2011
- ⁸ Hills Fuel Poverty Review, 15 March 2012
- ⁹ BEIS, *Consultation on the Fuel Poverty Strategy for England*, September 2019
- ¹⁰ BEIS, *Fuel poverty trends 2022*, February 2022
- ¹¹ Scottish Government, *Scottish house condition survey: 2019 key findings*, December 2020, and Scottish Government, *Latest estimates of Fuel Poverty and Extreme Fuel Poverty under the proposed new definition - following Stage 2 of the Fuel Poverty (Targets, Definition and Strategy) (Scotland) Bill*, May 2019
- ¹² Ofgem, Warm Home Discount [accessed November 2022]
- ¹³ BEIS, *Warm Home Discount - Final Stage Impact Assessment*, April 2022
- ¹⁴ BEIS, *Warm Home Discount - Final Stage Impact Assessment*, April 2022
- ¹⁵ HMG data cited in Citizens Advice, *The best way to tackle the cost of living crisis in April is through targeted support*, January 2022
- ¹⁶ BEIS, *Household Energy Efficiency Statistics*, October 2022
- ¹⁷ Resolution Foundation, *Back on Target*, May 2022
- ¹⁸ *Hansard*, 15 February 2022, UIN 120834
- ¹⁹ Hills Fuel Poverty Review, *Getting the measure of fuel poverty - Final Report of the Fuel Poverty Review*, March 2012
- ²⁰ For example Centre for Sustainable Energy, *Social tariffs – a solution to fuel poverty?*, April 2006.
- ²¹ Institute for Government, *Implementing the Fuel Poverty Strategy*, 2014
- ²² Cornwall Insight, August 2022
- ²³ Based on SMF analysis of Living Costs and Food Survey, 2019/20
- ²⁴ ONS, *Energy efficiency of housing in England and Wales*, 2020
- ²⁵ Wise, F., *How we measure energy efficiency in homes isn't working*, The Conversation, July 2021.
- ²⁶ Ofgem, *Warm Home Discount Annual Report: Scheme Year 10*, January 2022
- ²⁷ Tony Blair Institute for Global Change, *Target Practice: Can Government Really Target its Energy Price Guarantee by April?*, October 2022
- ²⁸ Based on £140 million search costs for ECO4 2022-26. BEIS, *ECO4 Impact Assessment*, April 2022.
- ²⁹ Tony Blair Institute for Global Change, *Target Practice: Can Government Really Target its Energy Price Guarantee by April?*, October 2022

- ³⁰ SMF analysis of Living Costs and Food Survey, 2019/20.
- ³¹ See <https://www.citizensadvice.org.uk/about-us/our-work/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/getting-support-to-those-who-need-it-how-to-improve-consumer-support-in-essential-services/>
- ³² HMT, *Autumn Statement*, November 2022.
- ³³ Child Maintenance and Enforcement Commission, *Reports and Accounts for four months to 31 July 2012*, 2012
- ³⁴ BEIS, *Warm Home Discount, Final Stage Impact Assessment*, April 2022
- ³⁵ Centre for Sustainable Energy, *Social tariffs – a solution to fuel poverty?*, April 2006
- ³⁶ Resolution Foundation, *A chilling crisis*, 2022
- ³⁷ Dubai Electricity and Water Authority
- ³⁸ Khaleej Times, September 2022.
- ³⁹ NEF, *Warm Homes, Cool Planet*, September 2022 and NEF, Director of research & chief economist Alfie Stirling on Twitter.
- ⁴⁰ Public First calculations from ONS, Living Costs and Food Survey data
- ⁴¹ Public First/SMF calculations from ONS, Living Costs and Food Survey data
- ⁴² Ibid.
- ⁴³ Citizens Advice, *WaterSure scheme*, February 2020.
- ⁴⁴ Ofgem, *Price cap to increase by £696 from April*, 3 February 2022.
- ⁴⁵ ONS, *Energy Efficiency of housing in England and Wales, 2022*. Scottish Government, *Heat In Buildings Strategy, 2021*.
- ⁴⁶ CCC, *Progress report to Parliament, 2022*.
- ⁴⁷ HMT, *Autumn Statement*, November 2022.
- ⁴⁸ SMF analysis of EHS 2019/20.
- ⁴⁹ BEIS and DCLG, *Each Home Counts*, December 2016
- ⁵⁰ E3G, *Future UK Energy Price Support*, November 2022
- ⁵¹ House of Commons Environmental Audit Committee, *Energy Efficiency of Existing Homes*, March 2021
- ⁵² E3G, *Future UK Energy Price Support*, November 2022
- ⁵³ CCC, *Sixth Carbon Budget, 2021*.
- ⁵⁴ BEIS Select Committee, *Energy efficiency: building towards net zero: Government Response to the Committee’s Twenty-First Report of Session 2017–19*, October, 2019
- ⁵⁵ DLUC, *English Housing Survey, 2020 to 2021: Energy*
- ⁵⁶ BEIS Select Committee, *Energy efficiency: building towards net zero: Government Response to the Committee’s Twenty-First Report of Session 2017–19*, October, 2019
- ⁵⁷ House of Commons Environmental Audit Committee, *Energy Efficiency of Existing Homes*, March 2021
- ⁵⁸ DLUC, *English Housing Survey, 2020 to 2021: Energy*
- ⁵⁹ DLUC, *English Housing Survey, 2020 to 2021: Energy*
- ⁶⁰ SMF analysis of Living Costs and Food Survey, 2019/20.

- ⁶¹ House of Commons Environmental Audit Committee, *Energy Efficiency of Existing Homes*, March 2021
- ⁶² BEIS, *ECO4 Impact Assessment*, 2022.
- ⁶³ Gemserv, *ECO Plus Supply Chain Market Research*, 2022
- ⁶⁴ BEIS, *Government joins with households to help millions reduce their energy bills*, November 2022
- ⁶⁵ BEIS, *ECO4 Impact Assessment*, 2022.
- ⁶⁶ Environmental Audit Committee, *Energy Efficiency in Existing Homes*, 2021
- ⁶⁷ Energy Saving trust, *Written evidence submission for Lords Environment and Climate Change Committee inquiry*, 2022
- ⁶⁸ Environmental Audit Committee, *Energy efficiency of existing homes*, March 2021
- ⁶⁹ BEIS, *Household Energy Efficiency Statistics*, 24 March 2022
- ⁷⁰ In line with estimates presented by DLUC's analysis of the English Housing Survey. DLUC, *English Housing Survey, 2020 to 2021: Energy*
- ⁷¹ BEIS, *Household Energy Efficiency Statistics*, October 2022
- ⁷² National Audit Office, *Green Deal and Energy Company Obligation*, April 2016
- ⁷³ *ibid.*
- ⁷⁴ National Audit Office, *Green Homes Grant Voucher Scheme*, September 2021
- ⁷⁵ Energy and Climate Change Directorate, Scottish Government, *Energy Efficient Scotland*, 2018; House of Commons Environmental Audit Committee, *Energy Efficiency of Existing Homes*, March 2021
- ⁷⁶ HMT, *Autumn Statement 2013*, December 2013, p. 66
- ⁷⁷ Carbon Brief, *Analysis: Cutting the 'green crap' has added £2.5bn to UK energy bills*, January 2022
- ⁷⁸ Bringing it in line with the announced Ofgem price cap for Q4 2022
- ⁷⁹ Energy Act 2013
- ⁸⁰ BEIS, *Digest of UK Energy Statistics*, July 2022, Table 5.6.B
- ⁸¹ *Daily Mail*, 13 June 2022
- ⁸² HMG, *British Energy Security Strategy*, April 2022
- ⁸³ Commons Second Reading to Royal Assent in eight days
- ⁸⁴ Public First / ECF, *Low Cost High Security Energy*, November 2022
- ⁸⁵ Citizens Advice, *Market Meltdown: How regulatory failures landed us with a multi-billion pound bill*, January 2022
- ⁸⁶ National Audit Office, *The energy supplier market*, June 2022
- ⁸⁷ Ofgem, *Electricity settlement reform* [accessed November 2022]
- ⁸⁸ Faruqi, A. and Bourbonnais, C., *Time of Use Rates: An International Perspective*, Energy Regulation Quarterly, June 2020.
- ⁸⁹ Committee on Climate Change, *The Sixth Carbon Budget - Electricity generation*, December 2020
- ⁹⁰ HMG, *British Energy Security Strategy*, April 2022
- ⁹¹ BEIS, *Review of Electricity Market Arrangements*, July 2022
- ⁹² DLUHC, *English Housing Survey, 2019 to 2020: Energy, Annex Table 3.2*
- ⁹³ DLUHC, *English Housing Survey, 2020 to 2021: Energy*