# Greener Homes

## Decarbonising the housing stock

TENDO

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# Foreword

Tackling the climate emergency is a pressing issue that not only affects the future of our planet, but also the future of societies and economies across the world. There is global consensus that to reduce carbon emissions we must act now.

Last year, the Royal Institute of British Architects (RIBA) joined the global declaration calling an environment and climate emergency; just two days after the UK Government passed a law stipulating the UK end its contribution to global warming by 2050, by bringing all greenhouse gas emissions to net zero. We also launched the RIBA 2030 Climate Challenge, which calls on architects and their clients to meet net zero (or better) whole life carbon for new and retrofitted buildings by 2030 by reducing operational energy, embodied carbon and potable water usage.

We know the UK needs to improve the energy efficiency of its housing stock to make significant progress to reach net zero. Currently the UK has the least energy efficient housing stock in Europe, and it is expected that 85 per cent of the current stock will still be in use in 2050. In the UK 19 per cent of carbon emissions come from heating buildings, 77 per cent of which comes from heating homes.

Unless we see urgent Government action, the UK will be exposed to a housing emissions crisis. The coronavirus pandemic has seen homeworking become the norm for many, and it is likely that this will continue and change our working habits in the future. This means, however, that the share of total carbon emissions caused by our housing stock is likely to increase, making the case for urgent action stronger than ever.

Whilst the recent Government announcements on the Green Homes Grant are welcome, what has been missing to date is consistency of these programmes and a clear road map of how improving the housing stock will be achieved. To ensure all the homes that require retrofitting are reached there needs to be a clear National Retrofit Strategy. This strategy must include clear governance arrangements, targets, and a long-term action plan which identifies incentives and provides adequate funding.

A retrofitting programme of this scale is unprecedented, but doing so will not only help the environment, but will help a green economic recovery from the coronavirus pandemic. The Government has an opportunity to incentivise investment, increase consumer spending, create jobs, upskill workers, alleviate pressure on the NHS whilst mitigating climate risks.

Improving the energy efficiency of the existing housing stock benefits not only the environment, but also those that live in and use these buildings, it reduces running costs, helping to alleviate fuel poverty and increases health outcomes.

Together, the Government and industry must act now.

Professor Alan M Jones
RIBA President

# Executive Summary

The UK Government has enshrined in law its target that the UK reach net zero greenhouse gas emissions by the year 2050. If this target is to be met, the almost total elimination of emissions from the UK's housing stock will be required. The residential sector was responsible for 19 per cent share of the total UK carbon emissions in 2019,[1] up from 15 per cent in 2008. This increase represents the failure of successive governments to tackle emissions from our housing stock. More worrying, though, is that changes in behaviour brought about by the coronavirus pandemic, such as the uptake of home working will further shift the share of total emissions towards housing. Unless we see urgent government action, the UK is sleepwalking into a housing emissions crisis.

This report focuses on what needs to be done to improve the energy efficiency of our housing stock. More energy efficient homes require less energy to provide the same benefits in terms of warmth and comfort, in turn, reducing carbon emissions. Achieving net zero will require widespread improvements to homes, such as insulation in lofts and walls; draught proofing doors, windows and floors; double or triple glazing; smarter appliances; as well as changes to heating systems. On top of environmental considerations, improving energy efficiency offers a suite of other benefits during a pandemic-induced recession, such as economic stimulus, better health outcomes and reduced fuel poverty.

After an extended period of declining financial support and ineffective policymaking towards energy efficiency improvements in England, the Government's Clean Growth Strategy, which sets targets for improving energy efficiency was a welcome development. Troubling, however, is the continuing absence of a comprehensive, cross-departmental plan for achieving these targets. That is why this report recommends that the Government bring forward a National Retrofit Strategy – a long term policy and investment programme for upgrading the energy efficiency of England's housing stock.


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As part of the National Retrofit Strategy, the Government must set out the required annual public investment to reach their target of all homes reaching Energy Performance Certificate (EPC) Band C by 2035. The Green Homes Grant is a welcome step in the right direction for Government investment in energy efficiency. But we argue the Government should go further: front-loading the £9.2 billion it is has allocated for the next 10 years so that it is spent over the course of the current Parliament. This level of investment would go a considerable way to improving the energy efficiency of our homes and provide much needed economic stimulus.

Critical to a successful National Retrofit Strategy will be a series of policies trying to build up demand amongst homeowners who are 'able to pay', an area where past efforts have fallen short. We recommend the Government use the tax system to embed energy efficiency in the housing market. First and foremost, Stamp Duty Land Tax should be tied to the energy efficiency of a property, providing an incentive for homebuyers and owners to invest. HM Treasury should then look at extending the principle of embedding energy efficiency across the tax system, including incentives for those paying Inheritance Tax, Capital Gains Tax and Council Tax on domestic properties. Ensuring consumers have access to the right information and low-cost credit is also essential in facilitating able to pay demand.

Poor energy efficiency is a driver of fuel poverty, where the cost of heating can be unaffordable for a household. Funding for the Energy Company Obligation (ECO), the Government's flagship policy for addressing fuel poverty, has been left between a rock and a hard place, with concerns about impact on bills for the poorest households leading to it receiving less, despite the fact more investment offers the best long term path to reductions in energy bills. The National Retrofit Strategy should look at how the ECO can be better implemented and put on a sustainable footing, and the Government should also look at how it can better target funding for benefits like the Winter Fuel Payment, which at present don't incentivise improving the energy efficiency of a home.

There are important differences between the social and private rented sectors; for one, England's private rented sector is its least energy efficient housing tenure, while social housing is the most energy efficient. What links the two, however, is the need for landlords to be able to consider choices about energy efficiency upgrades over the long-term. The National Retrofit Strategy must include a clear timetable for when minimum standards on energy efficiency will be increased. This will help inform landlords, in both sectors, to make the most cost-effective decisions about improvements.

New homes being built today that require retrofitting in the future are adding work to be carried out down the line. It is vital, therefore, that new homes are built to a sufficiently high standard. Standards are important, too, when it comes to ensuring retrofitting work is of the highest quality – a benchmark that too many retrofits to date have not met. Recent Government interventions suggest a renewed emphasis on retrofit standards, but the National Retrofit Strategy should extend this focus across all energy efficiency policy.

Improving the energy efficiency of the housing stock has for too long fallen on the list of Government priorities. The rise in home and flexible working mean that there is no longer any time to waste if the UK is to achieve the emissions reductions required to meet its climate goals. The Government should take the opportunity ahead of the UK hosting COP26 in 2021 to signify to the world that it is serious about the climate emergency by bringing forth an ambitious and thorough National Retrofit Strategy.

The residential sector was responsible for

19%

of the total UK carbon emissions in 2019, up from

15% in 2008

# Recommendations

The recommendations detailed below are intended to help inform HM Treasury's Net Zero Review and therefore relate to tax and spending. However, in order to achieve the UK's net zero targets, a whole Government, cross-departmental approach will be required. The Cabinet Office, the Department for Business, Energy and Industrial Strategy, and the Ministry for Housing, Communities and Local Government will need to work with the Prime Minister and the Chancellor to ensure that we have adequate funding and policies to mitigate the UK's carbon emissions.

The RIBA recommends that the Government:

## Capital investment decisions

- Front-load the £9.2 billion promised for energy efficiency improvements so that spent during the 2019 – 2024 Parliament.
- Work across relevant departments to ensure accelerated delivery of this funding is allocated during the forthcoming 2021 Comprehensive Spending Review.

## Able to pay homes

- Implement a differential that ties Stamp Duty Land Tax to the energy efficiency of the home being sold, such as a sliding scale of 3 per cent change to Stamp Duty Land Tax liability per Standard Assessment Procedure point from the median. This could be designed to be revenue-raising.
- Make clear its intention to extend the principle of embedding energy efficiency across the tax system, including incentives for those paying Inheritance Tax, Capital Gains Tax and Council Tax on domestic properties.

## Fuel poor households

- Consider how existing fuel poverty schemes can be reprioritised to incentivise energy efficiency and to focus on improving the energy efficiency of fuel poor homes.

## The private rented sector

- Re-introduce the Landlord's Energy Savings Allowance to allow landlords in the private rented sector to claim for part of their energy efficiency measures against their income tax liabilities.

The Government should front-load the

**£9.2 billion**

promised for energy efficiency improvements over a ten-year period so that it is spent during this Parliament

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# Introduction

The aim of this piece of work is to conduct a full audit of the UK Government's energy efficiency policies. It is intended to be used as a submission to HM Treasury's Net Zero Review, a stocktake into funding the transition to a net zero greenhouse gas economy, which is currently under way. The report takes a full look at all Government taxation and spending levers that are available to influence the energy efficiency of the UK housing stock. As part of this work, an assessment is made about how the current balance of Government spending and taxation on UK housing and energy efficiency could be put to better use. Many of the solutions identified here would be revenue neutral, involving no change to the overall balance of the Exchequer.

The report also considers additional future public investment that the Government has committed to undertaking, and makes determinations as to the way that this funding can be best directed to maximise energy efficiency, and promote other Government objectives such as reductions in fuel poverty and stimulating the post-pandemic economy.

Given the desire to focus the work on HM Treasury's Net Zero Review, only recommendations that relate to tax and spend policy are detailed at the beginning of the report. Nevertheless, in keeping with the ambition to provide a comprehensive review of the entire body of Government policy with respect to energy efficiency, the report also takes stock of existing policy and makes recommendations that fall beyond the remit of HM Treasury, including regulations for the private rented sector, the social rented sector, and new homes, as well as recommendations for improving the quality of public information and advice about energy efficiency. The report focuses on policy in England, where the challenge is most acute. It is worth also making clear that the report is primarily aimed at the energy efficiency retrofit, though it does suggest some policy interventions to improve the energy efficiency of new homes. The rationale for this is that it is existing homes that are where the bulk of the challenge lies: 85 per cent of buildings that will be in use in 2050 have already been built, and new homes being built today are predominantly EPC Band A and EPC Band B.[2]


of buildings that will be in use in 2050 have already been built

# 1

# The energy efficiency challenge

## Housing emissions

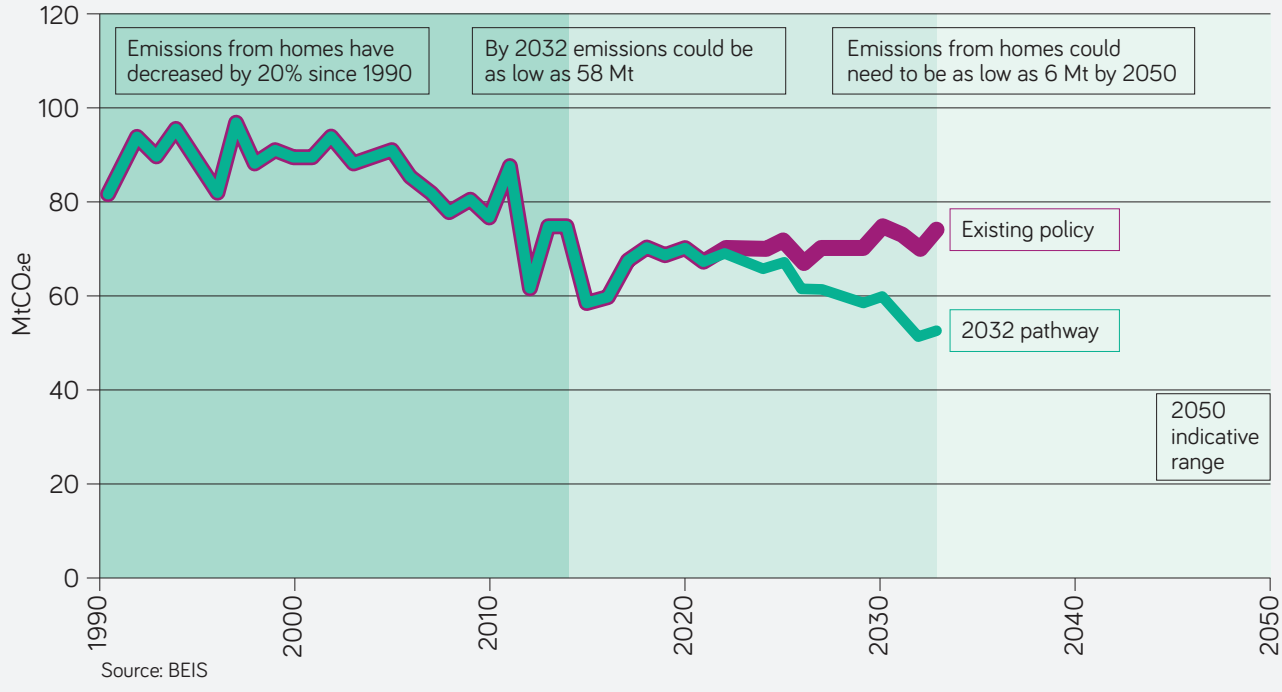
In May 2019, at the request of the UK Government, the Committee on Climate Change (CCC) set out a roadmap for how the UK could viably become a net zero greenhouse gas emissions economy by 2050.[3] The 2050 target is seen by many countries as the key target if they are to restrict global warming to no more than 2°C above pre-industrial levels, in line with the 2015 Paris Agreement. A month later, in June 2019, the UK Parliament enshrined into law this net zero target, which commits the UK to reduce emissions by at least 100 per cent less than 1990 emissions levels.[4] This made the UK economy the first G20 economy to take this step, after Sweden's 2017 Climate Act legislated for net zero by 2045.[5] The 2019 UK legislation represented a considerable increase in required emissions reductions as compared with the previous target of an 80 per cent reduction mandated by the Climate Change Act 2008.[6] Achieving this goal will require widespread and deep emissions cuts across different sectors of the UK economy, with some of the difference being eventually made up by measures taken to remove $CO_2$ from the atmosphere.[7] The CCC continue to argue that a swathe of measures to improve the energy efficiency of the UK's building stock – especially housing – will be central to the national effort to reach net zero emissions by 2050.[8]

However, the UK is already falling behind the emissions reductions that will be required if it is to reach those targets. Although the UK is on track to meet the reductions required to deliver the third carbon budget (2018 to 2022), it is set to miss later carbon budgets, with the fourth (2023 to 2027) and fifth (2028 to 2032) set to be missed by 5.6 and 9.6 per cent respectively.[9] This state of affairs is particularly worrisome given that these carbon budgets were both tied to the 80 per cent reduction in emissions mandated by the Climate Change Act 2008, and not tied to the path of emissions reductions that will be required to meet the new and more ambitious net zero target.

Failure to tackle emissions from the UK housing stock is one of the main contributors to this growing divergence between what carbon budgets will require and predicted outcomes.[10] The UK, particularly England, continues to have one of the least energy efficient housing stocks in Europe.[11] The latest Government estimates suggest that 19 per cent of total UK carbon emissions come from the residential sector.[12] The CCC are clear that to meet net zero the entire housing stock will need to be decarbonised by 2050.[13] A decarbonised housing stock is one in which the energy consumption of homes is not a net contributor to greenhouse gas emissions. It would involve a situation where the vast majority of homes themselves would be carbon neutral or better, with the remaining polluting homes being negated by homes that actually generate energy, such as through the use of solar panels.

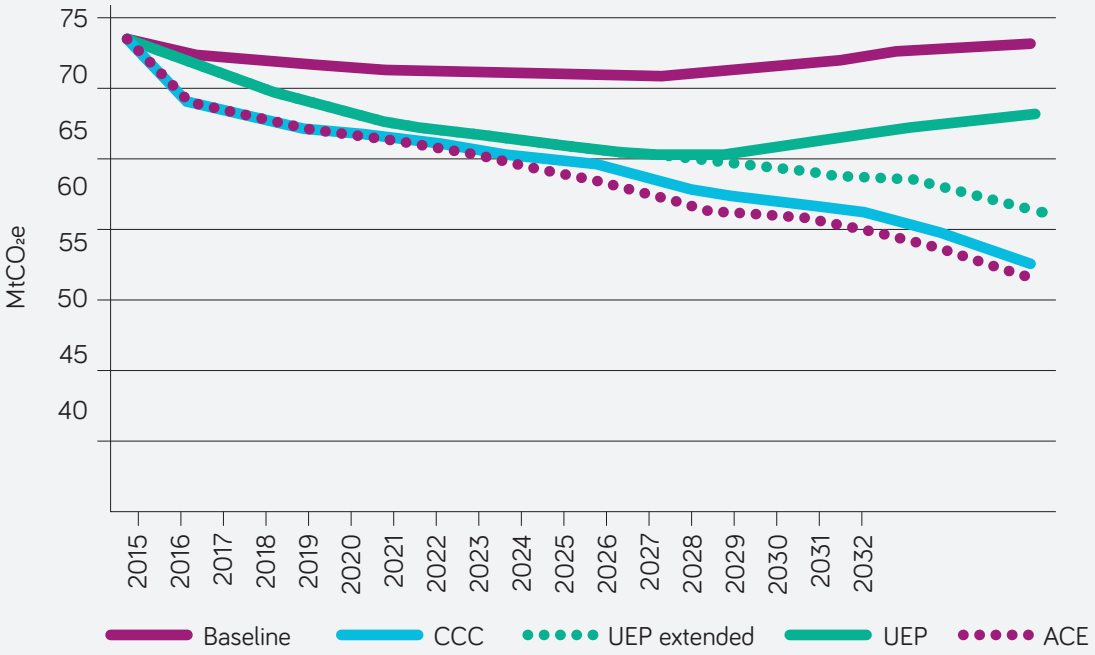
Figure 1, from the Government's Clean Growth Strategy published in 2017[14], shows the scale of the challenge for what is required in terms of reductions in housing emissions.[15] Temperature-adjusted estimates suggest that, since 2015, the level of carbon emissions from the residential sector is effectively unchanged. In 2015, temperature-adjusted estimates indicated that the total carbon emissions from the residential sector was 70.7 Mt, falling only to 70.5 Mt by the end of 2019.[16] As Figure 2[17] shows, emissions from

**Figure 1: Actual and projected emissions in homes, taking into account the clean growth pathway, 1990-2050**




Source: BEIS

**Figure 2: Projected Emissions from Residential Buildings, based on Current Baseline, Updated Energy and Emissons Projections (UEP), UEP with Extended Ambition, CCC Carbon Budget Targets, and Association for the Conservation of Energy (ACE) Modelling.**




Source: Centre on Innovation and Energy Demand

the residential sector are projected to progressively deviate from the CCC's least cost pathway, even accounting for existing and planned Government policy in this area. The least cost pathway is the emission reductions trend line that progresses the UK towards its 2050 target at least cost to the economy. As outcome diverge from the least cost pathway the ultimate cost of decarbonisation to the UK will continue to grow.

The lasting changes in society wrought by the coronavirus crisis ought to bring this challenge into clearer focus. The pandemic has seen large swathes of workers in the economy working from home instead of travelling to their workplace. There is mixed evidence on whether the overall effect of these changes in working patterns will have a positive or negative effect on total energy consumption, and hence emissions, in the long run.[18] The main source of potential energy savings is the reduced distance travelled for commuting, potentially with an additional contribution from lower office energy consumption. However, the more rigorous studies that include a wider range of impacts (e.g. non-work travel or home energy use) generally find smaller savings, and some even find neutrality or a net worsening of total emissions as result of the pandemic-related changes to behaviour. There are other factors that will impact the net effect, such as the proportion of people now working from home who were using public transport, and the proportion who travelled by car.

However, the evidence is clear that by shifting the economy towards higher home energy consumption, the extent to which any benefits can be realised will depend on the energy efficiency of the housing stock. Countries with more energy efficient housing stocks are likely to reap further benefits, with those who struggle with energy efficiency falling further behind. The residential energy efficiency situation risks becoming a crisis if action is not taken urgently.

**In 2019 the Government took the landmark step of writing into law its target for achieving net zero-carbon emissions by 2050, making the UK the first major economy to take any such measure. The UK's residential sector now accounts for 19 per cent of total carbon emissions, a share that has been increasing since the 1990s despite an absolute reduction in emissions of around one fifth in that time. Other sectors – such as transport and energy – have already seen significant reductions towards the 2050 goal. With the changes in societal behaviours arising from the coronavirus pandemic, there is likely to be a shift in the proportion of emissions that come from housing. It is in this context that a set of policies to improve the energy efficiency of the UK housing stock has never been more crucial to a credible strategy to reach net zero by 2050.**

## Why energy efficiency?

This report focuses on the energy efficiency of the UK housing stock, assessing existing Government policy towards improving the energy efficiency of the housing stock, and what more can be done to ensure that residential energy efficiency is on a trajectory that will allow the UK to meet our legally enshrined climate obligations at least cost.

Breaking the recent trend of stagnation in housing emissions reductions will require a major upgrade of the energy performance of our homes. To achieve full decarbonisation of the housing stock, the heat supply of buildings will also need to be decarbonised. But the decarbonisation of the heat supply itself will require the necessary reductions in energy efficiency to be put on a pathway to net zero that is of an acceptable cost.[19] This report therefore focuses solely on improving energy efficiency as a means of reducing carbon emissions. There is a widespread recognition that improvements to energy efficiency, given the high returns on investment in the long run, represent an obvious place for the UK to commence our efforts to make the deep cuts to our greenhouse gas emissions that will be required. Lord Deben, Chairman of the CCC, has described energy efficiency as "by far the cheapest way of reducing our emissions."[20]

The coronavirus pandemic, the associated economic downturn and the changes to consumer behaviour (such as home working, touched on earlier in this report) have made the already strong case for improving energy efficiency even more robust. With the UK economy having suffered the worst recession since records began, the case for public investment to stimulate economic growth and create jobs has rarely been stronger. There has been work done to suggest that a reduction in total energy usage in homes of around 25 per cent by 2035 could see between 66,000 and 86,000 jobs sustained annually across all regions of the UK.[21] There is also evidence that this same scenario would lead to net economic growth over the same period.[22]

At a time when living standards are seeing a considerable squeeze, the net reductions in energy bills offered by improved energy efficiency would be of considerable benefit to consumers. Energy efficiency measures have already saved households around £290 per year since 2008.[23] It is estimated that reducing total energy use by 25 per cent by 2035 would result in average energy savings for consumers of roughly £270 per household per year.[24] Energy efficiency improvements have an immediate "direct rebound" effect of a boost in the consumption of energy, as more households feel they can afford to maintain a warmer home.[25] It also leads to a sustained boost to the economy and consumption through increased disposable incomes in the long term.

**Making progress towards our legally enshrined climate obligations will require extensive improvements to the energy efficiency of the UK housing stock. Driving the transition of a society to become a net zero emitter while simultaneously seeking to promote social justice and meet the unprecedented challenge of the coronavirus pandemic economic recovery is an enormous task and would be demanding of any government. But the energy efficiency landscape is one in which those trade-offs are far less acute and often do not exist.**

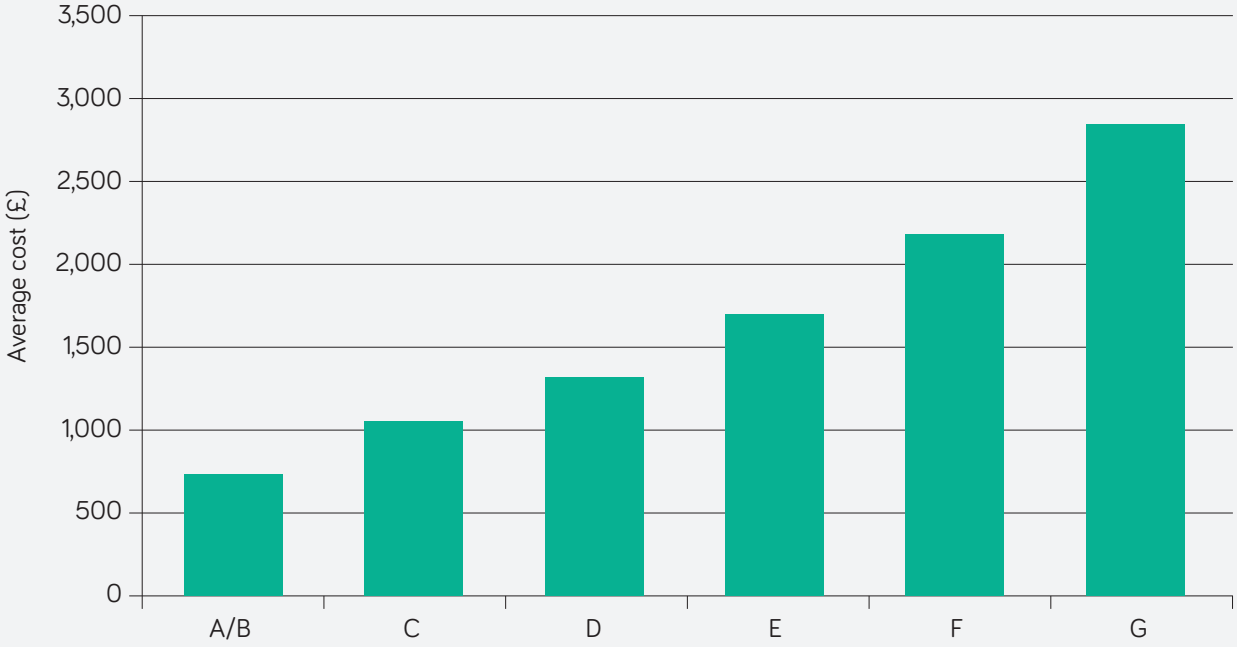
## Measuring energy efficiency

Broadly speaking, energy efficiency is the use of less energy to provide the same service. The energy efficiency of a building is its ability to retain heat and produce light. The better a building is able to retain heat and produce natural light, the further each unit of energy required to light and heat it will go. Typical interventions to improve the energy efficiency of buildings include: insulation in lofts and walls, both cavity and solid; draught proofing doors, windows and floors; smarter appliances; and superior glazing systems, as well as changes to method of heating, such as the installation of a heat pump or district heating systems.

The performance of these combined measurements is documented in an Energy Performance Certificate (EPC), graded on a scale from G (least efficient) to A (most efficient). EPCs are based on two different metrics, a rating related to $CO_2$ emissions and a fuel cost-based energy efficiency rating. The energy efficiency rating is based on a Standard Assessment Procedure (SAP) – which is the methodology used by the Government to assess the energy performance of homes. The SAP assesses how much energy a home will consume, based on standard assumptions for occupancy and behaviour. Broadly, the higher the SAP score the lower the running costs of the home in question. As Figure 3[26] shows, the annual running cost of a Band C rated home are £270 lower than the average Band D rated home and £650 less than the average Band E rated home.

There are, however, well-founded concerns that EPCs are an imprecise way to measure energy efficiency. The SAP does not include unregulated energy sources, which is a primary cause of the well documented performance gap between the design and the actual operations of a building. There is a real case to be made that the SAP be revised to include unregulated energy sources to calculate the affordability of energy usage in a new home. This could then be reviewed a year after the property has been occupied with Post Occupancy Evaluation, measuring actual energy usage.

**Figure 3: Average annual cost of energy in homes by energy eficiency rating, 2014**




Source: DCLG

Additionally, EPCs have been proven to be very inaccurate when compared with actual energy usage since floor areas are consistently misrepresented. Research by the property technology solution provider Spec[27] has shown that as many as 2.5 million EPCs (15 per cent of the total) are incorrectly rated. The paper found that an estimated 35,028 properties are being let illegally, and for 1 in 4 properties, the area reported on EPCs varied by at least 10 per cent (100 Sq Ft) from Spec's accurately measured size. The problem of the inaccuracy of EPCs is particularly acute in older homes, where a reduced data Standard Assessment Procedure (RDSAP) is often used. This measure is even less accurate than the SAP. Given the concentration of poor energy efficiency amongst older homes, there is a strong case for an update to the SAP and RDSAP so that it better captures the actual operational energy use of a property.

With these problems in mind, and with EPCs coming to be used across many different aspects of Government policy with regards to both retrofitting and new homes, the Government consulted on the continued use of EPCs in July 2018.[28] The Government's response to this consultation was published on 30 September 2020.[29] It is a step in the right direction on EPCs by acknowledging that they must better reflect real world performance. It sets the correct direction of travel that EPCs ought to eventually be a more accurate measurement.

Despite the obvious shortcoming of the EPC and SAP system detailed here, and the recognition from the Government that EPCs fall short in some areas, we would caution against hasty changes to the system. The most recent wave of the Department for Business, Energy, and Industrial Strategy (BEIS)'s Public Attitudes Tracker[30] published in 2019 found that six in ten people were aware of EPCs. Though the improvements in public awareness have plateaued in recent years, and there is clearly more to be done to further improve this awareness (see chapter on information and enforcement), current levels represent a considerable improvement from the low levels of awareness when EPC were introduced in 2007.

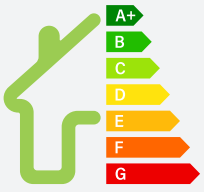
**Given the hard-won achievement of improved public awareness of EPCs and what they mean, and given that EPCs have come to be so central to Government targets, both for energy efficiency and for fuel poverty (also for Government policies in the private and social rented sectors), we would caution against any kneejerk changes to the EPC system that would put these inroads at risk. Indeed, this report suggests a further suite of policy ideas that would encourage further awareness of EPCs and aim to incentivise increased demand for energy efficiency improvements by tying various taxes to the EPC ratings system.**

## UK energy efficiency targets

The Government's 2017 Clean Growth Strategy is the central document laying out policy towards achieving emissions targets. It set a target to upgrade as many houses as possible to EPC Band C by 2035 "where practical, cost effective and affordable".[31] The Clean Growth Strategy also committed the Government to achieving EPC Band C for both fuel poor households and as many rented homes as possible. The CCC have said that they believe these targets are consistent with the UK meeting its fourth and fifth carbon budgets at least cost, assuming the conditions attached are not defined in a way so as to be too restrictive.[32] These targets correspond with the level of emissions reductions that will be needed by 2035, if the Government is then to go on to meet its 2050 targets with our incurring unnecessary additional cost burdens. The Government admitted to the Business, Energy, and Industrial Strategy (BEIS) Select Committee in mid-2019, 18 months after setting the targets in the 2017 Clean Growth Strategy, that it had not determined a fixed number of houses and upgrades that it would deem "practical", "cost-effective" and "affordable" to retrofit, and similarly it had not undertaken any formal attempt to define what it meant by those terms.[33] The BEIS Select Committee rightly noted that this was avoiding scrutiny, saying that

> "without concrete, measurable ambition, the Government evades accountability on whether its policy aligns with what is required to meet its statutory climate and fuel poverty obligations."

**A whole year after, the BEIS Select Committee found that the Government was yet to properly define precisely what its EPC targets mean, and warned that they must not hide behind this vagueness, it remains the case that the Government have yet to put on record what it believes its energy efficiency targets means in meaningful terms, let alone bring forward the long-awaited comprehensive policy strategy – what we are calling a National Retrofit Strategy – that will be needed to achieve these aims. We are content with the CCC's determination that the Government's targets, reasonably defined, are consistent with UK meeting its immediate emissions reductions goals. This report instead suggests a combination of policies that, if implemented, will put the UK on track to meet these targets. If, and when the Government does as it has committed to do and brings forward a strategy, it should also be clearer about what its energy efficiency targets mean in practice.**




6 in 10

people are aware of EPCs

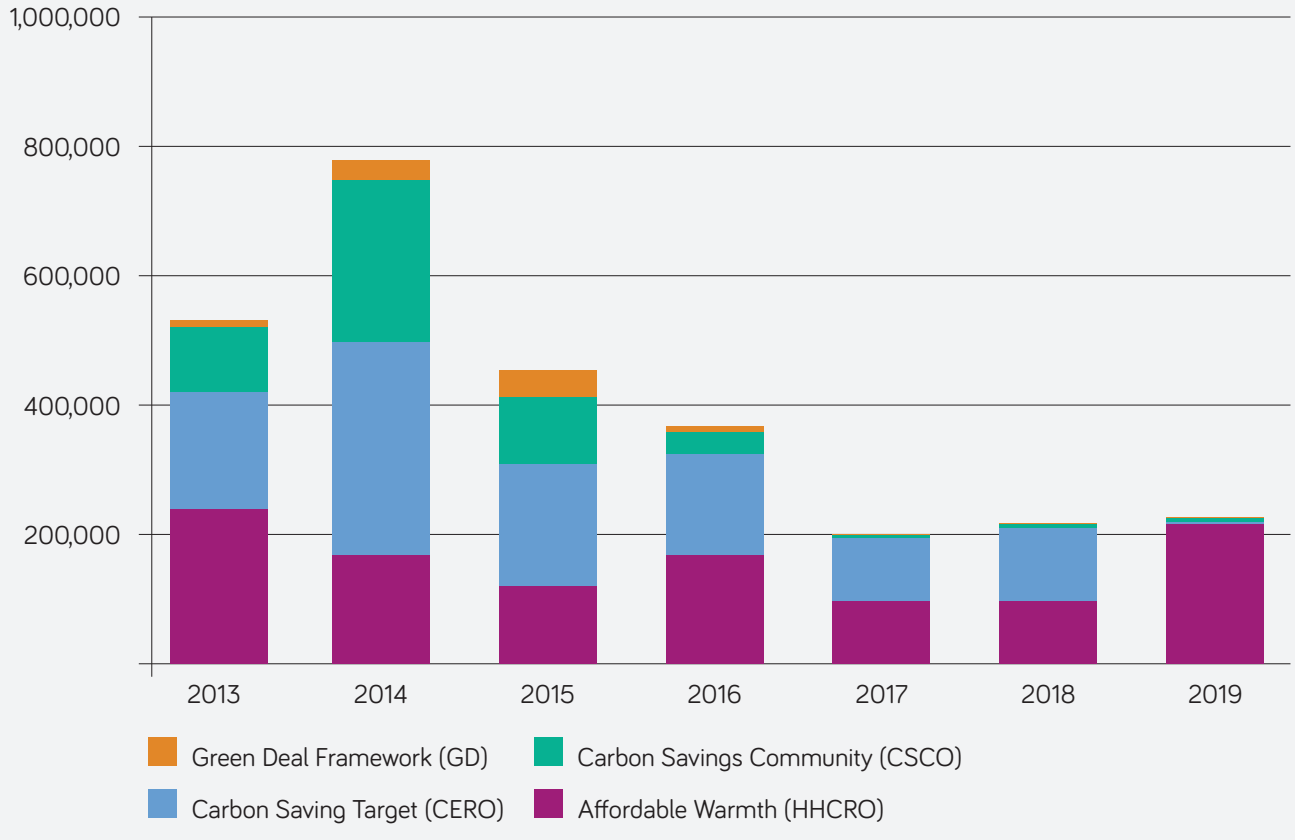
## Progress to date

Recent public policy aimed at promoting energy efficiency retrofits in England has not been successful. Figure 4[34] below shows a pattern in which the number of energy efficiency improvement installations occurring in England has been falling just at the time when it needs to be beginning to be ramped up significantly. This can partly be attributed to a decrease in the availability of "low-hanging fruit" – cheap home installations that can lead to considerable improvements in energy efficiency – with the remaining potential for energy efficiency interventions becoming more expensive, but also to a drastic reduction in public funding available for energy efficiency and a lack of a coherent set of Government policies aimed at boosting private sector demand. The result is that England has one of the least energy efficient housing stocks in Europe and is on track to miss interim EPC targets that will be necessary to decarbonise the housing stock by 2050 at least cost.[35]

Each chapter of this report gives a brief account of recent history of energy efficiency policy in England for the policy area in question. The aim is not to focus on previous shortcomings for their own sake, but to add context and emphasise the lessons that future policy interventions must learn if they are to be successful. The report also assesses how promising, more recent policy developments, such as the Green Homes Grant, fit within the Government's wider energy efficiency policy and efforts to meet its EPC targets.

**We do not aim in this report to analyse in detail previous Government policy in this area, which has left the UK with one of the most inefficient housing stocks in Europe and starting the transition to net zero from housing emissions from a considerable disadvantage relative to many other countries. But the shortcomings of previous attempts need to be heeded in the formulation of future Government policy, and it needs to be noted that that a major gap still exists between the UK Government's existing policy interventions and the scale of what is required to improve the energy efficiency of the UK's housing stock in line with meeting legally binding climate obligations.**

**Figure 4: Measures installed, by scheme and year**




Source: BEIS

# 2

# Housing and the Exchequer

## Kickstarting change

As well as making recommendations about the need for better regulation and the accelerated implementation of committed spending, this report also makes recommendations about how HM Treasury can better adjust its current incomings and outgoings on tax and spend measures related to the energy efficiency of residential buildings. In order to do this, first a stocktake of the various measures is conducted, which takes account of how the amounts involved have changed in recent history, what the current values are, and how forecasts suggest they are expected to change.

## Taxation – Stamp Duty Land Tax

Figure 5[36] below shows Stamp Duty Land Tax receipts from residential and non-residential property. In 2018-19, provisional estimates for England suggest that £8.3 billion was raised from residential transactions and £3.5 billion was raised from non-residential transactions.

**Figure 5: Stamp duty land tax receipts, England**
by property type, £ millon

| | Residential | Non-residential |
|---|---|---|
| 2006-7 | 5,855 | 2,875 |
| 2007-8 | 6,040 | 2,855 |
| 2008-09 | 2,665 | 1,620 |
| 2009-10 | 3,080 | 1,415 |
| 2010-11 | 3,790 | 1,685 |
| 2011-12 | 3,980 | 1,710 |
| 2012-13 | 4,650 | 1,835 |
| 2013-14 | 6,130 | 2,570 |
| 2014-15 | 7,095 | 2,945 |
| 2015-16 | 7,210 | 3,265 |
| 2016-17 | 8,410 | 3,075 |
| 2017-18 | 9,070 | 3,495 |
| 2018-19* | 8,320 | 3,535 |

*provisional
Source: HMRC

In 2018-19 over

**£30 billion**

was raised from Council Tax in England

## Taxation – Council Tax

Figure 6[37] provides Council Tax receipts for England. Council Tax is an annual fee that local councils charge for the local services it provides, such as rubbish collection and libraries. It is paid by the occupier per dwelling in monthly instalments. In 2018-19, over £30 billion was raised from Council Tax in England.

**Figure 6: Council tax, England**

| | £ million |
|---|---|
| 2006-7 | 19,554 |
| 2007-8 | 20,609 |
| 2008-09 | 21,560 |
| 2009-10 | 22,071 |
| 2010-11 | 22,528 |
| 2011-12 | 22,688 |
| 2012-13 | 22,981 |
| 2013-14 | 24,125 |
| 2014-15 | 24,792 |
| 2015-16 | 25,524 |
| 2016-17 | 26,796 |
| 2017-18 | 28,314 |
| 2018-19 | 30,388 |

Source: ONS

## Taxation – VAT on construction and renovations

Another area of the tax system that effects the energy efficiency of housing is Value Added Tax (VAT) for construction and renovations. The VAT treatment of construction work is complicated. The construction of new homes is charged at a zero rate of VAT, provided certain conditions are met. Generally, VAT is charged at the standard rate – currently 20 per cent – on repair, renovation and maintenance work whatever the status of the building concerned.

Figures for VAT aren't broken down into an amount for the renovation and construction of specifically homes. There are some figures, however, on VAT declared by trade sub-sector.[38] Data is available for traders in 'Construction of buildings' however this covers more than just the construction of homes. The sector covers construction of residential and non-residential buildings and the development of building projects.[39] Traders in the 'construction of buildings' claimed more back in input tax than the value of any output tax. In 2018-19, the value of input tax claimed by the sector exceeded the output tax by £1.3 billion, that is, the sector received net VAT repayments of £1.3 billion. According to HM Treasury, however, the figure is considerably more. In a Parliamentary

Question (PQ) response on 21 July 2020, Financial Secretary to the Treasury Jesse Norman MP suggested that "reducing VAT on all property renovation, repairs and improvements would cost the Exchequer approximately £6 billion per year".[40]

## Taxation – Capital Gains Tax

HMRC have only recently been able to break down the Capital Gains Tax payable on residential property gains.[41] A PQ response estimates that Capital Gains Tax liabilities of around £1 billion arose in both 2016-17 and 2017-18 from disposals of residential property, which would translate to receipts in 2017-18 (£1,029m) and 2018-19 (£1,128m) respectively. This is a little over 10 per cent of Capital Gains Tax receipts in each year.[42] These figures are for the UK.

## Taxation – Forecasts

The Office for Budget Responsibility (OBR) publish forecasts for Government receipts twice a year. Their latest forecast was published on 11 March 2020, before the UK had entered a lockdown to slow the spread of coronavirus.[43] The forecasts, therefore, didn't account for the recession caused by the coronavirus outbreak and can't be treated as reliable estimates of future receipts, particularly in the next few years. In July 2020, the OBR considered three scenarios for the UK economy.[44] They published estimates of tax receipts under their central scenario[45] for the years 2020-21 to 2024-25. Figure 7 provides a breakdown of these forecasts. These are the best estimates for future revenues generated from taxes that can influence behaviour around energy efficiency. Of the taxes in Figure 7, the following can be said to derive receipts at least in part from the housing stock:

- Value added tax (VAT)
- Council tax
- Capital gains tax
- Inheritance tax
- Stamp duties

**Figure 7: Tax receipts and forecasts** [49]

| | £ billion | | | | | |
|---|---|---|---|---|---|---|
| | Estimate | Scenario period | | | | |
| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2024-25 |
| Income tax | 195.3 | 182.4 | 196.3 | 208.2 | 218.6 | 229.2 |
| National insurance contributions | 144.2 | 131.7 | 142.9 | 153.0 | 159.9 | 167.0 |
| Valued added tax (VAT) | 133.7 | 108.2 | 129.5 | 137.9 | 142.2 | 146.6 |
| Onshore corporation tax | 49.5 | 36.8 | 43.1 | 49.9 | 55.4 | 60.1 |
| Oil and gas revenues | 0.6 | 0.4 | 0.6 | 0.6 | 0.6 | 0.4 |
| Fuel duties | 27.6 | 22.8 | 26.5 | 29.2 | 30.0 | 30.6 |
| Business rates | 31.2 | 20.3 | 32.2 | 33.3 | 33.9 | 35.2 |
| Council tax | 36.6 | 37.2 | 39.1 | 40.3 | 41.6 | 42.9 |
| Capital gains tax | 10.0 | 10.5 | 7.6 | 10.1 | 11.1 | 12.4 |
| Inheritance tax | 5.2 | 5.4 | 5.2 | 5.3 | 5.7 | 6.2 |
| Stamp duties | 16.1 | 11.6 | 16.6 | 17.3 | 18.9 | 20.7 |
| Tobacco duties | 9.7 | 9.0 | 8.7 | 8.7 | 8.7 | 8.6 |
| Alcohol duties | 11.7 | 10.9 | 11.7 | 12.2 | 12.7 | 13.2 |
| Air passenger duty | 3.4 | 1.3 | 3.7 | 3.8 | 3.9 | 4.1 |
| Other taxes and receipts | 150.1 | 151.8 | 162.4 | 167.9 | 175.0 | 181.8 |
| **Current receipts** | **824.8** | **740.3** | **826.3** | **877.7** | **918.2** | **958.9** |

Source: OBR

## Expenditure – Winter Fuel Payment

Winter Fuel Payments in Great Britain cost £1.97 billion in 2019-20 and are forecast to cost £10 billion over the next five years.[46] Winter Fuel Payments are fixed at the cash rates of £200 per pensioner household per year where the oldest person is under 80, and £300 for households containing a person aged 80 or over, and are paid irrespective of the recipient's actual fuel bill. They are not means tested.

## Expenditure – Cold Weather Payment

Expenditure on the Cold Weather Payment varies from year to year depending on the number and extent of sub-zero temperature spells during each winter. A £25 flat-rate payment is made to qualifying recipients of means-tested benefits when the average temperature in their weather station area is recorded or forecast to be below 0°C for seven consecutive days. The 2019-20 cold weather season was an unusually mild one, during which only 7,000 payments were made in Great Britain (all in Scotland), costing a total of £175,000. The cost in prior years was £3 million in 2016-17, £114 million in 2017-18 and £27 million in 2018-19.[47]

## Expenditure – Warm Home Discount

The Warm Home Discount provides eligible recipients with a £140 discount from energy bills. Like the Energy Company Obligation (ECO), the policy is paid for through energy consumer's bills rather than through public spending. Ofgem set out the budget that energy suppliers can spend on the scheme (and pass the costs onto consumer bills) each year in the Warm Home Discount annual report. This details how the budget works between the different eligible groups under the Warm Home Discount scheme, and how the budget has varied over the years of the scheme. The report states that for the scheme's eighth year (August 2018 – March 2019) the overall spending target was £340 million, and obligated suppliers surpassed this, spending £341.1 million worth of support.[48]

Winter Fuel Payments in Great Britain cost

**£1.97 billion**

in 2019-20 and are forecast to cost

**£10 billion**

over the next five years

# 3

# Capital investment

## Spending decisions

The most critical piece of work for quantifying the scale of expenditure needed to drive required improvements in the energy efficiency of the housing stock is a 2017 analysis conducted by Frontier Economics on behalf of the Energy Efficiency Infrastructure Group entitled 'Affordable Warmth, Clean Growth'.[50] The report aimed specifically to tackle the questions of the investment that would be required for all homes in the UK to reach EPC Band C by 2035, and for fuel poor households and rented households to reach the same standard by 2030. Frontier Economics took the Government's own conditions of "cost-effective" and "practical" not to be binding conditions in any case, to assess what investment would be required given the definition of those terms that will lead to the biggest possible improvements in energy efficiency. But they capped "unaffordable" homes as any that would cost more than £10,000 of investment to achieve the required C rating.[51] That is, they assumed that the only homes not upgraded to EPC Band C by 2035 were those for which it would cost more than £10,000 to do so.

The Frontier report calculated that to achieve this level of energy efficiency improvements would require capital investment averaging £5.2 billion per year until 2035. After accounting for the funding provided by the ECO, the only public funding available at the time of the report, this would leave a shortfall of £4.5 billion. Frontier calculated that of this annual investment, only £1 billion would need to be additional Government spending (totalling £1.7 billion of annual public investment including ECO funding). Frontier predicted that this public investment, in combination with a package of other policies[52], ought to unlock £3.5 billion in private investment every year that will make up the deficit.

The Government told the BEIS Select Committee in mid-2019 that their estimates for the scale of investment required between then and 2035 to meet its EPC targets ranged from £35 billion (£2.3 billion per year) and £65 billion (£4.3 billion per year).[53] They had not estimated how much of any of the amounts in that range would need public investment and how much would need to be made up by the private sector.[54] Despite this, and despite the fact the Government is yet to formally respond to the BEIS Select Committee, the Conservative 2019 General Election Manifesto included a commitment to invest £9.2 billion in "the energy efficiency of homes, schools and hospitals", the bulk of which would go towards residential energy efficiency, in the ten year period up until 2030.[55] The December 2019 Queen's Speech included the same commitment.[56] This additional spending brings the Government's planned annual investment (around £920 million per year extra) very close to the additional £1 billion required. If the Government's energy efficiency targets for homes are to be met, then it is this level of additional commitment that will be required.

There are reasons to be positive that this funding will materialise, and the Government are beginning to show a recognition of the need to invest in energy efficiency and its associated economic benefits, particularly during a time of recession. The Chancellor's announcement of £2 billion of funding for the Green Homes Grant on 8 July 2020 is indicative of a new, more forward-thinking approach from the Government.[57] The rest of the £9.2 billion in funding must be forthcoming. This should include, as the National Infrastructure Commission has recommended in their National Infrastructure Assessment[58], £3.8 billion of grant or direct funding to be allocated for energy efficiency improvements in social housing between now and 2030. This is consistent with the commitment in the Conservative 2019 General Election Manifesto of a £3.8 billion Social Housing Decarbonisation Fund. This money should be brought forward as soon as possible.

We argue here the case for the Government to go even further, bringing forward the entire £9.2 billion it has promised in additional funding over the course of this Parliament. This would likely amount to greater than £2 billion additional annual public investment in infrastructure investment in residential energy efficiency. By more than doubling the additional annual investment required for the next four years, it would go a considerable way to reversing England's poor energy efficiency performance that has developed over years in which Government policy in this area has not been able to deliver the necessary improvements.

Research by the UK Energy Research Centre[59] has found that there would be considerable indirect benefits associated with the Government spending the required amount to achieve EPC Band C in all homes. These benefits include:

- An average saving per household equivalent to £270 in today's prices a year on domestic energy;
- A net present benefit to the UK economy of £7.5 billion over the period to 2035;
- An average of 95,000 annual full-time equivalent employees required to deliver the energy efficiency and low-carbon heat programmes until 2035.

These benefits, and possible job creation especially, are of particular importance as the furlough scheme ends, and mass redundancies take place as the UK economy begins to recovery from the largest recession since records began. We believe this bolsters the case for front-loading the £9.2 billion spending commitment so that it is spent in its entirety over the course of this Parliament. Crucially, we believe that, if accompanied by the package of regulation and incentive measures we recommend elsewhere in this report, that the private energy efficiency market will still be capable of unlocking the same level of concomitant private investment as would have been unlocked had the investment been made over a ten year period.

The Government and the Prime Minister were criticised by some when they announced on 30 June 2020 that they were bringing forward some spending commitments as part of the fiscal stimulus to help the UK economy rebound from the coronavirus crisis.[60] But these criticisms were wide of the mark. In order for fiscal stimulus to be effective, it doesn't need to be investment that was not planned at all, it only needs to be additional spending at the time in which the economy needs a boost.

Moreover, spending the £9.2 billion on energy efficiency over the course of this Parliament is more likely to produce the fiscal stimulus at just the time when the economy needs it. There has been criticism of the Government's wider attempts to encourage day-to-day consumer spending, such as the Eat Out to Help Out Scheme, on the basis that this is not a typical recession caused by underlying weaknesses in our economy – rather, consumer spending is being held back by fear of the coronavirus.[61] As such, immediate stimulus is likely to be of little benefit compared with what Keynesian orthodoxy tells us it ought to be worth in a recession. The benefit of bringing forward spending on energy efficiency to take place during the four year period from now until the end of the 2019-2024 Parliament is that the spending is more likely to come on stream just as the economy is reaching a point at which it is more likely to be able to make a true recovery, when there is likely to be more positive developments around coronavirus vaccines and treatments.[62]

**The first and most important point in beginning to tackle this issue is to emphasise the need for substantial and sustained upfront investment from HM Treasury. Successive Governments, across the different sectors and policy areas considered here, have shied away from taking the necessary investment decisions to significantly improve energy efficiency to realise the long term returns on offer. The Conservative 2019 General Election Manifesto and Queen's Speech commitments to £9.2 billion of public funding for energy efficiency over a ten-year period represent the beginning of a recognition of what is required, but the Government must make good on this in its entirety.**
**The Chancellor's announcement of the £2 billion Green Homes Grant on 8 July 2020 is a very important step and indicates that the Government is beginning to take action that accords with their stated belief in investment in energy efficiency as a public good with a series of additional social benefits and both short- and long-term economic value. It is a start, but we argue the Government should go further. We recommend extending the front-loading so that the full £9.2 billion is spent during the course**

**of this Parliament. Though this would be previously committed to funding, it would still represent worthwhile public investment during a period in which the economy is likely to need it and would still unlock the required private investment. BEIS should work with HM Treasury to ensure the accelerated delivery of this funding is allocated during the forthcoming Spending Review.**

## An infrastructure priority

There is a wide consensus that the Government ought to designate improving the energy efficiency of England's building stock as a national infrastructure priority. It has previously been the case that buildings have not been seen as part of the nation's infrastructure, and have therefore been on the receiving end of less funding on the basis that energy efficiency improvements have not been funded as part of the Government's infrastructure investments portfolio. This is due to the way that those investments that are deemed to be infrastructure projects by HM Treasury are valued more highly on the basis that they are deemed to have higher private sector multiplier effects, meaning they are seen to offer better returns on investment.[63] There is considerable evidence that energy efficiency improvements offer equivalent returns on investment to other big infrastructure projects such as HS2 and Crossrail.[64]

The Scottish Government took the decision in 2015 to class energy efficiency as a national infrastructure priority.[65] This has in part given energy efficiency policy in Scotland considerably more impact, with the resulting policy being more forward thinking, more comprehensive and better funded than in England. Research by the independent climate change think tank E3G found that, in 2017, the average annual per capita investment in energy efficiency was £35 in Scotland as compared with £8 in England.[66]

Making energy efficiency a national infrastructure priority would have real benefits. It would lead to energy efficiency improvement investments to be considered, as is the case with other infrastructure priorities, on a longer time horizon than the 5 to 10-year cycles that dominate current policy discussions.[67] This would also lead to energy efficiency being consistently classified as 'capital' investment, which increases the value of infrastructure, rather than 'resource' expenditure in Government accounting.[68] Broadening the time horizon on which the Government are considering energy efficiency investments would send a clear signal to the private sector of the direction of travel, and would begin to help eradicate the stop-start nature of policy in this area which has often led to boom-and-bust cycles in the mostly SME retrofit construction sector.[69] A further benefit is that it would encourage joined-up thinking across all the Departments which energy efficiency policy spans, primarily the Department for Business, Energy, and Industrial Strategy, HM Treasury and the Ministry of Housing, Communities and Local Government (MHCLG). A recent report by the Institute for Government concluded that the climate policy of the UK Government has hitherto suffered from a lack of this type of cross-departmental engagement and thinking.[70]

The National Infrastructure Commission (NIC) is the body responsible for overseeing the Government's efforts to get its infrastructure policy correct. The 2018 National Infrastructure Assessment was right to recognise the integral role of energy efficiency in achieving a low-carbon economy.[71] However, the NIC has not quantified the precise level of investment that will be required for the Government to meet its targets – as Frontier Economics did and as they would do for other areas of infrastructure priorities. Once the Government has designated energy efficiency as a national infrastructure priority, the NIC ought to produce a specific piece of work on what is required for the Government to meet its energy efficiency targets to complement the work that has already been done producing estimates of what will be required. It is important for the purposes of accountability that the estimates of these costs be produced by a non-Department government agency like the National Infrastructure Commission.

**The growing sense that the Government is fully committed to driving energy efficiency should be codified by it a national infrastructure priority when the National Infrastructure Strategy is published. This would be more than just a symbol – it would begin to change the perspectives of policymakers at all levels towards viewing energy efficiency as a public good that requires good governance, and long-term, joined-up strategy and thinking. The Government should also consider asking the National Infrastructure Commission to produce a dedicated report on energy efficiency that quantifies the investment that will be needed to meet EPC targets.**

The Chancellor's announced

£2 billion

Green Homes Grant is welcome, but this must be the beginning

# 4

# Able to pay homes

## The Green Deal and the 'able to pay' market

The Green Deal[72], launched in 2013, was the Government's flagship policy for stimulating demand in the able to pay sector. The rationale for the policy was to create a financing mechanism to enable households to install measures for minimal upfront cost, paying instead over time out of energy efficiency cost savings, in the form of reduced monthly energy bills. When it was introduced, the Green Deal was intended to facilitate energy efficiency improvements to 14 million homes by 2020.[73] However, as of May 2020, little over 14,000 households had taken out green deal loans.[74] Due to this dismal take up, the Government withdrew funding for the scheme in 2015.[75] The breakdown of the Green Deal, and the difficulty in building up demand for able to pay energy efficiency improvements, can be put down to several factors, some of which are touched on here. The very high interest rate of 7.5 per cent was undoubtedly a contributing factor to its downfall. However, ultimately, the Green Deal model fell short because households were not convinced to improve energy efficiency based on energy bill savings alone.[76] Therefore, the solutions we highlight focus on other ways of embedding energy efficiency considerations into the housing market.

**Incentivising energy efficiency improvements for those households who are 'able to pay'[77] is a key part of the energy efficiency puzzle. As we have highlighted, most investment in energy efficiency, if the Government is to meet its EPC targets by 2035, will have to come from the private sector. It is in this context that the suite of policies for stimulating the able to pay market for energy efficiency are so crucial.**

## Barriers to energy efficiency in the 'able to pay' market

The thinking behind the Green Deal was that if households were able to see more clearly the energy savings benefits in the form of reduced energy bills, then they would be more likely to take steps to improve the energy efficiency of their home. However, there are concerns that households do not respond rationally to cost savings alone when it comes to energy efficiency. Research by Oxera[78] shows that a household's decision to undertake energy efficiency improvements is generally influenced less by the value of future energy savings than by the upfront cost of the energy efficiency upgrade. The UK Green Building Council have argued that the Green Deal failed because of a "fundamental lack of demand" and that a "finance mechanism alone is insufficient to create a mass market for energy efficiency."[79] Essentially, without a widespread appetite for improvement measures there is little benefit in having an adequate funding mechanism, such as the Green Deal. Wilson et al[80] conducted research into what exactly motivates people to improve the energy efficiency of their home, if not cost savings. The research found that improvements to energy efficiency were rarely carried out in isolation and more commonly taken place as part of wider home renovations. They recommend that energy efficiency policies seek to bundle energy efficiency in with wider home renovation opportunities, rather than presenting it as a discrete activity. There is also evidence that people are more likely to pursue energy efficiency investments at certain "trigger points" or "moments of change", such as moving home, or undertaking renovations in an existing home, since they are already prepared for disruption at these times.[81] That same research suggested that energy efficiency improvements are more likely to be undertaken when they are presented as important measures to address domestic challenges, such as improving warmth, rather than simply as a cost saving measure.

**In addition to problems around its delivery and implementation, the Green Deal fell short because it presented energy efficiency improvements as a standalone opportunity, conveying value to consumers based on costs savings alone. The best evidence suggests that policies that "structurally embed" energy efficiency in the housing market are likely to be more successful, with value conveyed via improvements to comfort and property values, and which are linked to 'trigger points', including renovating or purchasing a home. Some of the policies for the 'able to pay' market considered here draw on these concepts.**

## Stamp Duty Land Tax differential

We propose linking the Stamp Duty Land Tax system to the energy performance of homes, thereby creating a financial incentive for home-buyers to purchase a more efficient home, and for homeowners to improve the energy efficiency of their home. This idea has been previously discussed and advocated for by a wide range of groups and academics, including the Energy Savings Trust[82], Dresner and Ekins[83], Association for the Conservation of Energy[84], the UK Green Building Council[85], Willmott Dixon[86], Policy Exchange[87], the BEIS Select Committee[88], the Government's independent Green Finance Taskforce[89], the Centre on Innovation and Energy Demand (CIED)[90], the Sustainable Energy Association[91], and repeatedly by the CCC[92].

We agree with the Green Finance Taskforce's recommendation that "research should be undertaken to understand the cost and benefit of using a sliding 'bonus-malus' Stamp Duty scale, designed to be fiscally neutral and linked to energy performance, to drive demand for energy efficient renovation" and that "research should also determine how a pilot scheme could be set up to assess the efficacy and fiscal impact of such an approach in driving demand."[93]

In response to this and other attempts to push the Government to implement a Stamp Duty Land Tax differential, including from the CCC, then Financial Secretary to the Treasury Mel Stride MP gave the following response to a Written Parliamentary Question[94]:

> "In 2007, the then government introduced a relief from SDLT for zero-carbon homes intended to encourage greater energy efficiency in buildings.
>
> However, the policy was found to be ineffective with a limited number of transactions taking up the relief and it was ended as planned in September 2012.
>
> There are currently no plans to link SDLT on properties with their relative energy efficiency."

This line of argument is not convincing. The 2007-2012 Stamp Duty Land Tax relief for Zero-Carbon Homes cannot be seen as a measure of the effectiveness of a Stamp Duty Land Tax incentive of the type being proposed here (see example below). It is difficult to precisely ascertain the number of zero carbon homes in England, given differing definitions of that term, but they only comprise a tiny fraction of the total housing stock. The introduction of a tax incentive that focused only on homes that comprised such a small portion of the market is not representative of a system which intends to embed energy efficiency across the entire housing market. 85 per cent of buildings in 2050 have already been built[95], meaning the main challenge lies in improving energy efficiency and building a market for energy efficiency improvements among existing homes, the vast majority of which fall well below the zero-carbon standard.

Our key recommendation is that HM Treasury commit to a review of how Stamp Duty Land Tax could be altered to have a sliding 'bonus-malus' scale to embed energy efficiency as a value across the entire housing market. For illustrative purposes, we consider here using the following example of how this could be done in a revenue neutral way.

The differential could operate on the basis of a 3 per cent change in the Stamp Duty Land Tax liability for every Standard Assessment Procedure[96] point that a property deviates from the mean of 66.67.[97] This way, a property receiving the maximum SAP score of 100, would pay no Stamp Duty Land Tax. The differential could be calculated after existing reliefs and additional levies are added. This analysis assumes a median property price for the UK of £240,000 and calculates how stamp duty liabilities could differ at that price.[98]

The differential sketched above shows the amount of SDLT incurred at the median house for seven different SAP scores that correspond to 7 different EPC Bands. It is worth noting that these SAP scores don't correspond directly with the average SAP score for each EPC Band, but rather were chosen for illustrative purposes. Similarly, an SAP score of 66.67 has been included for the purposes of showing the mean outcome where there is no change in tax.

This example shows a differential of £6,900 at the median house price, which would provide a significant incentive for energy efficiency improvements. Of course, the differentials could be considerably larger at the top end of the distribution bracket – the policy could have a cap so that no SDLT liability can be increased by more than £25,000, this would avoid large and potentially punitive increases on expensive homes; without a cap, there would be considerable incentives for tax avoidance at the top end.

This example also shows a situation that would be exactly revenue neutral for HM Treasury. It differential could be designed so that there is only a 'stick' and no 'carrot'. This way, properties with an SAP score above average would receive no reduction in SDLT liability and the policy would therefore be revenue raising

**Figure 8: Suggested Stamp Duty Land Tax differential**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Current SDLT liability | £2,300 | £2,300 | £2,300 | £2,300 | £2,300 | £2,300 | £2,300 |
| SAP Score (EPC Rating) | 100(A) | 90(B) | 75(C) | 66.67(D) | 50(E) | 25(F) | 0(G) |
| SAP bracket for EPC Band | 100-92 | 91-81 | 80-69 | 68-55 | 54-39 | 38-21 | 20-0 |
| +/- average SAP Score | +33.33 | +23.33 | +8.33 | 0 | -16.67 | -41.67 | -66.67 |
| Adjustment to SDLT | -100% | -70% | -25% | 0 | +50% | +125% | +200% |
| Final SDLT liability | £0 | £690 | £1,725 | £2,300 | £3,450 | £5,175 | £6,900 |

for HM Treasury as compared with the status quo. Additionally, because the mean SAP score increases over time as more energy efficiency measures are installed, the incentive would be designed so as to become smaller over time, and therefore raise less revenue for HM Treasury.

A further twist on this policy could be introduced such that the purchaser of a home with low SAP score, and so an increased Stamp Duty Land Tax charge, could receive a rebate if they can increase the SAP rating of the property through energy efficiency measures within a set period of time. We know that one of the 'trigger points' at which people consider making energy efficiency improvements is when they have just purchased a home and are considering making other changes. A time-limited rebate period would add further incentives for those who have bought a home and are considering carrying out renovations. Including a rebate period as part of the policy would mean that it raised less revenue but would potentially make it considerably more effective at stimulating demand for energy efficiency improvements.

In 2017-18, the last year for which broken down Stamp Duty Land Tax data is available, there were 1.1 million residential transactions, the majority of which were above £125,000 and so incurred Stamp Duty Land Tax.[99] A change to Stamp Duty Land Tax that affects almost the entire housing market is therefore likely to have a considerable impact and is not comparable to the Stamp Duty Land Tax zero-carbon homes relief.

Linking stamp duty to energy efficiency would create a much clearer financial incentive for energy efficiency than which exists as a result of market forces. It would reinforce the premium attached to more efficient homes and give homeowners an incentive to invest in the efficiency of their home prior to sale (when they are likely to receive little in the way of energy cost reductions). As was discussed in the previous section, homeowners rarely view energy efficiency separately from other questions such as warmth and comfort. Linking property values and transaction costs more explicitly to energy performance would increase the likelihood of homeowners pursuing energy efficiency alongside other upgrades during their occupancy. The hope is that, over time, this would lead to greater engagement by the likes of estate agents and builders, who would encourage householders to invest in energy efficiency and increase the value of their home.

When implementing a Stamp Duty Land Tax differential, the Government would need to be vigilant in monitoring potentially fraudulent activity around EPC assessments, as the policy would create a clear incentive for bad actors to try to manipulate the system.

A more serious concern is the need to consider any potential regressive impacts the policy could have on any specific groups or regions. As has been discussed elsewhere in this report, it is critical that policy makers are wary of any potential regressive impacts – real or perceived – when implementing policy to transition the economy towards net zero. This is important for its own sake, but also because failure to do so can lead to collapsing public support and poor implementation of the policy. It is worth making the following points as to how and why any regressiveness of the policy can be minimised and mitigated:

1. The nature of the slice system of Stamp Duty Land Tax is that the very cheapest properties, which will loosely correspond with some of society's most vulnerable owner-occupiers, are likely to be unaffected (properties worth up to £125,000) or only affected minimally (properties worth marginally over £125,000) by the differential proposed here. The most significant incentive would be for properties worth well over the median, which would guard against regressiveness.
2. Building the rebate discussed earlier into the policy would ensure that property value lost as a result of a market that now better reflects energy efficiency could be recouped. Again, this would reduce the extent to which there could be any significant losers from the policy, but it is worth addressing that it may create a cashflow problem for some new homeowners (these are likely to be those homeowners in the bottom half of the distribution but still owning a property worth considerably more than £125,000). The potential issue that could arise is a situation where the purchaser of a home – say, an EPC Band F property – pays the increased Stamp Duty Land Tax, but is unable to afford the energy efficiency improvements that would allow them to claim a rebate. It is important that Government spending – such as through the Green Homes Grant – is targeted to ensure that these instances are minimised and that all homeowners looking to take advantage of a SDLT rebate can access finance. Having a better functioning market for energy efficiency financial products (see green financing solutions section) will assist with this too.

In 2017-18, the last year for which broken down Stamp Duty Land Tax data is available, there were

1.1 million

residential transactions, the majority of which were above

£125,000

## Other taxation measures

We recommend that the Government make clear its intention to extend the principle of taxation of housing being dependent on the energy efficiency of the property, all of which could be implemented on the basis of revenue-neutrality. This could include a similar differential for Council Tax as that suggested above for Stamp Duty Land Tax. It should also include changes to Inheritance Tax and Capital Gains Tax to incorporate energy efficiency. Given the small proportion of homes that are liable for these taxes each year the incentive would be limited, and the effects would be further restricted by the operation of other existing reliefs.[100] Nevertheless, the Government stating its intent to tie the energy efficiency of a home to its tax liabilities across the entire tax system would send a strong message of a Government serious about energy efficiency improvements. These changes could be coupled with a Government communications and information campaign seeking to further reinforce the significance of energy efficiency to consumers (see chapter on information and enforcement).

**As part of its National Retrofit Strategy, we recommend the Government implement a differential that ties Stamp Duty Land Tax to the energy efficiency of the home being sold. HM Treasury should look at extending the principle of embedding energy efficiency across the tax system, including incentives for those paying Inheritance Tax, Capital Gains Tax and Council Tax on domestic properties.**

## Value Added Tax (VAT)

As mentioned above, the VAT treatment of construction work is complicated. Currently, when a home is retrofitted the homeowner is required to pay 20 per cent VAT; this is compared to building a new home which is zero-rated for VAT. An additional complication is that some energy efficiency measures, such as insulation and heat pumps, have a reduced (5 per cent) VAT on installation if certain requirements are met.

The complex nature of VAT has led to industry calls to reduce or remove VAT paid on construction work to create consistency within the construction industry. Proponents of a VAT reduction suggest that it will make the VAT system clearer and easier to navigate, that the money saved can be put towards other energy saving measures and that it is fairer to tax energy consumption, rather than the measures people are putting in place to reduce their energy usage.

However, there is little evidence that reducing the VAT rating for retrofitting works would incentivise homeowners to make their home more energy efficient. Cut the VAT Campaign Coalition commissioned some research by Experian in 2015 to quantify the impact of reducing the rate of VAT on residential repairs and maintenance from 20 per cent to 5 per cent (over the 5-year period from 2015 to 2020). One of the key findings of the research was that reducing VAT to 5 per cent would help up to 92,000 homes benefit for retrofitting energy efficient measures over the five-year period.[101] Whilst this is somewhat positive, it is nowhere near the scale of the millions of homes that require retrofitting. There is also no guarantee that reducing VAT for retrofitting works would make a home more energy efficient. There is a risk that homeowners could benefit from the reduced rate VAT when undertaking renovations but not implement many, or any, energy saving measures.

A reduction on VAT would also have a large cost to the Exchequer. As highlighted above, Financial Secretary to the Treasury Jesse Norman MP suggested that this policy would cost the Exchequer approximately £6 billion per year.[102]

Given the current economic uncertainty due to the coronavirus pandemic, a policy that is tax neutral, such as the above suggested Stamp Duty Land Tax differential, provides an opportunity for HM Treasury to incentivise homeowners to improve the energy efficiency of their home whilst not affecting their balance sheet.

**Despite the complicated nature of VAT on construction and energy saving products, there is little evidence to suggest that reducing or removing VAT would incentivise large numbers of homeowners to improve the energy efficiency of their home. Additionally, this would have a significant impact on the Exchequer's finances at a time when Government is already spending a large amount of money to support individuals and businesses through the coronavirus pandemic. A tax neutral policy, such as the suggested Stamp Duty Land Tax differential, should be prioritised over a VAT reduction.**

## Green financing solutions

As discussed earlier in this chapter, having in place mechanisms for financing energy efficiency improvements at low cost is not sufficient in and of itself to drive demand. It is, however, a necessary component of pushing through widespread uptake in the able to pay sector.

In September 2017, the Government asked leading finance expert and former Lord Mayor of London Sir Roger Gifford to chair an independent taskforce to accelerate the growth of green finance. Part of this work involved providing recommendations on how to stimulate demand and supply for green finance products for energy efficiency improvements.

The Green Finance Taskforce[103] recommended that the Government seek to support competitively priced loans and mortgages by lenders to finance and reward green retrofit. It stated that this support was only intended for a short period of time as a pump prime[104] measure to build consumer demand up

and establish competitive markets. The purpose of this activity would be to allow a wide range of lenders to pilot different green mortgage and loan products. Thereby developing an evidence base that would allow continued provision of the products without Government support in the medium term. In addition, the Taskforce recommended that the Government support a market for green mortgages, where an incentive is provided for homeowners to retrofit their homes to qualify for better mortgage terms (lower interest rate and/or higher loan to value) based on EPC or equivalent targets.

The Green Finance Taskforce suggested two potential methods for boosting these markets. First, they suggested the implementation of time-limited partial Government guarantees to support the creation of products with low interest rates. HM Treasury has applied this principle to support businesses across the economy during the coronavirus crisis. The other proposal was the creation of a green mortgage challenge fund open to lenders looking to develop green mortgage and loan products.

In response, the Government announced the creation of a £5 million Green Home Finance Innovation Fund for the private sector to pilot green home finance products over 18 months.[105] The BEIS Select Committee welcomed that the Government had taken a step towards incentivising green financial products for improving energy efficiency but found that the amount was "woefully inadequate" for the scale of the challenge, totalling less than 1 per cent of the required public investment.[106]

In 2016, the German system of combining public subsidies and low interest loans lead to

**276,000**

energy renovations, dwarfing the

**14,000**

cumulative total supported by the Green Deal.

It is worth looking to the example of other countries, which have considerably more mature green finance markets and better functioning policy interventions in this area. The BEIS Select Committee did just this, looking in depth at the example set by the Germany. They found that the German system of combining public subsidies, linked to the level of energy efficiency achieved, combined with low interest loans at 0.75 per cent, was leading to a much wider take up of energy efficiency retrofits than have been seen in England. In the year 2016, the programme supported 276,000 energy renovations[107], dwarfing the 14,000 cumulative total supported by the Green Deal.

Importantly, for the €1.7 billion spent by the German Government, another €8.4 billion of private investment was unlocked, a similar ratio to what Frontier Economics suggest will be required for the UK Government to meet its EPC targets. Additionally, the €1.7 billion of public investment was almost entirely recouped in VAT receipts over the same period, which came to €1.6 billion.[108] The German experience underlines the case for affordable green financing as an essential component of solving the energy efficiency puzzle in England and bolsters the case for financing solutions to go alongside the Government's much welcomed Green Homes Grant to ensure maximum returns on investment.

**The Government's Green Home Finance Innovation Fund is welcome development, but at £5 million it is incommensurate with the scale of the need for accessible and competitive green financing solutions, which have a key role to play in stimulating consistent demand across the entire market. As part of a National Retrofit Strategy, the Government should commit to providing guarantees on innovative green finance products for a limited period. It should clearly outline the length of time this policy intervention will be in place, to enable the providers of these financial products clarity about when the Government expects the market to be capable of existing without state support.**

**More widely for the able to pay sector, the Government has said it is committed to an energy efficiency strategy. If such a strategy is to be successful, it needs to avoid the pitfalls of previous efforts to drive improvements in this area. These efforts were characterised by stop-start funding that led to boom-and-bust cycles, ultimately leaving the largely SME suppliers of construction for retrofit with unsustainable business models. If these poor outcomes are to be avoided moving forward, the Government will need to bring forward a plan to ensure that consumer demand is built up and is sustainable. The Green Homes Grant will create a much welcome boost to demand, but the Government needs to bring forward a long-term National Retrofit Strategy.**

5

# Fuel poor households

## Why we need to address fuel poverty

There are at present 2.4 million fuel poor households in England, which comprises about one tenth of the total number of households.[109] There are two criteria for a household to be categorised as fuel poor. First, it must have heating costs that place it above the national median, and second, meeting those costs will put the household below the poverty line.[110] Poor energy efficiency is a major determinant of fuel poverty, where high energy consumption and costs are combined with low household income. The Government's latest fuel poverty statistics show that only 12.4 per cent of fuel poor households had an EPC Rating of C or better.[111] In any case, alleviating fuel poverty is a worthwhile goal on its own terms, due to reductions in cost of living, improved health outcomes and a better quality of life for some of the poorest and most vulnerable in society. Fuel poverty is a known contributor to the 25,000 'excess winter deaths' per year in England and Wales[112], and it also exacts a cost on public services, with estimates placing the economic cost to the NHS of cold homes, at a time of great pressure, at around £1.4 billion.[113] While making homes warmer and more comfortable will ease pressure on the NHS, it will also reduce COVID risk factors. Living in a cold home markedly increases the incidence of respiratory disease[114], which in turn is a risk factor for more severe incidences of COVID.

The fuel poverty policy landscape is one in which it is particularly important to consider the need to have a just transition to a net zero economy. On the one hand, it appears on surface that investing in alleviating fuel poverty should be an area in which there is less tension between the Government's objectives of realising social justice and reducing carbon emissions. On the other hand, as the UK transitions towards the use of more low-carbon generation technologies, the price of energy is set to rise, and the fuel poor risk being disproportionately affected. The CCC argue that the poorest can be protected from rising energy prices via improved energy efficiency.[115]

**Households in fuel poverty comprise a significant part of the puzzle for improving the energy efficiency of England's housing stock. Addressing fuel poverty is an area in which, with carefully planned and delivered policy, realising social justice and reducing carbon emissions can be achieved simultaneously. Alleviating fuel poverty is a worthwhile goal in and of itself as a means of improving the quality of life and health outcomes for the poorest and most vulnerable in society. It also provides economic stimulus opportunities – both through the creation of construction jobs and the increased disposable incomes of previously fuel poor households – that can help to boost local economies, and it can reduce the £1.4 billion cost to the NHS of cold homes.**

## Targets

In addition to its targets for energy efficiency, the Government has a statutory target of moving all fuel poor homes to EPC Band C by 2030 as well as interim targets of EPC Band E 2020 and Band D by 2025. These targets were introduced with the publication of the Government's Fuel Poverty Strategy in 2014-15[116], which also set up the Committee on Fuel Poverty, a non-departmental watchdog assessing the effectiveness of the Government's fuel poverty policy. The Committee on Fuel Poverty expects that the Government will likely miss its Band E 2020 target, and stresses that considerably more progress is needed towards the 2025 and 2030 targets if they are to be met.[117]

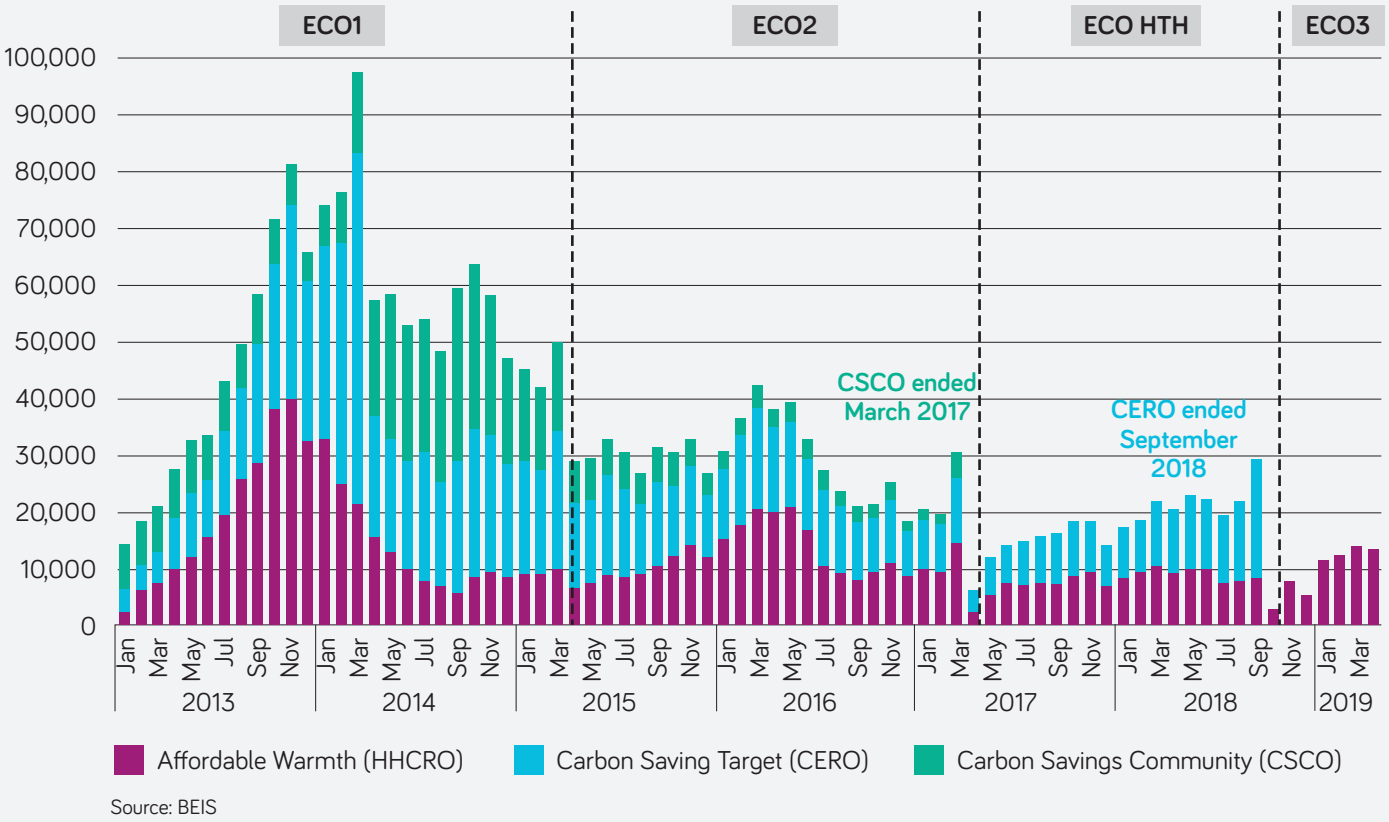
## Energy Company Obligation (ECO)

The ECO was, until the recent announcement of the Green Homes Grant, the only public scheme directing money towards energy efficiency in England, and it remains the only measure aimed at alleviating fuel poverty and meeting the Government's fuel poverty targets. The latest iteration, ECO 3, is focused on low-income, vulnerable, and fuel poor households.[118]

> The ECO is under-funded and has become increasingly so. Energy suppliers are required to meet targets for home heating reduction costs, paid for out of a levy on consumer bills, which, under ECO 3, the Government expects will cost £640 million per year (in 2017 prices).

The budget was halved in 2017 from an original projected spend of £1.3 billion, which was itself considerably below the budget of ECO's three predecessor schemes (CERT, CESP, and Warm Front) which together came to £1.57 billion per year.[119] Predictably, this has led to a drop in installations funded by the ECO (see Figure 9[120] overleaf)

**Figure 9: Energy efficiency installations delivered through ECO**




Source: BEIS

The reduction in funding has been justified by the Government as targeting support at those most in need of it, and by pointing to the reduced levy on consumer bills as having a positive impact for the most in need. But the CCC focus specifically on fuel poverty policy in England as an exemplar of a policy that has fallen short due to public concern over its regressive impact (either real or perceived). The CCC found that in England[121]:

> "...concern over costs being passed onto energy bills led to a reduction in the funding envelope available for improving the energy efficiency of homes (despite the fact that energy efficiency provides a route to reducing bills in the longer term)."

As was discussed in the chapter on capital investment, the promised investment in both the Conservative 2019 General Election Manifesto and the December 2019 Queen's Speech will go some way to making up the difference in terms of what is required for energy efficiency across the board. But there is still concern that the current resources will be insufficient for achieving fuel poverty milestones. The Green Homes Grant, by offering the poorest households a voucher worth all the cost of improvements up to £10,000, is a step in the right direction.[122]

However, a key concern is the short period for claims to be made. The Green Homes Grant runs from the end of September 2019 until 31 March 2021, and it is unclear how many homes will be able to access the funding in this time.[123] With questions over the future of the funding past March 2021, this hard stop creates a cliff-edge for those wishing to utilise the scheme. The clarity required over the Green Homes Grant's future underline the need for the Government to have in place the long-term policy strategy to meet their fuel poverty targets. This should be the National Retrofit

Strategy. Here the experience of the devolved administrations, in particular Scotland, can be instructive. The devolved governments in Scotland[124] and Wales[125] provide central funding for local authorities to operate local schemes for energy efficiency, in addition to a national fund for fuel poverty, that operate alongside the ECO to tackle fuel poverty. This funding can be spent on ECO top-ups, or on the hardest to treat homes deemed too expensive for the ECO. The three tiers of ECO, local, and national support have resulted in more progress on energy efficiency than in England.[126]

Additionally, we agree with the Committee of Fuel Poverty's recommendation to replace the ECO with a Home Energy Efficiency Programme (HEEP) when its current term ends in 2022.[127] We recommend that HEEP should be funded at the same level the ECO has been, but should be primarily focused on the owner-occupier sector, with other public funding earmarked for private and social landlords to access finance. This offers the best route to sustained progress towards fuel poverty milestones.

**The ECO was until recently the only public scheme directing money towards energy efficiency measures in England – it is still the only measure primarily aimed at fuel poor homes. As it exists now, the ECO is not the right policy for what is required, both in terms of fuel poverty policy and emissions reductions efforts. The level of funding of the ECO has of late been hobbled by concern over regressive impacts on poor households, despite the fact improved energy efficiency provides a route to reducing bills in the longer term. The fact that per capita spending on energy efficiency for fuel poor homes is orders of magnitude smaller in England than in the devolved nations reflects policy makers' inability to take the necessary decisions up front. We agree with the Committee on Fuel Poverty's recommendation that the Government replace the ECO with a Home Energy Efficiency Programme when its current term ends in 2022. The HEEP should be funded at the same level as the ECO is currently, but should be primarily focused on the owner-occupier sector, with other public funding earmarked for private and social landlords to access finance.**

## Current fuel benefits

As was highlighted in the chapter on housing and the Exchequer, the Government operates two payment funds to provide energy bill support to eligible consumers. The Winter Fuel Payment is an annual payment of either £200 or £300 (depending on age) made to consumers over the state pension age for women, with no means testing for need. The Warm Home Discount is a £140 rebate off the electricity bills of eligible consumers. The Government also provides the Cold Weather Payment, which varies from year to year depending on the number and extent of sub-zero temperature spells during each winter. A £25 flat-rate payment is made to qualifying recipients of means-tested benefits when the average temperature in their weather station area is recorded or forecast to be below 0°C for seven consecutive days.

There is considerable scope for reforming the existing payments so that they are better aimed at improving energy efficiency. Both the Winter Fuel Payment and the Warm Home Discount act as a stop-gap, with no long-term energy savings, and may even act as barrier to the required energy efficiency improvements.[128] The payments are also very poorly targeted on the fuel poor, with only 10 per cent of recipients falling into that category.[129]

**While we would recommend that the Government be circumspect in making changes to the benefits system during an economic crisis, in the longer term, we recommend they consider how existing fuel poverty schemes can be adapted to incentivise energy efficiency. Steps ought to be taken to ensure both the Warm Home Discount and the Winter Fuel Payment – which equates to around £0.8 billion per year according to the Committee on Fuel Poverty – focus on improving the energy efficiency of fuel poor homes.**

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6

# The private rented sector

## Energy efficiency and the private rented sector

In 2018-19, the private rented sector accounted for 4.6 million homes or 19 per cent of households in England.[130] Throughout the 1980s and 1990s, the proportion of private rented households was steady at around 10 per cent. While the sector has doubled in size since 2002, the rate has hovered around 19 and 20 per cent since 2013-14. Despite its increasing prominence as a form of dwelling, it is the worst performing area in terms of energy efficiency, with 35 per cent of the fuel poor homes in the private rented sector.[131] The market for energy efficiency for homes in the private rented sector has been consistently hobbled by the problem of split incentives, where landlords are the ones who are required to pay the costs of making energy efficiency upgrades but tenants are seen to be the ones benefitting from the changes in the form of reduced energy efficiency costs.

Despite this problem, it is landlords who must ultimately be responsible for energy efficiency improvements – they provide tenants with a service and so it must fall to them to rent out properties that are safe and affordable to heat. Recent Government policy in this area is to be welcomed for precisely the reason that it recognises this by putting in place standards which place the responsibility squarely on the shoulders of landlords. The recent strengthening of Private Rented Sector Minimum Energy Efficiency Standards (MEES) came into force on 1 April 2019.[132] The new MEES requires all private rented properties in England and Wales to meet an EPC Band E level, with new tenancies for properties that do not meet that threshold made illegal, unless the landlord is able to gain an exemption. The 2019 regulation change only affected new tenancies and contract renewals. However, as of 1 April 2020, the policy applies to all domestic rented properties.

When the MEES was originally introduced in 2015 it had in place conditions that allowed landlords to be exempted from the EPC level it mandated if the energy efficiency measures were not able to be carried out at 'no cost' to the landlord.[133] Essentially, the owner needed to be able to access third party finance to assist with the funding to cover the costs of improvements. It was the plan of policymakers that the introduction of the MEES would lead to as much as 70 per cent of the privately rented Band F and Band G properties being upgraded to band E, since it was assumed that most landlords would be able to access finance via the Green Deal. But as the Green Deal collapsed, it became much easier to gain an exemption. The Government have since changed the conditions attached to the policy, so that landlords are now only eligible for an exemption if the recommended energy efficiency improvements cost over £3,500.[134]

The Clean Growth Strategy set the goal of achieving upgrades to as many private rented sector homes as possible to EPC Band C by 2030.[135] With the private rented sector now comprising a much larger share of households in England than it once did, this remains a critical ambition that the Government should remain committed to. If this goal is to be hit, and costs are to be minimised, it is important the Government be clear about the trajectory for strengthening the MEES towards Band C. This way landlords, who often view investment over long time horizons, can plan decisions and install the most cost-effective package of measures that allows them to comply with their legal obligations.

The Government finally brought forward a consultation on its proposals for energy efficiency improvements to private rented sector homes on 30 September 2020.[136] We are broadly supportive of the proposals outlined in the consultation document. Specifically, the recognition that there ought to be a clearly laid out, phased increase in energy efficiency standards for homes in the private rented sector is important. Concrete proposals should form part of the National Retrofit Strategy.

## Policy delivery concerns

The £3,500 cost cap appears to be unnecessarily restricting the effectiveness of the MEES. It is estimated that the policy as it currently stands has only resulted in around half of all Band F and Band G privately rented properties receiving the requisite upgrades.[137] There have been widespread calls for the exemption cap to be increased to £5,000, including from the Committee on Fuel Poverty.[138] We believe that the Government should go further this, introducing a cap of no less than £10,000. We believe a £10,000 cap will take the proportion of Band F and Band G privately rented properties closer to the 70 per cent of upgrades that was the initially hoped for. Ensuring the cost cap does not continue to restrict the effectiveness of the MEES will be critical to reducing emissions from the private rented sector, and from housing as a whole.

In the wider reforms brought forward as part of a National Retrofit Strategy, the Government will also need to bring forward policy interventions that provide low cost finance (as discussed in the previous chapter). This will assist with ensuring as few households as possible are able to secure exemptions on cost grounds.

In addition, there are other steps the Government could take to ensure that as few landlords as possible are able to secure exemptions to the MEES, and to minimise the extent to which costs from investments in energy efficiency aren't passed on to tenants in the form of higher rents. From 2004 until 2007 the Government offered the opportunity for landlords to claim energy efficiency improvements against their income tax liabilities in the form of the Landlord's Energy Saving Allowance (LESA).[139] This afforded each household up to £1,500 in costs for energy efficiency improvements to be claimed against their income tax. As part of the National Retrofit Strategy, the Government should reintroduce this policy to provide extra support for landlords required to improve the energy efficiency of their homes.

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## Enforcement

The MEES are only effective if they are being enforced properly. This responsibility sits with local councils in England. With local councils severely hampered by funding and capacity constraints, we are worried that these are not being enforced properly. The Government ought to ensure that enforcement is fully funded at the local authority level. This means either providing a central allocation of funding specifically for building enforcement capacity in local councils, or by overseeing a cost-neutral means of enforcing the standards, such as through the charging of non-compliant landlords. We would also recommend that the Government keep a nationally operated register of compliant and non-compliant households, this would be more efficient to run and easier for landlords with multiple properties to navigate. Enforcement of the MEES should be coupled with strong enforcement of EPC standards in construction work (see chapter on information and enforcement).

The proposals in the recently released consultation on the issue show promise. We agree with the principle of placing a requirement on letting agents and online property platforms to only advertise and let properties compliant with the PRS Regulations, and with proposals to increase the level of financial penalty that local authorities may impose on non-compliant landlords.[140]

**The private rented sector comprises 20 per cent of the housing stock in England but is the worst performing area for energy efficiency. Here, progress has been held back the lack of ability for private landlords to access affordable finance. The originally designed Government policy saw landlords able to secure an exemption from the Minimum Energy Efficiency Standards unless third party finance could be accessed – this became untenable as the Green Deal collapsed. More recently there have been positive policy interventions, including the 2018 update to the MEES which saw a cap introduced so that only renovations costing more than £3,500 would be exempt from the need to meet the EPC Band E standard, introducing the principle that landlord's themselves bear responsibility for financing improvements. We believe there is much more the Government can and should do here, including raising the cap to at least £10,000 so that fewer homes are exempt, re-introducing the Landlord's Energy Savings Allowance to allow private landlords to claim for part of their energy efficiency measures against their income tax liabilities, ensuring local authorities have the capacity to properly enforce standards, and overseeing a nationwide register of compliant and non-compliant households.**

7

# Social housing

## The social housing sector can be a leader in energy efficiency

In 2018-19, the social rented sector, at 4 million households (17 per cent), remained the smallest housing tenure in England, following a long downward trend which has stabilised over the last decade or so[141] However, the composition of the social rented sector has changed in recent years. In 2008-09, the social rented sector accounted for 18 per cent of households with 9 per cent (2 million) renting from housing associations and 9 per cent (1.9 million) renting from local authorities. In 2018-19, 10 per cent (2.4 million) rented from housing associations, 7 per cent (1.6 million) from local authorities.

The sector is often talked about as having an important role in leading the effort to decarbonising the housing stock. The Government told the BEIS Select Committee in 2019 that the social rented sector should be "a flag bearer" and an "exemplar" for energy efficiency standards.[142] The reason for this is severalfold: social housing is predominantly Government-funded stock, and social landlords have control over large estates; they have access to finance, and take decisions about planned stock upgrades that ought to account for longer time-horizons. In some ways, the social housing tenure is already leading the way when it comes to energy efficiency, with more than half of the social housing stock already reaching EPC Band C.[143]

But despite this, there are still concerns that here, like in the case of other tenures, a policy vacuum is currently preventing the sector from making the required progress towards emissions objectives. A 2019 report by Sustainable Homes found low confidence amongst social landlords that they would meet 2050 targets, with long-term strategies that pave the way to making homes prepared for 2050 not existing in the sector, despite being within the reach of most landlords' financial planning cycles.[144] In the Clean Growth Strategy, the Government committed to consulting on how social housing stock can reach EPC Band C by 2030.[145] This work should now be brought forward as part of the National Retrofit Strategy to put the social housing sector on track to truly lead the way.

The National Infrastructure Commission has estimated in their 2018 National Infrastructure Assessment that £3.8 billion would be needed in funding for energy efficiency improvements until 2030.[146] The Conservative 2019 General Election Manifesto included a commitment to exactly that amount of funding for that period, a policy intervention entitled the Social Housing Decarbonisation Fund. This commitment was repeated in the Queen's Speech in December 2019.[147] In addition to announcing the Green Homes Grant on 8 July 2020, the Chancellor set aside £50 million in funding for the Social Housing Decarbonisation Fund.[148] Concerns were raised within the social housing sector that comparatively meagre sum represented the Government going soft on its funding commitment. However, the allocation does appear to be a precursor to the Manifesto commitment – it is all allocated for the financial year 2020-21, and the costing document for the Manifesto said that this investment would begin with a £60m investment.[149] It is imperative that the entirety of the £3.8 billion materialises, and as we have argued, we believe there is a case for the Government to go considerably further, spending the same amount across the course of this Parliament to aid with the coronavirus recovery.

The National Infrastructure Commission has estimated in their 2018 National Infrastructure Assessment that

£3.8 billion

would be needed in funding for energy efficiency improvements until 2030

In the social rented sector, like the private rented sector, one of the key methods the Government can utilise to stimulate energy efficiency improvements is through the implementation of regulation requiring a certain EPC rating for a property to be let. The standard can then be increased over time to oversee the transition to a housing stock compatible with net zero. Again, like in the case of privately rented homes, setting out a clear trajectory is important as it allows landlords to take decisions about energy efficiency upgrades so as to ensure costs are minimized over a long-time horizon. This is particularly important in the case of the social rented sector, where social landlords can take an even longer view than private landlords.[150] In Scotland, where the social tenure is doing very well in comparison with England, the Scottish Government is aiming to maximise the number of social rented homes achieving EPC Band B by the end of 2032.[151] The Scottish Government has also set a minimum floor of EPC Band D from 2025 below which no social house may be re-let. As part of its National Retrofit Strategy, the Government should consult on a clear EPC trajectory for England. Once it has agreed upon targets, the Government should commit itself to them by writing into law that no social homes will be let that fall foul of the minimum EPC rating for any given year. In order to ensure social landlords have coherent plans for achieving net zero for their stock, the Government should also mandate that social landlords produce long-term plans to demonstrate how they will manage their stock in line with the UK's climate obligations.

Like the private sector, regulation of social housing will only be successful if there is in place a mechanism for social landlords to access finance at low cost, or a system where the Government contributes to part of the cost in the form of a grant. Again, the Scottish example can be instructive for policy in England.

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The Scottish Government, through its Home Energy Efficiency Programme for Scotland (HEEPS) loan scheme for registered social landlords, provide loans of up to £1 million to help social landlords carry out energy saving improvements to their stock of housing.[152] In June 2019 the Scottish Government announced a further £3.5 million in grant funding for social landlords to improve the energy efficiency of their properties.[153] The announcement on 12 August 2020 that social landlords will be eligible for the Green Homes Grant is a positive step towards providing social landlords access to finance[154], but it must not come at the expense of the Social Housing Decarbonisation Fund commitment.
Another prospective method of funding is the introduction of a model which allows variable rent and service charge rates to assist housing associations with investment payback. According to this model, housing associations would be able to charge increased rent in instances where they had substantially reduced energy bills. It would allow for the piloting of so-called deep retrofit models.

The 'Energiesprong' approach is one such model.[155] First piloted in the Netherlands and trialled in Nottingham in 2017, the Energiesprong technique involves largescale whole house retrofits that on average reduce the energy consumption of a household by 80 per cent. There are also economies of scale to be achieved if this technology is invested in that would lead to more value down the line. With the announcement that the Green Homes Grant will be available to social landlords, the Government should ensure that the initial £50 million for social housing is spent on piloting innovative technologies and repayment systems.

**There is a clear and obvious case that social housing should be leading the way when it comes to decarbonising housing in England: social housing is predominantly Government-funded stock, and social landlords have control over large estates, have access to finance, and take decisions about coordinated stock upgrades that ought to account for longer time-horizons. The social rented sector has the capacity to see technologies scaled up while driving down the unit costs for improving energy efficiency across the entire market. The sector is already outperforming other tenures in terms of energy efficiency, but we are concerned that despite this there is a lack of Government strategy and policy framework in this area. The National Retrofit Strategy should include a clear trajectory for social housing energy efficiency regulations. This should include a plan to write into law that no social homes will be let that are in breach of 2025 and 2030 targets, and require that social landlords produce long-term plans to demonstrate how they will manage their stock in line with the UK's climate obligations. The £3.8 billion Social Housing Decarbonisation Fund committed to in the Conservative 2019 General Election Manifesto is an essential start for this tenure: given the economic challenge we now face, this should be front-loaded to boost economic activity in the medium term. The Government's £50 million fund to pilot this initiative is welcome and should be used to trial 'deep retrofit' techniques and innovative repayment systems.**

8

# Public information and standards enforcement

## Installation standards

There is considerable evidence that poor standards of installation, including scams and low quality craftmanship, has affected the market for energy efficiency improvements.[156] The prevalence of such instances creates two problems that inhibit the ability for England to decarbonise its housing stock. First, where poor installations have taken place, it will require further energy efficiency improvements to be carried out to enable the retrofitted homes to reach the desired EPC rating. Second, they blight confidence in the energy efficiency improvement sector, and have likely contributed to the lack of demand in the able to pay sector.

The Each Homes Counts review was conducted by Dr Peter Bonfield on a Government commission in 2015 in order to assess consumer advice, protection, standards and enforcement for energy efficiency and renewable energy in existing homes.[157] The review recommended that a new quality mark be set up to ensure higher standards of installation. The new quality mark, named Trustmark, commenced in 2018 with the intention of preventing "too many instances of poor-quality installations being made by companies who do not have the skills, quality levels or core values required to operate responsibly in this market."

On 4 August 2020, the Government announced that the £2 billion Green Homes Grant will require builders, plumbers and other tradespeople to have the Trustmark seal of approval in order to provide their services as part of the scheme.[158] This is a very positive development that is to be welcomed. Hopefully, it will drive a wider take up of Trustmark accreditation and begin to build trust in energy efficiency improvements. The Government can and should go further though, by requiring that any public money spent on energy efficiency retrofit take place with a Trustmark accredited provider. This should start with bringing forward secondary legislation to ensure that funding from the ECO – and any successor programme – only be spent on Trustmark accredited tradespeople. The Government should closely monitor the Trustmark scheme to ensure it is protecting consumers as intended.

## Advice for consumers

Building trust in energy efficiency improvements, and thereby building up demand, also requires better guidance and advice for consumers. The Government clearly has a key role to play here. The Each Homes Counts review also included three recommendations on advice and guidance, including establishing a central Information hub to "enable engagement with all consumers, including vulnerable households, in ways most appropriate to them."[159] The information hub would provide access to trained advisors who can give customers tailored and personalised support. These recommendations were included even though the Government had recently introduced the Simple Energy Advice website, which is the central information resource for energy efficiency advice in England. We still believe there is a role for more tailored advice through an expanded information hub. This will require additional funding capacity be allocated for the Simple Energy Advice service, including expanding the information hub to provide access to trained advisors who can give customers tailored and personalised support.

It was a welcome step that the Government recently announced that the Simple Energy Advice website would provide advice on appropriate home improvements, and help consumers navigate the process of receiving support under the Green Homes Grant.[160] This is a very important opportunity for ensuring that this public money is spent on improvements that will go as far as possible to improving energy efficiency. Again, we would encourage the Government to go further, by bolstering these efforts with a Government-backed information campaign to encourage consumers to make use of the Simple Energy Advice service and consider whether they are able to take advantage of the Green Homes Grant. As with the drive to increase the number of Trustmark accredited providers, this would have positive knock-on effects: it would lead to an increased awareness of energy efficiency as a critical issue amongst the population, making policy easier across the landscape and well beyond the cessation of the Green Homes Grant.

Additionally, advice given by the Simple Energy Advice Service should encourage homeowners to think about retrofitting and upgrading in terms of their entire home. This "whole house" model of advice would encourage homeowners to plan upgrades incrementally in a way that ensures they are not being surprised at each stage by the further work that is required, potentially introducing further costs.

**The Government has a key a role to play in ensuring retrofits meet the highest standards, and that consumers are protected from spending on making substandard alterations to their home. The recent announcement that the Green Homes Grant would only apply for tradespeople who are part of the Trustmark accreditation scheme is a very positive development, and signals a recognition that too many retrofits to date, across the whole market, have been below the standard that is required. On that basis, promoting the Trustmark scheme should not be limited to Green Homes Grant, but extended across Government policy. The Government should therefore bring forward secondary legislation to ensure that funding from the ECO (and any successor programme) only be spent on Trustmark accredited tradespeople. Given this emphasis, the Government must ensure that the Trustmark scheme is operating effectively to provide consumers with adequate protection. The introduction of the Simple Energy Advice service is a similarly positive step, and there should be a Government-funded information campaign to ensure as many homeowners and landlords as possible have access to appropriate advice and information.**

9

# New homes

## Energy efficiency in new homes

The energy efficiency of new homes clearly has a role to play in England reaching its net zero ambitions. However previous policy in this area has not been successful and has left more work to do in terms of retrofitting. In 2007 the Government brought in legislation that was to require all new homes built after 2016 be 'zero-carbon'.[161] After nine years of discussions with construction companies, in July 2015, at the eleventh hour, the policy was dropped by HM Treasury to speed up construction of new homes.[162] The UK Government is committed to building 1.5 million new homes by 2022[163], meaning a considerable number of homes have been built since 2016 that will now need to be retrofitted, many even before 2030. The construction sector receives vast sums of public support in the form of the Help to Buy scheme, and it is wrong that this money can be invested in properties that may later require further Government spending to retrofit. This is especially important given that the cost of retrofitting the correct energy efficiency measures is up to five times what it costs to install them during construction.[164]

## Future Homes Standard

The shortcomings of the zero-carbon homes policy made the 2019 announcement of a consultation on a Future Homes Standard a welcome development.[165] It is imperative that the Government go ahead with the proposed changes to Part L of the Building Regulations. England cannot afford another setback in its efforts to improve energy efficiency of the housing stock in line with emissions targets.

The Government must make it clear that it has no intention of reneging on this commitment or indeed of watering it down. One way of doing this, as recommended by the BEIS Select Committee, would be to put in place a compulsory 'learning period' from 2022 in a subset of properties in preparation for full-scale deployment by 2025. The BEIS Select Committee stated the rationale for this build up period[166]:

> "Scaling up before 2025 could drive down costs and drive learning for industry before full deployment as well as signal to housebuilders that the Government is not going to blink this time round."

In addition, this would have the bonus of boosting job creation in the medium term, creating employment opportunities requiring skills that are likely to be in high demand in the future. We believe, however, that the Government should go considerably further than the existing proposals in the Future Homes Standard. One issue is the loophole in the regulations that allows housebuilders to build to outdated regulations. According to current regulations[167], development must begin within three years of the date planning permission is granted, or else planning permission expires. But the broad definition of what it means for development to have 'begun' allows for minor work to be carried out in the first three years, with the significant building happening years later. We believe that the transitional arrangements for the Future Homes Standard must ensure that this loophole is closed. Should a project start and stop, any works that have started must be meaningful and substantial. For example, enabling works should not be included as a meaningful start. A meaningful start would be one which involved some physical construction work.

We also believe that the current Standard Assessment Procedure (SAP) used for the Energy Efficiency Rating does not provide an accurate enough reflection of actual energy consumption. We suggest using a revised SAP that includes unregulated energy sources to calculate the affordability of energy usage in a new home. This should then be reviewed a year after the property has been occupied with a Post Occupancy Evaluation measuring actual energy usage. A reformed SAP could still form the basis of the Stamp Duty Land Tax differential advocated for in the chapter on the able to pay sector.

The Government should also ensure that the carbon emissions targets included in the updated Buildings Regulations measure embodied carbon, so that emissions generated from the processes

The UK Government is committed to building

**1.5 million**

new homes by 2022

associated with sourcing materials, fabricating them into products and systems, transporting them to site and assembling them into a building are considered in the construction process.

## Construction and the green economic recovery

Just as the investment in the energy efficiency retrofit has the capacity to lead to a much-needed boost in job creation, so too does the drive to build more energy efficient homes. As alluded to above, the construction of low-carbon homes is likely to be a growth area in the future and aligns with the Government's wider housing and employment objectives. To this end, a government-funded training programme that looks to rapidly upskill furloughed workers or those looking to requalify from sectors impacted by the coronavirus would be very welcome. Similarly, the Government should consider changing the remit of Homes England to include a specific objective to focus on the building of low-carbon, energy efficient, sustainable homes.

**Regulating the construction of new homes is also an integral element of restructuring the housing stock to lower emissions. The dropping of the proposed zero-carbon homes policy in 2016 has left England behind the curve – with new homes having been built that will be in need of retrofitting. Construction remains the best point at which to make a home energy efficient. On this basis, the announcement of the Future Homes Standard in 2019 marked a necessary and welcome course correction. The changes to Part L of the Building Regulations for this year must go ahead. The Future Homes Standard should also go further than as it is currently proposed, using operational energy as the principal metric for measuring energy efficiency, setting targets for the use of embodied carbon in new buildings, and closing loopholes in the Building Regulations that have allowed housebuilders to build to regulations that have been superseded. The Government should also change the remit of Homes England to require a focus on delivering low-carbon homes.**

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