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Wates White Paper Series

# Net zero, retrofit and deliverability

November 2024

Reimagining places for people to thrive.




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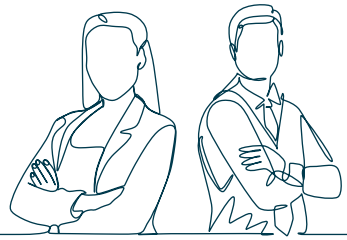

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# Executive summary

There are 29 million homes in the UK. Of those, 19 million need significant upgrades to become low carbon, energy efficient and resilient in the face of ever-changing climate conditions. Domestic properties are responsible for approximately 30% of the country's energy consumption and contribute to around 19% of its greenhouse gas emissions. While newly constructed homes and buildings tend to be more energy efficient, around 80% of the structures expected to exist in 2050 are already standing and will require extensive retrofitting to make them energy efficient.

Yet in England alone more than 13 million homes must undergo upgrades to attain Energy Performance Certificate (EPC) ratings of C or higher by 2035 for the government to realise its 2050 net zero goals. The task is colossal, yet many homeowners and private landlords remain unaware of the necessity for their involvement, requiring financial assistance and guidance to undertake these essential home upgrades.

While the challenge is significant and expensive, there are substantial benefits to addressing it head-on, not just for the country's climate commitments. For example, it has been estimated that delivering a rolling programme of energy-efficiency upgrades would boost the economy by £7bn a year, creating 140,000 jobs[1], and allowing for savings of as much as £24 billion on energy bills by 2030.[2]

[1] https://www.greenpeace.org.uk/resources/household-heating-decarb-economic-impact/

[2] https://www.citizensadvice.org.uk/about-us/our-work/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/home-advantage-unlocking-the-benefits-of-energy-efficiency/



At Wates, we want to create sustainable and thriving communities. This includes making sure that the places we build, develop and maintain contribute to helping the UK meet its net zero targets. That's why we've commissioned this white paper, to explore how the country takes on the vast challenge of retrofitting our homes and buildings.

This paper explores a range of potential solutions including the provision of a long-term pipeline of energy-efficiency upgrade support for consumers, landlords and businesses, as well as creating a one-stop shop to bring all support, advice, funding and employment opportunities related to retrofit under one roof.

In addition, this paper includes recommendations for clarifying building regulations to ensure that energy-efficiency upgrades are not held up by either planning rules or conservation area restrictions. We have also suggested other areas which could be used to drive progress - including mandating incremental improvements in efficiency standards for commercial buildings, as well as reforming EPC methodologies and considering embodied carbon.

If enacted, the solutions this paper sets out would go some way to delivering more energy-efficient homes and buildings whilst also helping to drive economic growth. We have set out our recommendations below.



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# The approach to **retrofit and domestic energy-efficiency so far**

The Government has recognised the importance and potential benefits of retrofit and energy-efficiency measures.

One of the primary mechanisms for supporting the delivery of energy-efficiency measures in domestic properties is the Energy Company Obligation (ECO). Through a levy on energy bills, the biggest energy suppliers are obligated to promote the installation of energy-efficiency measures and retrofits in homes to alleviate fuel poverty. ECO – and its predecessor schemes – have prioritised loft and cavity wall installation, some of the cheaper measures that can create more energy-efficient homes. Whilst the scheme has successfully retrofitted over two million homes, ECO is now focused on homes with the most costly need – meaning that fewer homes will now ultimately benefit, and the five million homes earmarked by this Government will take longer to be retrofitted.

In looking to directly address the energy efficiency crisis in homes, the Government launched its Warm Homes: Social Housing Fund (WHSHF) in September 2024. This replaces the previous administration's Social Housing Decarbonisation Fund (SHDF), but essentially fulfils the same objective: to help social landlords refit their housing stocks to align them with an Energy Performance Certificate rating of 'C' or above. With a value of £1.6 billion, it allocates funding for projects running from April 2025 to March 2028.

However, other measures aimed at owner-occupiers have also struggled to drive significant change. For example, the Green Homes Grant scheme was launched in 2020 and aimed to provide vouchers worth up to £5,000 for energy-saving improvements. The scheme performed poorly – owing to a complex design – and resulted in only 47,500 homes upgraded, compared to the 600,000 originally envisaged.



# **The challenges and obstacles to delivering** energy efficiency and retrofit at scale

Regardless of the design and problems of the schemes outlined above, there are several wider challenges which impact the uptake of domestic energy-efficiency measures. We have set these out below:

**Policy inconsistency:** Despite the numerous attempts to address this issue, there has not been a long-term commitment or pipeline of energy-efficiency upgrades across all building types. Previous government policy has often been described as 'stop-start', meaning that industry does not have the incentive to train employees to deliver retrofit and energy-efficiency upgrades. For example, in September 2023, the previous Government recently disbanded its energy-efficiency task force after just six months, casting doubt at the time over whether home upgrades are a priority. The current Labour administration has indicated it may reinstate the task force as part of its Green Prosperity Plan but to date no action has been taken. While we have seen some indications that the Government may consider reinstating the task force, this is yet to be officially confirmed.

**Skills:** Training skilled professionals to deliver retrofit and install energy-efficiency measures currently takes up to four years.[3] Training is also difficult to provide and is heavily reliant on sub-contractors and these companies may not be able to provide the same training opportunities.

**Public perception and awareness:** There are several issues when it comes to public perception around energy-efficiency measures. Firstly, most consumers are simply unaware that they require energy-efficiency upgrades in the first place, that it would be a net benefit to them or that there are schemes which would help reduce the cost. Secondly, those who are aware and even those who would like to upgrade the energy efficiency of their homes are often put off by the upfront costs of either retrofitting their houses in one go or gradually over time. Thirdly, consumers are concerned about potential disruption to their homes by making energy-efficiency improvements, particularly multiple times.[4]

**Cost:** The cost of delivering energy-efficiency improvements across the UK's housing stock is significant. The Climate Change Committee (CCC) estimates that it would cost at least £55bn of investment in home energy-efficiency improvements by 2050 to reach the ambition for all homes to be EPC C rated or above. This does not

3 Energy Efficiency Association
4 https://www.climateassembly.uk/report/
5 https://www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf



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include low-carbon heating, which would raise the bill to £250bn by 2050[5]. The cost per household can also be significant depending on the type of retrofit required.

**Building regulations and planning:** For significant energy-efficiency upgrades, building regulations and planning applications are complex and difficult to interpret. There is also little guidance on whether certain energy-efficiency upgrades require planning permission or are simply subject to building regulations.

**Diversity of building stock:** As well as having a significant number of houses and buildings that will require retrofit, the sheer diversity of homes across the country means that retrofit solutions are often tailored and complex. This means that there is less opportunity for industry to focus on standardised solutions which would help to reduce the overall cost to consumers as well as the Government.

**Different types of properties:** In addition to this diversity, the issues facing commercial buildings are quite different to domestic homes:

- **Commercial buildings:** While some commercial landlords and tenants are making good progress, many organisations do not see energy efficiency as a priority. Polling from Ridge and Partners, a property consultancy, makes this clear – finding that although 76% of building and facilities managers across 101 private and public sector organisations said they are working to achieve net zero, fewer than a quarter of these are actively considering how to make their premises more environmentally sustainable.[6]
- **Domestic buildings:** Within domestic buildings, there are several different issues at play across owner-occupied properties, the private rented sector and social housing. While there has been some progress for owner-occupiers, progress in the private rental market has been constrained by 'split incentives', where landlords meet the costs of energy-efficiency upgrades while tenants are perceived to reap the benefit from lower heating costs. Equally, social housing tenants can only rely on their landlords for upgrades. Meanwhile, the WHSHF Housing Decarbonisation Fund is a step in the right direction – but we need longer-term investment in retrofitting existing social housing stock. Given each of these groups has different incentives and disincentives for retrofit, any approach to delivering at scale ought to take these into account.

[6] https://www.pbctoday.co.uk/news/energy-news/retrofitting-the-uks-commercial-buildings/132135/



# Our recommendations
## Delivering retrofit at scale

Given the scale of the challenge and the current issues facing the market, it is clear that we need bold and long-term measures for retrofit to be delivered at the scale required. We have set these proposals out below:

### A long-term pipeline and commitment to retrofit

Any solution to tackle the challenge of achieving more energy-efficient homes and buildings should begin with a long-term, cross-party commitment to energy-efficiency funding and support for homeowners and commercial and social landlords.

We therefore recommend the Government commits to a rolling programme of energy-efficiency upgrades for a minimum period of 15 years. This can be delivered through an extension of the SHDF for the social housing sector as well as home improvement grants for landlords and homeowners.

A new home improvement grant scheme could be modelled on the Green Homes Grant – but crucially be geared towards being administered at a local level, rather than a national level. The Local Authority Green Homes Grant was far more successful than the nationally administered scheme because administrators had the local knowledge needed to understand where the need was greatest.

The Government should also explore offering low to no-interest loans to some of the hardest-to-treat homes to ensure funding can be extended further. This is also important for low-carbon heating systems such as the installation of heat pumps which have significant costs on the consumer and would most likely require direct subsidies. The Boiler Upgrade Scheme currently offers up to £5,000 for an air source heat pump and up to £6,000 for a ground source heat pump. However, the National Infrastructure Commission has recommended that this be taken further, with heat pump installation given an upfront subsidy of £7,000 as well as options for zero per cent loans for homeowners.[7]

Creating a long-term pipeline will give industry the confidence to invest in training and hiring new workers as they will know the work will be there. Equally, the Government must also put R&D funding for retrofit technology on a long-term footing, to enable products to be developed that can deliver this programme of upgrades most effectively.

[7] https://nic.org.uk/news/long-term-review-sets-out-pressing-need-to-modernise-infrastructure-to-support-economic-growth-and-climate-action/

## Creating a ‘one-stop shop’

When we look at the approach taken by other European countries they have also taken a similar approach to grant funding as the UK – often with slightly more generous schemes in place, particularly subsidies and low to no-interest loans. One area of difference, however, is the use of a one-stop shop approach for driving the delivery of energy-efficiency measures.

Ireland, Portugal, the Netherlands and Denmark, have each employed this one-stop shop approach to drive consumers to take up energy-efficiency measures. The approach has proved popular as it encourages strong consumer awareness and engagement while also seeking to address common barriers such as a lack of knowledge, as well as providing access to funding schemes and skilled tradespeople.

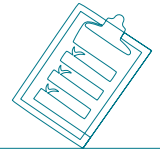
This approach has somewhat been used in the UK already and is used by both the Scottish and Northern Irish governments – with the former being run at a regional level. Scottish Home Energy has been particularly successful with 44% of callers to their advice hotline going on to install energy-efficiency measures. The UK Government has also recently set up a one-stop shop for businesses called the UK Business Climate Hub.

We therefore recommend that the UK Government sets up its own one-stop shop for consumers, landlords and social housing providers for England and Wales. This should be set up as both a digital platform and crucially have an active phone line to encourage those who are less likely to use the digital platform to access the service. It should be able to provide everything from free advice and consultations to the ability to access funding and subsidies for retrofit works as well as provide access to qualified tradespeople and companies. The one-stop shop should also be regionally administered as often more localised services can deliver a better service based on local knowledge – which is already the model in Scotland.

This organisation should further lead a marketing campaign to drive awareness of the need to conduct energy-efficiency measures as well as consistent follow-up with consumers to ensure their upgrades are delivering the expected benefits.

Finally, we would also like to see this organisation act as a platform for companies to recruit people into the industry by posting apprenticeships, training and employment opportunities on their platform.

## Building regulations



### Providing clarity

The Government should take action to ensure that a lack of clarity about building and planning regulations is not a block to domestic properties adopting energy-efficiency measures. We recommend that clear guidance be provided to address this lack of clarity – and that options be explored for how to simplify the system to remove as much friction as possible for those seeking to adopt energy-efficiency measures. The Government and local authorities should also provide clear information and a checklist of things for consumers to consider – something which could be factored in as part of the one-stop shop we recommend.

### Retrofitting in conservation areas

England currently has around 10,000 conservation areas – which exist to manage and protect the special architectural and historic interest of a place. The function of these areas is important and should be maintained – but the rules around conservation areas should not serve as a needless block to cost-effective retrofit and energy-efficiency measures.

Windows provide a good example where more thought is required on this front. Traditional windows, especially those that are single-glazed, are much less energy efficient compared to modern double or triple-glazed windows. However, in conservation areas, there are strict rules which can make retrofitting complicated and expensive.

For example, these rules require that window replacements be “like-for-like in material and appearance” – something which means that replacements can cost many thousands of pounds more than cheaper materials that would still result in a ‘like-for-like’ look. To address this, we recommend that an approach of ‘sympathetic replacement’ is adopted for conservation areas. This step would allow for the appearance of buildings to be maintained in conservation areas while utilising modern energy-efficient technologies.

Equally, local authorities should be mandated (with strict enforcement measures) to ensure they are updating their conservation guidelines to take account of new energy-efficiency technologies and be encouraged to relax guidelines that stand in the way of improvements.

There should also be action to address the need to reduce the carbon emissions of commercial buildings by encouraging retrofit and highly energy-efficient performance. While updated building standards, such as Part L (where commercial buildings will be required to produce approximately 27% lower $CO_2$ emissions than under the current standards), the drive towards commercial retrofit has been largely market-led, meaning there has been little incentive to move beyond compliance with regulations.

We therefore recommend that the Government takes a policy-led approach to encourage and drive net-zero carbon retrofit, outlining minimum performance standards for commercial buildings.

This could be done on an incremental basis, with the Government publishing a clear roadmap for commercial retrofit that would set out standards to be reached over the next decade towards 2035 and commitment to achievable targets that are unlikely to be rolled back. An approach along these lines would encourage innovation in retrofit technology, potentially driving economic growth in the process.

Crucially, this should be based on the performance of the building, rather than merely compliance, encouraging investment in the best-performing technology and solutions while ensuring building managers are incentivised to keep performance high in practice. This is known as a Design for Performance approach and has been effectively mandated in Australia, for example.

## Reforming EPCs

Alongside the measures for commercial buildings set out above, the Government should also look at reforming EPCs for commercial buildings to encourage performance over compliance. EPCs have a range of flaws, with their inability to reflect real-world energy performance being the biggest challenge. Given their role underpinning Government policy and targets, we do not suggest replacing EPCs. Instead, we recommend that they be overhauled to ensure that they can provide an accurate and useful assessment of how the energy performance of commercial buildings improves.

To make this happen, we recommend the Government refines the existing EPC methodology to focus on the carbon performance of the building, taking into account the energy and carbon metrics of a building rather than just the fuel cost of heating.

## Embodied carbon

Finally, in its approach to how non-domestic buildings play a role in helping to achieve net zero, the Government should ensure that the embodied carbon of these buildings is taken into account. Embodied carbon refers to the remaining "emissions associated with materials and construction processes throughout the whole lifecycle of a building or infrastructure". This is typically associated with any processes, materials or products used to construct, maintain, repair, refurbish and demolish a building. Studies show that as operational emissions decrease from properties as retrofits take place, embodied carbon will form over half of built environment emissions by 2035.

To ensure that embodied carbon is accounted for as part of retrofit and the carbon emissions of our buildings, the Government should urgently consider implementing 'Part Z' regulations – which have been developed by industry to ensure that embodied carbon is assessed on all projects, as part of a comprehensive whole-life carbon assessment.

# Conclusion

Decarbonising the built environment is essential if the UK is to achieve its 2050 net-zero goal. To make this a reality, the Government should take a long-term approach that commits to delivering the retrofit of buildings across both domestic and commercial settings.

Making this a reality will require commitment and vision. This paper has set out several ideas that could play an important role in helping to decarbonise the built environment, from putting a long-term energy-efficiency pipeline in place to making retrofit as easy as possible by creating a one-stop shop for everything related to energy efficiency.

Regulatory change is also important. Putting a clear roadmap in place for how commercial buildings can be decarbonised, reforming EPCs to ensure that they can provide a genuinely useful record of a building's performance and taking account of the role of embodied carbon are all important steps to meet our net-zero targets.

The measures we have suggested will require political will and commitment across parties and successive governments. Hitting our net-zero goal is not just a laudable ambition – it is crucial for this country and future generations as well as being an economic benefit. This will deliver not only growth, but important social benefits such as reduced fuel poverty and health outcomes. As a business playing a key role in delivering net-zero solutions across the UK, we are optimistic that the recommendations we have made can play a significant role in meeting our net-zero targets.

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