

Bankers   
for NetZero

# The retrofit revolution



# About Bankers for Net Zero

Bankers for Net Zero is a collaborative initiative bringing together leaders from the UK banking sector, along with representatives from business and government, who share a commitment to accelerating the UK's transition to net zero carbon emissions. The initiative was established in 2020 to develop ambitious but achievable policy recommendations and pledges to action ahead of COP26.

The banks participating in the initiative are Barclays, ClearBank, Ecology Building Society, Handelsbanken, Tide and Triodos. Delivery of the initiative's programme of work is led by the All Party Parliamentary Group on Fair Business Banking, Volans and Re:Pattern, and overseen by a Steering Committee made up of representatives from the participating banks, along with the UNEP Finance Initiative, the COP26 Champions team, the UK Green Building Council, the Grantham Research Institute at the London School of Economics, the Club of Rome and the Impact Investment Institute.

The Bankers for Net Zero retrofits working group was established in September 2020, in partnership with the UK Green Building Council, which has supported the process with invaluable insights from its network of members.

## About this Briefing Paper

This paper is written primarily for parliamentarians and policy makers. Our aim is to set out in the simplest terms possible how the UK can grasp the major political, economic, social and environmental opportunity of the Retrofit Revolution needed to achieve our net zero goals.

The ideas and recommendations in this document are the product of a series of working sessions involving banks, businesses in the real estate sector, and representatives from both local and central government. Rather than simply presenting a wishlist of policy ideas, our aim has been to take a clear-eyed, pragmatic look at what it will take to "crowd in" private finance and kick-start a self-sustaining retrofit boom that benefits the whole of the UK.

The Bankers for Net Zero initiative participants and partners are eager to work with parliamentarians and policy makers to bring the ideas in this paper to fruition and to ensure that government action has the desired impact of catalysing private sector action.



“Achieving net zero by 2050 will require a transition of the whole economy, and cross-sector collaboration is absolutely key to success. We recognise that retrofitting homes and buildings is a critical component of the UK’s net zero plan, and we support Bankers for Net Zero in their efforts to find the practical policy solutions and the public/private collaboration that will be required to achieve our common goal.”

**Barclays plc**

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“As we emerge from the disruption wrought by Covid-19, the banking sector has a critical role to turn this crisis into a defining moment in the urgent fight against climate change, delivering the financial solutions that are essential to support a green recovery and meet our net zero carbon targets.

“This important report shows how, with COP26 taking place later this year, a Government-led National Retrofit Strategy is urgently needed to kickstart the retrofit revolution required to reach the UK Government’s goal of net zero emissions by 2050 and help create jobs. We’d like to see this deliver a wide-ranging package of measures to support green building including: fiscal incentives such as stamp duty reform to incentivise greener homes; slashing VAT on renovations; tightening building regulations; building the retrofit supply chain and driving the market for green finance.

“Ecology has been providing green mortgages for 40 years and we’ve proved that incentivising energy efficiency through our unique C-Change discounts works by basing our mortgage rates on a property’s climate impact. We’re pleased to be sharing our experience and contributing to the ongoing work of Bankers for NetZero retrofits working group.”

**Paul Ellis, Chief Executive, Ecology Building Society**

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“Our Scandinavian property customers are increasingly engaged in climate adaptation and transition, and we are keen to help catalyse similar action here in the UK. For owners to prioritise retrofit, they need to see clearly what’s coming down the road and that the system rewards rather than punishes early action. We believe the measures set out in this report offer the long-term regulatory certainty, investment rationale and basic tools required to drive customer action on net zero transition.”

**Richard Winder, Head of UK External Affairs, Handelsbanken**

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“At Triodos Bank, we have long recognised the need for a more strategic and joined up approach to address the complex challenges faced by the retrofit industry and have welcomed the opportunity to contribute to formulation of this briefing giving much needed momentum to the transition demanded of us to achieve Net Zero in the built environment.

“The combined social and environmental benefits of energy efficient homes and workplaces, and the associated job creation cannot be overstated, however, interventions to date have been piecemeal and unable to stimulate the huge change of pace required to meet this need. The recommendations put forward in this briefing provide policy makers with a long-term cohesive approach to unlock the potential of retrofit, and with COP26 on the horizon, it would give the UK a unique opportunity to demonstrate to a global audience what leadership on tackling climate change looks like.”

**Simon Crichton, Head of Relationship Management, Triodos Bank UK**

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“UKGBC firmly supports holistic building retrofit as a national priority and is convinced that the combined total benefit of the recommendations set out in this paper could be significantly greater than the sum of their parts. We look forward to continuing working with our >530 members and Bankers for Net Zero to keep demonstrating the ever strengthening case for building retrofit.

“This briefing paper sets out a convincing rationale, based on robust examples and empirical evidence, that the right policy landscape and regulatory interventions can unlock significant and measurable environmental, economic and social benefits.”

**Munish Datta, Director of Membership & Operations, UK Green Building Council**

# A win-win-win opportunity

Greening the built environment is one of the biggest economic, social and environmental opportunities for the UK over the next three decades. It will create jobs, stimulate economic growth, reduce fuel poverty, improve health and wellbeing – not to mention helping to eliminate the 40% of UK greenhouse gas emissions that are produced by the built environment sector.<sup>1</sup>

Because of all the benefits and co-benefits that retrofits offer, there is also a significant political dividend to be reaped by any government that delivers effective policy in this area. The total size of the political, economic, social and environmental dividend from decarbonising the UK building stock is pretty much set. The only unknown is how that dividend will be distributed over time. Failure to take transformative action today will mean that it is the households, businesses and governments of the 2030s and 2040s that benefit disproportionately, while today's citizens get a raw deal of high energy costs, high pollution and low growth.

Some aspects of the net zero transition will involve us choosing to make sacrifices today for the benefit of future generations. But this is not one of those aspects. A bold national retrofit strategy will benefit today's citizens as much as tomorrow's.

ECONOMIC	ENVIRONMENTAL	SOCIAL
<p><b>Cost savings:</b> investment in home renovation for net zero will reduce household energy expenditure by £7.5 billion per year<sup>2</sup></p> <p><b>Enhanced property valuations:</b> retrofits increase both the sale and rental value of homes and buildings.<sup>3</sup> Properties with an EPC rating A sell for 14% more than equivalent properties with an EPC rating G.<sup>4</sup></p> <p><b>Higher growth:</b> lower energy bills for households and businesses means higher consumer demand and higher productive investment. An investment of £8.5 billion in energy efficiency measures would deliver benefits totalling £92.7 billion.<sup>5</sup></p>	<p><b>Lower GHG emissions:</b> around 40% of the UK's carbon emissions derives from the built environment<sup>6</sup></p> <p><b>Energy Savings:</b> through cost-effective investments in energy efficiency, total energy use can be reduced by an estimated 25% by 2035<sup>7</sup></p> <p><b>Catalysing behaviour change:</b> people who experience their home or place of work being retrofitted are more likely to make sustainable lifestyle choices</p>	<p><b>Jobs:</b> over 150,000 skilled and semi-skilled jobs can be created by 2030<sup>8</sup></p> <p><b>Less fuel poverty:</b> reducing total energy use by 25% by 2030 would lead to average energy savings of roughly £270 per household per year<sup>9</sup></p> <p><b>Health and wellbeing:</b> retrofits can save the NHS £0.42 for every £1 spent on energy efficiency measures, reducing yearly costs of around £1.4 billion in England alone<sup>10</sup></p>

<sup>1</sup> <https://www.ukgbc.org/climate-change>

<sup>2</sup> [https://www.theeig.co.uk/media/1096/eeig\\_report\\_rebuilding\\_for\\_resilience\\_pages\\_01.pdf](https://www.theeig.co.uk/media/1096/eeig_report_rebuilding_for_resilience_pages_01.pdf)

<sup>3</sup> A 2008 study of the US commercial property market found that buildings with LEED (Leadership in Energy and Environmental Design) certifications commanded a rental premium of 5% and a sales price premium of 26% on average. See Fuerst, F. and McAllister, P. M. (2008). "Green Noise or Green Value? Measuring the Effects of Environmental Certification on Office Property Values." pg.1,3. <https://ssrn.com/abstract=1140409>

<sup>4</sup> Department of Energy & Climate Change, 2013. An investigation of the effect of EPC ratings on house prices.

<sup>5</sup> Rosenow, J., Guertler, P., Sorrell, S., Eyre, N., The remaining potential for energy savings in UK households, Energy Policy, 2018, Vol.121, pp. 542-552.

<sup>6</sup> <https://www.ukgbc.org/climate-change>

<sup>7</sup> Rosenow, J., Guertler, P., Sorrell, S., Eyre, N., The remaining potential for energy savings in UK households, Energy Policy, 2018, Vol.121, pp. 542-552.

<sup>8</sup> [https://www.theeig.co.uk/media/1096/eeig\\_report\\_rebuilding\\_for\\_resilience\\_pages\\_01.pdf](https://www.theeig.co.uk/media/1096/eeig_report_rebuilding_for_resilience_pages_01.pdf)

<sup>9</sup> Rosenow, et al, The remaining potential for energy savings in UK households, Energy Policy, 2018, Vol 121, pp. 542-552

<sup>10</sup> UK Green Building Council, Regeneration and Retrofit Task Group Report, October 2017

## PANEL 1: What others say about the benefits of retrofitting

*'Energy efficiency measures and other building retrofit works are among the most cost-efficient ways to reduce emissions, with many co-benefits including improved living standards, healthier and more resilient communities, and the delivery of new, skilled green jobs in every part of the country. Focussing on buildings will therefore help the UK deliver on its climate targets, support a green and inclusive recovery, and generate innovative green finance opportunities.'*

**GREEN FINANCE INSTITUTE, MAY 2020<sup>11</sup>**

*'There is growing consensus and action from experts (including the Committee on Climate Change, National Infrastructure Commission, International Energy Agency and UK universities) and governments (Denmark, New Zealand) that emphasises the role of buildings' energy efficiency in pandemic recovery to meet economic, climate, health and resilience goals. Energy efficiency stimulus in the UK is a route to sustained benefits from jobs, increased consumer spending, getting on track to net zero, removal of avoidable pressure on the NHS, and households and businesses more resilient to public health, economic and climate risks.'*

**ENERGY EFFICIENCY INFRASTRUCTURE GROUP, JUNE 2020<sup>12</sup>**

# The challenge

## If retrofitting homes and buildings is such a no-brainer, why is it not already happening at greater speed and scale?

At present, demand in both the domestic and non-domestic sectors is held back by a number of factors, including: low levels of awareness about the solutions available and their benefits; split incentives; and misalignment between businesses' and households' investment time horizons and the payback periods for deep retrofits. Critically, businesses and households struggle to quantify the value enhancement and cost reduction potential of undertaking deep retrofits, meaning that they do not see a compelling case to prioritise investments in energy efficiency and heat decarbonisation.

The key challenge for policymakers is therefore to stimulate demand through a package of credible, quantifiable "sticks and carrots" that strengthen the investment case for private businesses and households, while using public investments in decarbonising social housing and public buildings to "pump-prime" the market for deep retrofits.

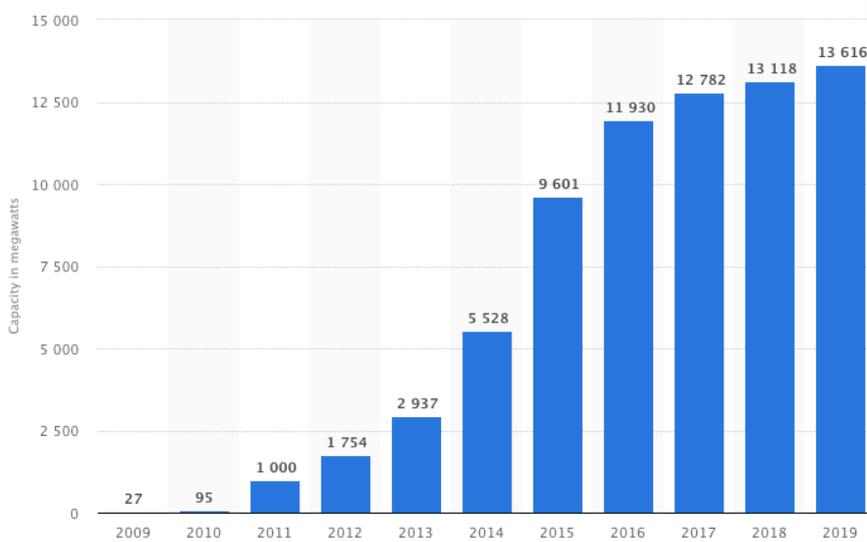
<sup>11</sup> <https://www.greenfinanceinstitute.co.uk/wp-content/uploads/2020/06/Financing-energy-efficient-buildings-the-path-to-retrofit-at-scale.pdf>

<sup>12</sup> [https://www.theeeig.co.uk/media/1096/eeig\\_report\\_rebuilding\\_for\\_resilience\\_pages\\_01.pdf](https://www.theeeig.co.uk/media/1096/eeig_report_rebuilding_for_resilience_pages_01.pdf)

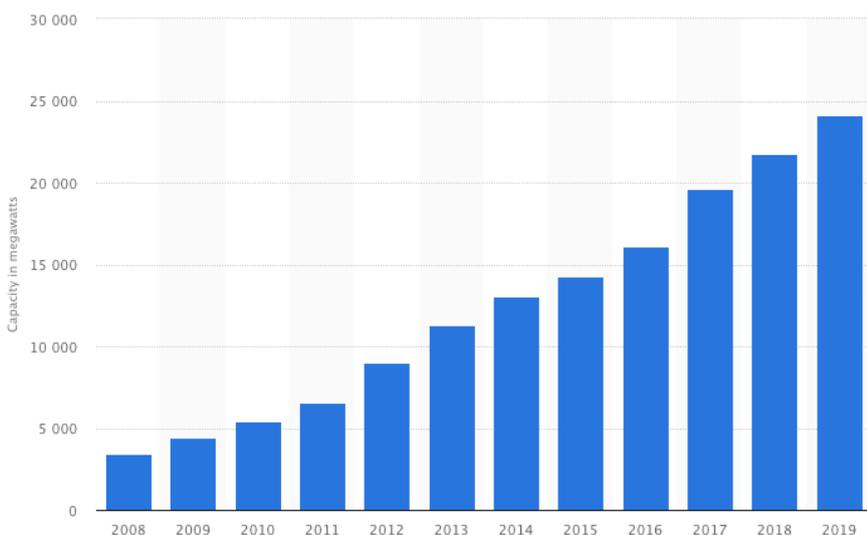
# Learning from success:

## How Retrofits can become the next Solar and Wind

The rapid growth of the solar and wind power industries – in the UK and elsewhere – is one of the biggest industrial success stories of the early 21st century. Since 2004, installed solar capacity worldwide has increased more than 100-fold.<sup>13</sup> In the UK, it has increased 500-fold just since 2009.<sup>14</sup> Installed wind capacity in the UK is up a more modest five-fold since 2009 – but from a significantly higher starting point.<sup>15</sup>



**Figure 1:** Annual cumulative installed capacity of solar photovoltaic in the United Kingdom from 2009 to 2019 (Statista)<sup>16</sup>



**Figure 2:** Total installed wind power capacity in the United Kingdom 2008-2019 (Statista)<sup>17</sup>

<sup>11</sup> <https://www.greenfinanceinstitute.co.uk/wp-content/uploads/2020/06/Financing-energy-efficient-buildings-the-path-to-retrofit-at-scale.pdf>

<sup>12</sup> [https://www.theeig.co.uk/media/1096/eieg\\_report\\_rebuilding\\_for\\_resilience\\_pages\\_01.pdf](https://www.theeig.co.uk/media/1096/eieg_report_rebuilding_for_resilience_pages_01.pdf)

<sup>13</sup> <https://www.economist.com/technology-quarterly/2021/01/07/how-governments-spurred-the-rise-of-solar-power>

<sup>14</sup> <https://www.statista.com/statistics/792406/cumulative-solar-pv-capacity-united-kingdom/>

<sup>15</sup> <https://www.statista.com/statistics/421861/wind-power-capacity-in-the-united-kingdom/>

<sup>16</sup> <https://www.statista.com/statistics/792406/cumulative-solar-pv-capacity-united-kingdom/>

<sup>17</sup> <https://www.statista.com/statistics/421861/wind-power-capacity-in-the-united-kingdom/>

Meanwhile, costs have plummeted – globally, by more than 80% since 2010 for solar power and more than 50% for wind<sup>18</sup> – for the simple reason that the more solar and wind power we produce, the cheaper and more efficient that power becomes because the market rewards innovation. As a result, subsidy-free solar and wind power are now cost-competitive with other forms of energy in much of the world – and costs continue to fall.

**If we learn the right lessons from what has enabled the wind and solar industries to take off – both in the UK and elsewhere – the retrofit industry can and should be the next exponential success story on the road to net zero.**

Retrofitting relies on technologies and processes that become cheaper as deployment scales up. That means that once a tipping point is reached, the industry can and will go exponential. The challenge is getting to the tipping point as quickly and efficiently as possible. This is where well-designed policy is critical. The solar and wind industries have arrived at the point where their growth is self-sustaining because of decisions taken by governments around the world, including in the UK, to support those markets through their infancy.

**The tipping point for the retrofit industry will come when the (falling) market cost for renovations meets the (rising) market value for improvements.** Research on house prices across the UK indicates that improving a home's EPC rating from D (the current median for England, Wales and Scotland) to A/B increases the market value of a property by around £14,000 on average.<sup>19</sup> For fully net zero retrofits, the value premium is likely to be even higher. The combination of “carrot and stick” incentives from government and increasing public awareness should drive the value premium for properties with a better energy efficiency rating even higher. **At the point of parity between (declining) costs and (increasing) value enhancement, banks will be able to lend against the future value improvement. Market forces will then kick in and drive an exponential take-off.**

<sup>18</sup> <https://about.bnef.com/blog/battery-powers-latest-plunge-costs-threatens-coal-gas/>

<sup>19</sup> <https://www.moneysupermarket.com/gas-and-electricity/value-of-efficiency/>



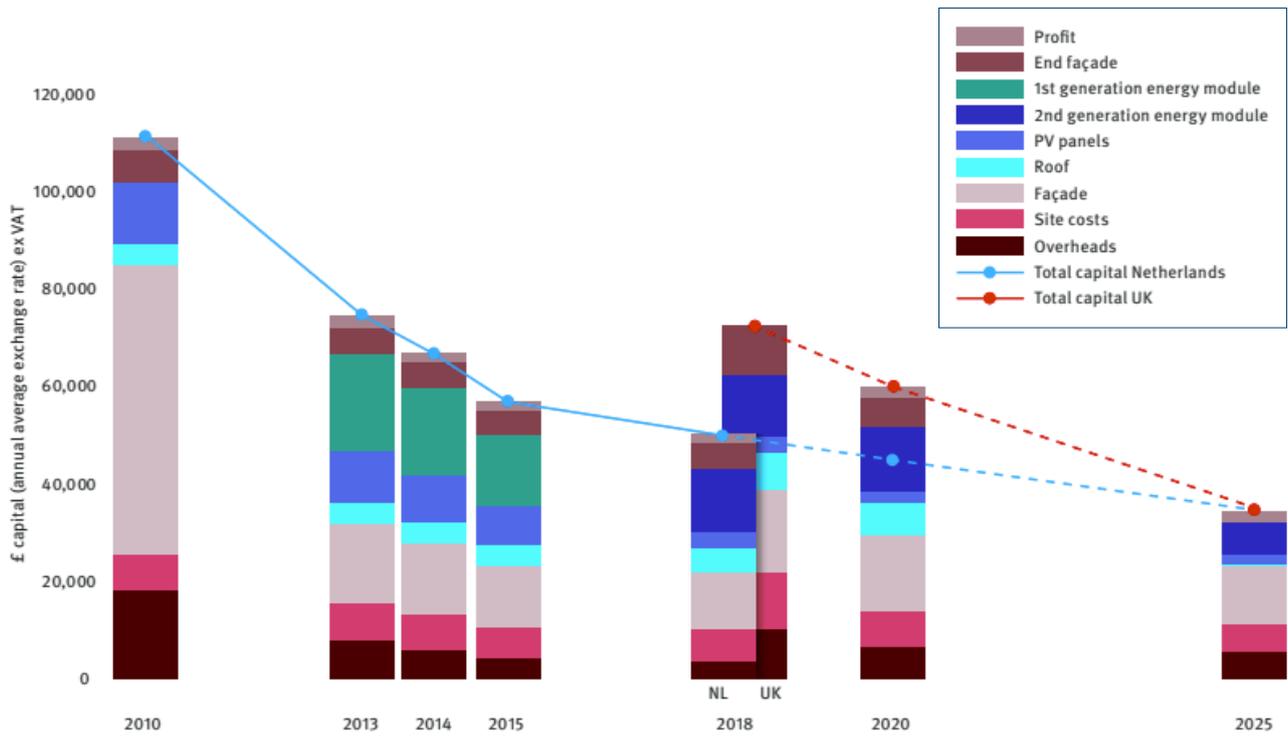


Figure 3: Declining cost curves for Deep Retrofits in Netherlands and the UK (Green Alliance)<sup>20</sup>

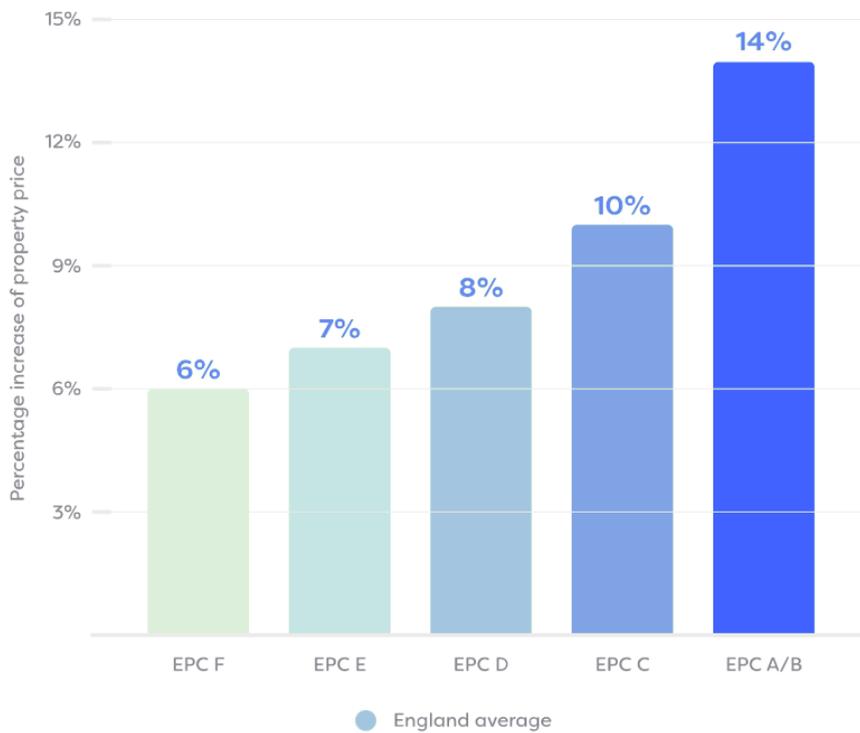


Figure 4: Average increase in property valuations as EPC rating improves (moneysupermarket.com)<sup>21</sup>

<sup>20</sup> [https://www.green-alliance.org.uk/resources/reinventing\\_retrofit.pdf](https://www.green-alliance.org.uk/resources/reinventing_retrofit.pdf)

<sup>21</sup> <https://www.moneysupermarket.com/gas-and-electricity/value-of-efficiency/>

# Getting to the Tipping Point:

## What it will take

Getting to the tipping point for the deep retrofit market will require a package of policy and regulatory measures. The technologies to retrofit buildings to a net zero standard are largely proven: see, for example, the Zero Energy Buildings Catalyst (ZEBCat) project that ran in Devon from 2018-20<sup>22</sup> and the Energiesprong pilot project with Nottingham CityHomes, which launched in 2017.<sup>23</sup> The challenge is to accelerate the journey from technical feasibility to commercial feasibility.

This can be achieved by:

- 1. Front-loading market support and then tapering that support over time.** This is critical because, in the absence of policy intervention, the knowledge that the costs of retrofitting will fall in the future has a dampening effect on demand today. By front-loading market support and making it clear from the outset that the support will be withdrawn in increments over time, policy can counteract the incentive that exists for property owners to wait for costs to come down. In this sense, the UK's Feed-in Tariff for renewable energy deployment that was in place from 2010-19 is a model for the type of support the retrofit market needs now.
- 2. Providing long-term clarity about how minimum energy efficiency standards will ratchet up over time –** and what the penalties for non-compliance will be – reinforcing the “carrot” of market support with a credible, quantifiable “stick”. This will help give manufacturers, installers and, crucially, finance providers the confidence about future demand they need in order to invest in production capacity and skills today.
- 3. Ensuring financial regulation supports the bankability of retrofit projects.** The closer banks can get to lending against 100% of the value increase from retrofits, the faster the tipping point for subsidy-free market take-off will come. Current loan-to-value ratios in the commercial property sector are typically around 60%.<sup>24</sup> Additional guidance from regulators on the desirability of lending for retrofit projects could help push this higher.

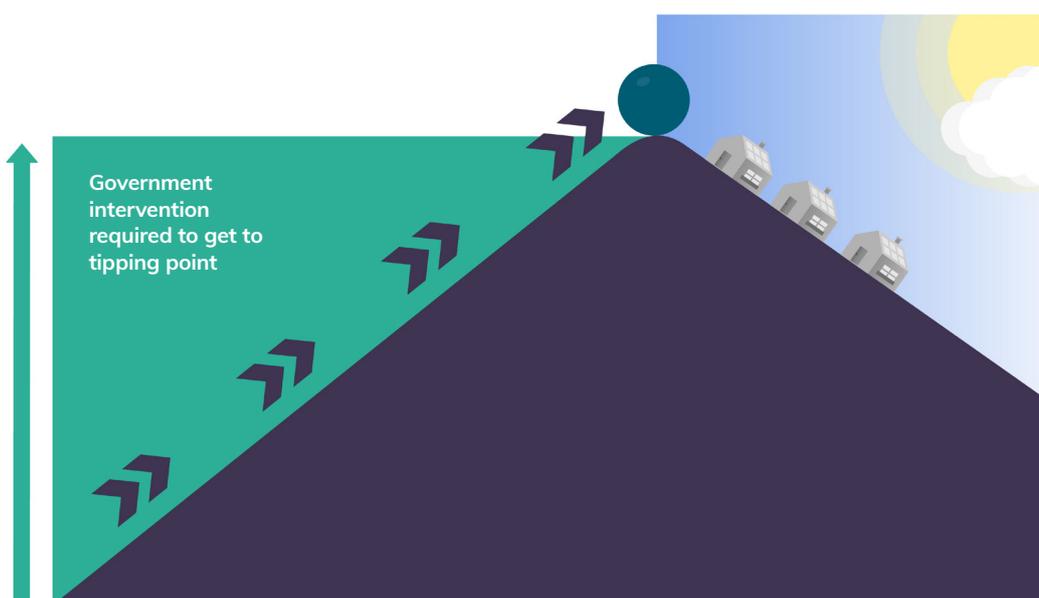


Figure 5: Policy Design Framework for Deep Retrofits (Bankers for Net Zero)

<sup>22</sup> <https://www.regen.co.uk/project/zero-energy-buildings-catalyst/>

<sup>23</sup> <https://www.energiesprong.uk/projects/nottingham>

<sup>24</sup> <https://www.city.ac.uk/news-and-events/news/2018/10/cass-uk-commercial-real-estate-lending-report-published#>

# How to kickstart a Retrofit Revolution

With the right support, the retrofit industry can achieve an exponential take-off during the 2020s and 2030s – delivering tangible economic, social and environmental benefits for the whole of the UK. The key to achieving this is putting together a package of long-term measures that gets the “R number” for retrofits rising by making it pay to “go first” and “go deep”.<sup>25</sup>

If, on the other hand, the UK Government pursues a piecemeal approach to retrofits, this will actively hinder the industry’s growth, undermine consumer and business confidence, and reduce the amount of private finance mobilised.

The positive scenario is that public investment “crowds in” private finance worth several times the original government outlay. For example, for every €1 spent by Germany’s national infrastructure bank KfW to incentivise energy efficient renovation through interest rate and capital subsidies in 2016, building owners were motivated to borrow and spend €6.<sup>26</sup> If the same ratio were achievable on the £9.2 billion worth of commitments to energy efficiency investment made in the Government’s 2019 manifesto, this could unlock some £55 billion of private finance. Retrofits should be a top priority for the UK’s new National Infrastructure Bank, with the goal of crowding in private finance, as KfW has done in Germany.

**The real litmus test for retrofit policy is not simply the amount of direct funding the Government commits, but how much additional private finance and investment is mobilised as a result.** The recommendations developed by the Bankers for Net Zero retrofits working group are designed to ensure that multiple is as high as possible.

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## THE IDEAS WE NEED

The landscape of available policy and regulatory interventions for advancing the Retrofit Revolution is laid out in two significant reports published in 2020:

- **Financing energy efficient buildings: the path to retrofit at scale**  
(Green Finance Institute, May 2020)<sup>27</sup>
- **Energy efficiency’s offer for a net zero compatible stimulus and recovery**  
(Energy Efficiency Infrastructure Group, June 2020)<sup>28</sup>

These reports build on extensive consultations and engagement with industry and finance, and they offer an extremely robust, credible and comprehensive set of recommendations for building – and financing – a job-creating, growth-enhancing UK-wide Retrofit Revolution (see summary table on next page for highlights).

Our purpose here is not to revisit all of the specific interventions laid out in these two reports, but rather to focus on the need for an overarching retrofits strategy containing multiple measures which, when combined, will kickstart a market revolution.

Bankers for Net Zero is not alone in calling for a National Retrofit Strategy: the Construction Leadership Council and the Royal Institute of British Architects have both recently issued calls for the same, which we support.<sup>29</sup>

The danger of a stop-start, pick-and-mix approach to policymaking in this area is well-documented. **Now is the moment to move from one-off measures to a cohesive, long-term package – to move, in other words, from tinkering to transformation.**

<sup>25</sup> Deep retrofits are those that take a holistic, whole-building approach to energy and carbon reduction, delivering efficiency gains of 50% or more. See, for example, <https://www.regen.co.uk/project/zero-energy-buildings-catalyst/>

<sup>26</sup> [https://www.theeieg.co.uk/media/1096/eeig\\_report\\_rebuilding\\_for\\_resilience\\_pages\\_01.pdf](https://www.theeieg.co.uk/media/1096/eeig_report_rebuilding_for_resilience_pages_01.pdf)

<sup>27</sup> <https://www.greenfinanceinstitute.co.uk/wp-content/uploads/2020/06/Financing-energy-efficient-buildings-the-path-to-retrofit-at-scale.pdf>

<sup>28</sup> [https://www.theeieg.co.uk/media/1096/eeig\\_report\\_rebuilding\\_for\\_resilience\\_pages\\_01.pdf](https://www.theeieg.co.uk/media/1096/eeig_report_rebuilding_for_resilience_pages_01.pdf)

<sup>29</sup> <https://www.constructionleadershipcouncil.co.uk/news/national-retrofit-strategy-consultative-document/>; <https://www.architecture.com/-/media/GatherContent/Paywalled-resource-with-many-PDFs-VPC/Additional-Documents/GreenerHomespdf.pdf>



## PANEL 2: Summary of key recommendations developed by GFI and EEIG

The reports by the Green Finance Institute and the Energy Efficiency Infrastructure Group set out a broad range of measures designed to unlock the flow of finance into the retrofit industry. Key recommendations common to both reports include:

1. A government-backed **loan guarantee mechanism** for lending to at-scale renovation projects anchored in social housing to scale-up a quality supply chain.
2. **Long-term regulatory clarity** for rented housing and new Minimum Energy Efficiency Standards for owner-occupied homes.
3. **Fiscal incentives** for able-to-pay owner-occupiers and private landlords (eg., lower Stamp Duty for more efficient homes; Enhanced Capital Allowances for investment in retrofitting; zero VAT on low and zero carbon products<sup>30</sup>).
4. Make good on manifesto commitments to **invest in decarbonising social housing and public sector buildings**, using these to pump-prime the wider market and bring down costs.
5. A government standardised methodology and framework for **Building Renovation Passports**.

<sup>30</sup> <https://www.ecotricity.co.uk/our-news/2021/dear-rishi-join-our-campaign-for-a-green-britain>

# Putting it all Together:

## A National Retrofit Strategy

The key factor in unlocking an exponential market take-off for the retrofit industry is to move from one-off measures to a cohesive set of aligned policies that together can drive up supply and demand, drive down costs and mobilise private finance.

The approach needs to be holistic rather than piecemeal. That means treating heat and energy efficiency not as separate policy priorities, but as two complementary elements in an overall retrofits strategy that has the needs of property owners and occupiers (both domestic and commercial) at its core.

### NOT ALL RETROFITS ARE CREATED EQUAL

Historically, the average energy footprint reduction from housing retrofits in Europe (including the UK) has been just 9%.<sup>31</sup> We now need to aim for closer to 100% if we're to have a reasonable chance of getting to Net Zero in less than 30 years and delivering the kind of savings to households and businesses on their energy bills that are possible.

**Deep retrofits – ie., retrofits that take a whole-building approach, delivering 50-100% reductions in energy and carbon footprint – must therefore be at the heart of a national retrofit strategy.**

Firstly, deep retrofits can generate cost savings and health benefits of a magnitude that is material to most households and businesses, whereas shallow retrofits are less likely to do so. Secondly, for reasons of convenience and practicality, most households and businesses would prefer to do more in one go, rather than have to go through multiple rounds of retrofitting with all the disruption that entails.

There are two key challenges for deep retrofits that policy intervention needs to overcome:

1. Deep retrofits are currently expensive, meaning the timescale over which they will pay for themselves in cost savings is too long for the investment to be attractive to most property owners. Research suggests that the majority of domestic property owners are only willing to invest in projects with a payback period of no more than 2-3 years.<sup>32</sup> A survey of commercial real estate companies conducted by Bankers for Net Zero and the UK Green Building Council found that their time horizons are typically longer (averaging 5.5 years) – but not long enough to make deep retrofits commercially attractive today.
2. Businesses and households can rationally expect that deep retrofits will become cheaper over time, meaning that, all else being equal, it makes sense to put off investing for as long as possible. Except, of course, that if all property owners decide to wait, costs won't come down as quickly and it will take much longer to get to a market tipping point.



<sup>31</sup> [https://ec.europa.eu/energy/sites/ener/files/documents/1.final\\_report.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/1.final_report.pdf)

<sup>32</sup> <http://www.buildup.eu/sites/default/files/content/behavioural-insights-on-energy-efficiency-in-the-residential-sector.pdf>

To overcome these challenges, the optimal design for a National Retrofit Strategy will combine the following elements:

- 1. Front-load and taper market support:** to counteract property owners' rational inclination to "wait and see", government should offer a subsidy (modelled on the Feed-In Tariff) for all domestic and non-domestic deep retrofit projects – and then withdraw the subsidy in increments over the next decade (making clear from the outset that this tapering will happen). The level of subsidy should be calculated as a percentage of proposed capital expenditure, with the percentage dependent on the "depth" of the retrofit (ie., higher subsidies for deeper cuts in GHG emissions).
- 2. Use public investment to pump-prime the market:** government funding should be targeted towards deep retrofits in the social housing sector and public buildings (eg., schools and hospitals) via the Social Housing Decarbonisation Fund (SHDF) and Public Sector Decarbonisation Scheme (PSDS). The funds already committed to these schemes in the Government's 2019 manifesto (£3.8 billion over 10 years for SHDF; £2.9 billion over 5 years for PSDS) should be brought forward to turbocharge demand and reduce costs.
- 3. Use loan guarantees, enhanced capital allowances and PACE financing to "crowd in" private finance:** underwriting a proportion of the risk involved in lending to deep retrofit projects will increase the total amount of finance available. Some of the funding committed for social housing and public sector decarbonisation should be rolled out in the form of loan guarantees to help make projects attractive to banks and other finance providers. The new National Infrastructure Bank should have a critical role to play here. Enabling Property Assessed Clean Energy (PACE) financing is another proven means of crowding in private finance (eg., in the US, more than \$5 billion has been mobilised).<sup>33</sup>
- 4. Quantify and ratchet penalties for non-compliance with energy efficiency standards:** in order for Minimum Energy Efficiency Standards to materially bolster demand for retrofits, it is critical that future penalties for non-compliance are quantified today. Setting future penalties at predetermined levels will enable these to be factored into property valuations and financing decisions today, creating a real incentive for property owners to upgrade their homes and buildings ahead of the deadline for compliance. Both the minimum standard and the size of the penalty for non-compliance should ratchet up over time.<sup>32</sup>
- 5. Align policy and financial regulation:** the quantity of finance available for retrofits is influenced by the approach to regulating risk in the commercial and domestic property sectors taken by the Bank of England and the Prudential Regulation Authority. In order to ensure that financial regulation does not become an unnecessary barrier to financing the net zero transition, the Bank of England's mandate should be updated to incorporate an explicit responsibility for aligning finance flows with the UK's statutory climate targets.

Critically, a "pick and mix" approach to policy-making is likely to be counter-productive. Trust in government policy in this area is already low, as a result of experience with the Green Deal and Green Homes Grant. Any more tinkering will further delay the tipping point when market forces can be relied on to kick in and drive a self-sustaining retrofit boom.

With COP26 fast approaching, now is the moment for a bold and comprehensive national retrofit strategy that creates jobs, stimulates growth, ends fuel poverty, contributes to the government's "levelling up" agenda, slashes carbon emissions and makes the UK's built environment the envy of the world.

<sup>33</sup> PACE schemes enable property owners to receive financing to support 100% of the upfront costs for a retrofit project. The liability is secured against the property and repaid through an additional property tax, typically over extended timescales (e.g. 15-25 years). Importantly, the liability remains with the property if there is a change of ownership. For more, see <https://www.greenfinanceinstitute.co.uk/wp-content/uploads/2020/06/Financing-energy-efficient-buildings-the-path-to-retrofit-at-scale.pdf>

# Policy priorities

**Getting to a net zero built environment by 2050 at the latest is both an enormous challenge and a huge opportunity. In this year when the UK is firmly in the spotlight as host of COP26, the Government's approach to decarbonising heat and buildings is arguably the most important litmus test of the UK's credibility as a global leader in the fight to avert climate catastrophe.**

There are essentially two approaches to decarbonising the built environment: the incremental "10% at a time" approach; or the transformational "100% first time" approach. Only the latter has the slightest hope of achieving the goal of a net zero built environment before 2050 and convincing a watching world that the UK is up to the task of leading the world in the race to (net) zero.

Deep retrofits – i.e., retrofits that reduce buildings' energy and carbon footprints by 50-100% in one go – must be at the centre of the UK's strategy for decarbonising the built environment. With the right package of policies now, a tipping point for the commercial viability of deep retrofits can be reached within the next 5 years, at which point private industry and finance will be able to do the heavy lifting required to roll out deep retrofits across millions of homes and buildings.

## FOUNDATIONS OF A NET ZERO AGENDA

**Whilst our focus in this paper has been on the built environment specifically, the rate of progress on retrofits will be impacted by wider net zero policies and regulation. It is critical that a national retrofit strategy is nested within a broader net zero pathway that sets clear incentives for businesses and households to decarbonise.**

We look forward to the Government's net zero strategy being published later this year. The following recommendations, which are aligned with the existing policy asks of a wide range of institutions across business, finance, academia and civil society, must be the foundation stones upon which we build a successful retrofit – and wider net zero – strategy:

- 1. Apply a carbon charge to every tonne of CO<sub>2</sub> emitted in the UK.** The Zero Carbon Commission has set out how this can be done in a way that supports a green and just recovery from COVID-19.<sup>34</sup> Carbon pricing is backed by a broad global coalition of business leaders, economists, civil society groups and multilateral institutions. The Zero Carbon Commission's recommendation that the Government set out a clear carbon price trajectory reaching a minimum of £75/tCO<sub>2</sub>e by 2030 across all sectors of the economy is in line with the best available economic analysis of what level of carbon pricing is needed to support Paris alignment.<sup>35</sup>
- 2. Scrap VAT on low and zero carbon products.** The recent campaign on this issue launched by The Daily Express and Ecotricity notes that, in many cases, 'green products which would help in the battle with global warming can carry more VAT than polluting products.' The proposal to scrap VAT on low and zero carbon products would not only fix this distortion but create clear incentives for both consumers and businesses to go green – enabling UK businesses developing low carbon products and services (including many in the retrofit supply chain) to thrive.
- 3. Make all investments that reduce emissions tax-deductible.** The super-deduction announced by the Chancellor of the Exchequer at the 2021 Budget offers a useful model – but it is too short-term to stimulate the level of investment in green industries and technologies needed to meet the UK's net zero by 2050 target. As an immediate priority, the Government should clarify that all investments in renewable energy, energy efficiency and low-carbon heating solutions will be eligible for the super-deduction. Then, specifically for investments in decarbonisation and energy efficiency, the super-deduction should be extended past 31st March 2023, when it is currently set to expire. The generosity of the deduction should decrease in increments after 2023 – from the current 130% to 100% by 2028. After 2028, 100% enhanced capital allowances low-carbon investments should remain in place.
- 4. Ensure net zero is baked into financial regulation.** The Chancellor's recent decision to incorporate support for net zero into the mandate of the Bank of England's monetary policy committee is welcome, but the government should go further: net zero alignment should also be an explicit part of the BoE's regulatory mandate, as recommended by the UK Climate Change Committee's Advisory Group on Finance.<sup>36</sup>

<sup>34</sup> <https://www.zeroc.org.uk/policy-positions>

<sup>35</sup> <https://www.express.co.uk/news/nature/1394662/green-britain-zero-for-zero-explained-sign-express-petition>

<sup>36</sup> <https://www.theccc.org.uk/publication/the-road-to-net-zero-finance-sixth-carbon-budget-advisory-group/>



## KICKSTARTING THE RETROFIT REVOLUTION

There is already excellent work that has been published on policy options, particularly by the Green Finance Institute's Coalition for the Energy Efficiency of Buildings,<sup>37</sup> which has a number of relevant demonstrator projects either underway or in the works. These demonstrator projects include work on new models such as Property Assessed Clean Energy (PACE) financing that members of the Bankers for Net Zero initiative strongly support.

The focus of the Bankers for Net Zero initiative has not been to replicate this excellent work, but rather to focus on developing a strategy that will pump-prime the market to ensure that the retrofit revolution reaches a 'tipping point' as soon as possible. A strategy that involves a focus on high-quality, deep retrofits and a clear regulatory trajectory that gives long-term certainty for investments is critical.

The following steps, which the Government could take immediately, would send a powerful signal of intent in the lead up to COP26 that the UK is committed to leading the world in achieving a rapid and just transition to a net zero built environment:

### 1. Roll out an ambitious programme of deep retrofits in the social housing sector.

We estimate that with an allocation of £800 million over five years (approximately 20% of the £3.8 billion already committed to the Social Housing Decarbonisation Fund), the government could retrofit 5,000 homes a year to a net zero standard every year for the next five years.

Industry analysis suggests that this would be sufficient to bring the cost of a deep retrofit down by 50% – enough to get deep retrofits to the tipping point where many more projects become commercially viable. After that, the private sector can provide the majority of the finance for the next 11 million UK homes – including 2.3 million social homes – to be retrofitted to a net zero standard. Other market interventions will still be required to deal with the remainder of the UK's housing stock, as many older properties are more difficult to retrofit.

Nonetheless, by allocating just 20% of the funding already committed to the SHDF to do a minimum of 25,000 deep retrofits over the next 5 years, the government can unlock a market revolution that would fully decarbonise more than a third of British homes. This investment will need to be front-loaded in order to achieve the 5,000 homes-a-year scale, since costs will be higher for the first 5,000 than for the next 5,000 and so on.

### 2. Bring forward implementation of the Future Homes Standard and Future Buildings Standard to 2022.

Between now and 2025, somewhere in the region of 1 million new homes are expected to be built across the UK. It defies common sense to build these homes to anything other than a net zero standard, since not doing so simply means they will need to be retrofitted at some point in the future – at a potential aggregate cost of £20 billion. The same logic applies for new non-domestic buildings.

This change would also help accelerate the downward cost curve for deep retrofits, since many of the technologies, processes and skills required to deliver a net zero-ready new build overlap with those needed for deep retrofits. In other words, bringing forward the implementation date for the Future Homes Standard and Future Buildings Standard would also bring forward the tipping point for the deep retrofit market.

<sup>37</sup> <https://www.greenfinanceinstitute.co.uk/ceeb/>

<sup>38</sup> [https://www.green-alliance.org.uk/resources/reinventing\\_retrofit.pdf](https://www.green-alliance.org.uk/resources/reinventing_retrofit.pdf)

### 3. Set out a clear pathway for how energy efficiency standards will ratchet up all the way to net zero compliant over the next 20-30 years.

In order for minimum energy efficiency standards to drive a deep retrofit revolution, the long-term pathway to a net zero requirement for all homes and buildings needs to be set out in detail, with a clear deadline and milestones.

The response from the automotive industry to the Government’s decision to ban all new petrol and diesel vehicles from 2030 is a clear example of how long-term signalling from the government can trigger a rapid response from industry. A similar level of clarity about when it will be mandatory for all homes and buildings to be net zero compliant and how minimum standards will ratchet up all the way to that end point is what’s needed to really catalyse a market revolution.

Penalties for non-compliance with these standards as they rise over time should be quantified and published, so that these can be factored into property valuations and financing decisions today, helping the market to move in advance of regulation. In order for minimum energy efficiency standards to be a credible stick that incentivises action, the government must also commit to properly resourcing enforcement of these regulations.

These three simple actions would have the effect of massively accelerating the arrival of a tipping point for the deep retrofit market. Without them, the substantial economic, social and environmental benefits of a retrofit revolution will be deferred until at least the 2030s and the UK’s target of net zero emissions by 2050 will become unachievable. They do not represent the totality of what needs to be done, but they would be powerful, game-changing steps that this Government can take to kickstart the retrofit revolution we need.

#### Policy priorities at a glance: key elements of a comprehensive retrofit strategy

<b>PUMP-PRIMING INVESTMENTS</b>	<ul style="list-style-type: none"> <li>• Use the £3.8 billion committed to the Social Housing Decarbonisation Fund to drive down the costs of deep retrofits</li> <li>• Use the £2.9 billion committed to the Public Sector Decarbonisation Scheme to do the same</li> </ul>
<b>FISCAL MEASURES</b>	<ul style="list-style-type: none"> <li>• Zero VAT for low and zero carbon products</li> <li>• Enhanced Capital Allowances for low and zero carbon products</li> <li>• Carbon charge to be applied to fossil-fuel-based heat and energy</li> </ul>
<b>“CROWDING IN” MECHANISMS</b>	<ul style="list-style-type: none"> <li>• Give the National Infrastructure Bank a mandate to offer loan guarantees for at-scale retrofit projects</li> <li>• Enable PACE financing by empowering Local Authorities to collect repayments via council taxes or business rates</li> </ul>
<b>BUILDINGS REGULATION</b>	<ul style="list-style-type: none"> <li>• Set clear pathways for how energy efficiency standards will ratchet all the way to net zero</li> <li>• Make clear what penalties for non-compliance will look like</li> </ul>
<b>FINANCIAL REGULATION</b>	<ul style="list-style-type: none"> <li>• Incorporate a duty to align finance flows with the UK’s climate targets into the Bank of England’s mandate</li> <li>• Ensure that regulatory guidance to banks does not deter lending to retrofit projects</li> </ul>

# Conclusion:

## From Tinkering to Transformation

**This paper has a very clear message: decarbonising the UK's existing stock of homes and buildings is not only possible, it's a huge (and undervalued) opportunity for the UK – an economic, social and environmental success story waiting to happen.**

Both industry and finance are ready and eager to play their part. Market forces are what will enable the Retrofit Revolution to go exponential, but smart, strategic policymaking is needed to get the market to a tipping point.

The policy solutions exist already: they simply need to be packaged up in the right way to accelerate progress towards the tipping point, past which market forces can be relied on to kick in and drive a self-sustaining retrofit boom. Tinkering won't get us there. Nor will one-off, short-term policy measures like the Green Homes Grant. These need to be embedded within a strategic framework that stretches out to 2050 - with a primary focus on the period to 2030, which will be the critical time for action to build momentum towards the tipping point.

With COP26 on the horizon, the time is right for a bold, long-term national retrofit strategy that drives down the costs of deep retrofits, drives up the value of retrofitted properties and crowds in private finance to help provide the capital needed. If banks, businesses and policymakers work together we can – and will – make retrofits the next big exponential success story of the net zero transition.



# Who we are

Bankers for NetZero members:



Handelsbanken



Triodos Bank

Delivery partners:



Retrofits workstream partner:

