

Briefing



Recommendations for the government's Warm Homes retrofit strategy

What could the Warm Homes Agency and Warm Homes Plan achieve

The TUC believes that the Warm Homes Agency and Plan has potential to:

1. Save families hundreds of pounds and slash fuel poverty
2. Get Britain back on track to meet our climate targets
3. Deliver good skilled jobs for tradespeople in every part of the country
4. Drive up job quality for all retrofit jobs, regardless of the skill level required
5. Act as an instrument of industrial strategy, providing certainty on the retrofit project pipeline, enabling greater investment into delivery, supply chains and skills
6. Replacing the stop-start, short-term target failures of recent years with long-term stability and plans

Top TUC policy priorities for a Warm Homes Agency and Warm Homes Plan

1. Use the Warm Homes Agency to establish stability and longevity in the retrofit works pipeline, deploying an active industrial strategy and guided by a single national purpose
2. Dedicate the majority of the government's additional £6.6bn funding for the delivery by local authorities. Initially, funding should be apportioned across local authorities according to relative fuel poverty of their populations. Alongside delivery, local authorities should be given responsibility for the development of local retrofit delivery strategies.
3. Ensure that retrofit work is rolled out on a well-planned, accountable, worst-first basis that recognises the benefits of a neighbourhood level approach.
4. In-house delivery should be the default setting for retrofit delivery coordinated by local authorities, with a Retrofit Direct Delivery Accelerator, grants for workforce skills development, and in-sourcing loans smoothing the transition. At a minimum, retrofit coordinators should be directly employed in every local authority to support quality, accountability, and job creation.
5. In leveraging private funds and offering government-backed loans, a principle should be established that retrofit always pays; repayments should never exceed the real value of the savings to energy bills achieved by retrofit.
6. Ensure that jobs in retrofit are high-quality by supporting direct employment, with strong procurement requirements, adherence to nationally negotiated terms and conditions, and a national training programme for new entrants and career-transition workers.
7. Empower the Warm Homes Agency to develop a multi-decade National Retrofit Plan, with timelines to upgrade all UK homes to desired energy efficiency standards – in line with CCC targets. The National Retrofit Plan should aim to provide stability and enable investment into delivery, supply chains and skills with an initial 10-year implementation phase.

A turning point for workers and for the UK

The opportunities of a serious, ambitious, and well-funded national Warm Homes Plan are enormous.¹

Inefficient housing has unparalleled health,² productivity,³ and carbon emissions⁴ costs to society, and pervades every community in the UK.⁵ Solving the homes inefficiency crisis across the diversity of the country calls for mission-led, joined-up, community-empowering, modern government policy, bringing shared benefits.⁶

The enormous variability of effectiveness of previous national schemes⁷ (with outcomes varying in quality,⁸ impact,⁹ and 'depth' of retrofit,¹⁰ and market/demand stimulation occurring inconsistently and unevenly)¹¹ has shown that the design of schemes makes a huge difference to their results.

Having surveyed a significant proportion of the data, analysis, and proposals from the government, academics, trade bodies, trade unions, and interested community groups, the TUC has developed specific recommendations for the delivery of Labour's Warm Homes Plan (and related policies) as set out here. We are keen to work constructively with the government on these proposals and policy that emerges in this field, and are happy to offer further thoughts and assistance as required.

Detailed recommendations

Industrial Strategy, Coordination & Stability

To provide the certainty that allows investment into delivery, skills and supply chain, and end the stop-start failures of recent years, DESNZ could

- Recognise and treat the £6.6 billion Warm Homes Plan as an explicit industrial strategy intervention by DESNZ, developed and implemented as part of a broader DESNZ industrial strategy and policy framework for the home energy improvement sector across the UK.
- Empower the Warm Homes Agency to provide a greater level of coordination and a single national purpose *across* the government's delivery of domestic energy efficiency. It should be integrated within a mission-led approach to upgrading UK homes in line with climate targets.
- Task the Warm Homes Agency with standardising the prioritisation methodologies, delivery options, and carbon emission outcomes that government expects local government, retrofit scheme delivery partners, and the private sector to adhere to, ensuring quality of delivery¹²
- Provide long-term stability by establishing the Warm Homes Plan as a core component within an over-arching multi-decade National Retrofit Plan developed by the Warm Homes Agency. This should lay out timelines and schedules to upgrade all UK homes to desired energy efficiency standards, in line with CCC recommendations, with ten year implementation phases to provide stability for investment decisions.
- Task the Warm Homes Agency with developing ten year implementation phases and pipelines, will enable local government, training providers and businesses to invest with more certainty into growing delivery capabilities, addressing workforce skills development, training time lag, the process of in-sourcing, and investments across the retrofit value chain (including into domestic manufacturing of retrofit materials). Ten year implementation phases will also align with the government's plan for a ten-year Infrastructure Strategy overseen by NISTA. Similar to the Infrastructure Strategy, this should give certainty about the project pipeline
- The Warm Homes Plan and the National Retrofit Plan should be developed in close consultation with trade unions, industry, and local authorities.¹³

Local delivery

- To reap maximum impact,¹⁴ the Warm Homes Plan should site *responsibility* for the development of retrofit delivery strategies and priorities in local authorities.¹⁵
- The Warm Homes Plan should focus on tackling the worst homes in every locality (i.e., those most expensive-to-heat, least conducive to health, and with most inefficient heating systems) and on scaling up the sector for future phases of delivery. It should see a rapid pivot of existing local delivery to the neighbourhoods which need it most, alongside the building local, and sustainable workforces nationwide.
- All local authorities should be tasked and funded to produce priority neighbourhood plans within the next year. These place-based route maps should plot the local delivery of the Warm Homes Plan and set out specific plans for delivery of a first phase, modelled on the Priority Neighbourhoods scheme in Leeds¹⁶ and the close accountability of local authority delivery seen at Doncaster¹⁷ and proposed by York.¹⁸
 - These plans should be obliged to take account of principal local buildings archetypes,¹⁹ the maturity of the retrofit sector locally,²⁰ the neighbourhood level relationship between housing and deprivation,²¹ Local Area Energy Plans, ongoing local projects, and the provisions of the Local (Development) Plan to propose the most efficient and greatest impact delivery methodology for the locality
 - Wales, Scotland, and Northern Ireland should have the option to tailor the missions of the Warm Homes Plan within their boundaries
- All local authorities should also be tasked and funded to produce local area energy plans (place-based energy infrastructure development plans with clear route maps to achieving 2030, 2035, and 2050 emission targets)²² which complement and support their priority neighbourhood plans
- The priority neighbourhood plans and local area energy plans should be developed in close consultation with local residents, potential delivery partners, the trade unions recognised by the local authority, and local educational institutions

Direct delivery

In-house delivery can bring a range of benefits to local communities, the local authority, and to delivery of climate action. These include longer-term skills planning, improved coordination, decent work for public sector workers, flexibility for authorities to allocate resources where they are needed in a timely manner, improved democracy and accountability, service quality improvements, and greater efficiencies which help deliver value for public money.²³

- In-house delivery should be the default setting for retrofit delivery coordinated by local authorities, supported by a robust system of forward planning and comprehensive plans to avoid local authorities being forced to outsource due to short-term pressures.²⁴ Existing outsourced retrofit programmes should be insourced when contracts expire or where it can be demonstrated that it would be in the public interest and offer value for money to terminate a contract and bring the service in house.
- When outsourcing is considered, public bodies should be required to carry out a comprehensive public interest test first to demonstrate that an in-house solution is not possible and demonstrate a clear public benefit for outsourcing. This reflects the commitments the government has made in its plan to Make Work Pay. If outsourcing of public services is deemed to be in the public interest, robust legal and regulatory measures should be in place to ensure

decent work, transparency and accountability are at the heart of all public contracts. These should include comprehensive two-tier workforce regulations, and a statutory procurement framework which enables decent work and full transparency.

- The Warm Homes Agency should have an active role in supporting the insourcing of retrofit and other local authority workers²⁵ through a range of levers, including:
 - the creation of grants for workforce skills development
 - making insourcing loans (repayable over time from procurement savings) available to local authorities that choose to deliver retrofit works in-house²⁶
 - the creation of a Retrofit Direct Delivery Accelerator and Hub, hosted by DESNZ or DHCLG, to support local authorities with insourcing knowledge, skills development, standard contracts, standardised and affordable training programmes for directly employed workers, supply chain mappings, and collective tenders²⁷

Public funding consolidation and rationalisation

- The majority of the £6.6bn committed new funding should be dedicated to the delivery of the Warm Homes Plan, including dedicated funding for local authorities to develop priority neighbourhood plans.
- Funding for Warm Homes Plan deliverables (covering retrofit works, local engagement,²⁸ sectoral development, worker education, and associated costs)²⁹ should be made available directly to local authorities, and apportioned across local authorities according to an assessment of the relative fuel poverty of their populations.³⁰ Funding tranches during the first ten years should be made available at intervals chosen by each local authority according to their assessment of their potential in their priority neighbourhood plans³¹
- Existing schemes should be consolidated over time, to provide a simpler set of routes to delivery, but allowing delivery partners time to adjust. Funding for SHDF3 could be redirected to the Warm Homes Plan.^a Funds currently sited within BUS2, ECO4, and GBI could be consolidated into a Household Grant scheme to which owner-occupiers and landlords can apply directly for specific properties and to which occupiers can be referred by their local authority or NHS Trust.³² This would continue to collect funds from energy companies via an updated and ongoing Home Heating Cost Reduction Obligation, but administration should be run from within national government with work assigned to relevant local authority teams.
- Household Grant referrals should work in a similar way as they have under ECO Flex, except that only deep rather than piecemeal retrofit work should be conducted, local targets should be set for the number of allocations, and work should be conducted by local authorities cognisant of the programme of works within their Priority Neighbourhood Plan

Leveraging private funds

- A fair funding mechanism will be needed, whereby public funds cover upgrades that homeowners cannot afford, and part- or match-fund upgrades that landlords and homeowners cannot afford alone, while wealthy households are asked to pay their way. In the early phases of delivery (when wholly unsustainable homes containing low-income households are being treated), the majority of works should be provided for free (via neighbourhood schemes or

^a This is not designed to limit overall funding for social housing; since social homes generally cluster in more deprived areas, Priority Neighbourhood Plans will likely still prioritise social housing retrofit, but this will be done more equitably and accountably according to the local authority plans than under the tenure-specific and competitively awarded SHDFs

targeted grants) or at low cost via loans.³³ Over time (as less inefficient homes and more affluent households are included), more will need to be asked of landlords and homeowners

- Collection of rechargeable costs should always be made as easy and fair as possible, with long-term government-backed loans (associated with properties not households), options of deferment and payment holidays made available, and partial works done by households themselves rewarded.³⁴ A principle should be established that retrofit always pays; repayments should never exceed the real value of the savings to energy bills achieved by retrofit³⁵
- The government should ambitiously explore new funding streams to help with costs, including incentives for homeowners to commission retrofit works ahead of the public roll-out (government-backed savings schemes, awards from the Household Grant scheme), cost-easing measures (long-duration home improvement repayment plans),³⁶ and reallocation of funding to retrofit projects from projects which would benefit from their completion³⁷

Local and democratic accountability

- Consensus and buy-in must be ambitiously pursued. Priority Neighbourhood Plans should be encouraged to be flexible in how they propose the delivery of the projects and works they recommend.³⁸ Local authorities should be encouraged to innovatively address the maturity of relevant supply chains and providers in the locality, the additional local funds available or raisable,³⁹ the special timeframes needed for delivery in different neighbourhoods, and local appetite for works⁴⁰
- All local authorities should be obliged to recruit and maintain sufficient PAS2035 accredited retrofit coordinators on their own staff lists to help to devise their Priority Neighbourhood Plan and coordinate the works in the public interest.⁴¹ All works undertaken using public money should be managed by directly accountable local authority retrofit coordinators⁴²

Job quality, workforce development, and transition support

- Recognising that the retrofit sector is not large enough,⁴³ not growing sufficiently quickly,⁴⁴ is still characterised by precarity and poor terms,⁴⁵ and that government market incentives have not made the difference needed in the past,⁴⁶ the Warm Homes Agency should promote significant workforce development policies⁴⁷, including conditions attached to the Warm Homes Plan.
- The Warm Homes Agency should have an express goal to ensure that retrofit jobs—regardless of the skills level required for the individual job—are quality jobs, with good terms and conditions, secure contracts, and good pay, transforming the sector away from precarity and poor terms. This is a minimum expectation for a sector that is so dependent on public funding.
- The Warm Homes Plan should require:
 - direct public employment by the local authorities coordinating the work (unless the public interest can be satisfied, as stipulated above)
 - that all workers employed to deliver retrofit programmes supported by public funding are on nationally negotiated terms and conditions (such as existing union-industry frameworks like NAECI,⁴⁸ or new parallel agreements)
 - that all bodies delivering public works recognise and work with the trade unions of their employees, and work closely with trade union health and safety reps to ensure high standards of health and safety for their workforce

- The Warm Homes Agency should commission the creation a new standardised suite of vocational courses on all aspects of retrofit delivery⁴⁹, encourage local authorities to create thousands of retrofit apprenticeships, and support colleges⁵⁰ to include retrofit courses in their offers by making development funding and tutor pay uplifts available⁵¹
- There should be a national retraining programme for unemployed individuals, workers looking for a new career, and workers in jobs that face particularly significant decarbonisation challenges. This would need to be delivered in partnership with Skills England, as home upgrades are only one potential destination sector where such a scheme is likely needed. Learning from the Skills Bootcamps,⁵² this programme should make courses available for free to unemployed people,⁵³ and, learning from the German *Transformationskurzarbeitergeld* programme, it should support at-risk fossil fuel workers to retrain while maintaining their current employment without significant loss of pay⁵⁴
- The priority neighbourhood plans should look to partner local authorities with and grow the retrofit offers and recruitment of local colleges to support local efforts⁵⁵

Homeowner information

- The government should adjust the SAP/HEM so that scores/EPCs more accurately reflect the efficiency of partially renovated/mixed-build and atypical homes, significantly improving our understanding of the challenge and resolution options⁵⁶
- The government should also expand EPCs with new home efficiency logbooks on which energy efficiency measures and new PAS2035 'medium-term improvement plans' are recorded⁵⁷

Deep retrofits

- All publicly funded works must follow a dual 'worst first' approach, with the least efficient individual homes and most deprived neighbourhoods being prioritised for retrofit work. National goals should establish date targets by which there should be no homes with an EPC of G, F, E, D, and, eventually, C⁵⁸
- All publicly funded works should aim to upgrade homes to EPC B or better (while pragmatically recognising archetypal constraints) in a single programme of work⁵⁹

¹ Paul Testa, 'Why do we still not have a national retrofit strategy?' Homebuilding & Renovating (2021),

www.homebuilding.co.uk/features/why-do-we-still-not-have-a-national-retrofit-strategy; 'The great retrofit: what are the current challenges and what do we need to consider?', BCIS (2023), bcis.co.uk/insight/the-great-retrofit-what-are-the-current-challenges; 'National Climate Change and Biodiversity Service: A PCS workers' plan for an alternative civil service', PCS (2023), www.cacctu.org.uk/sites/data/files/sites/data/files/Docs/external-national-climate-change-and-biodiversity-service.pdf; 'Domestic retrofit', UKGBC, ukgbc.org/policy-advocacy/domestic-retrofit

² See, for example, Katie Bates, Laura Lane, and Anne Power, 'High rise hope: The social implications of energy efficiency retrofit in large multi-story tower blocks', LSE Housing and Communities (2012), sticerd.lse.ac.uk/dps/case/cr/casereport75.pdf; and Becci Taylor, 'How retrofitting homes can also tackle health issues and inequality', ARUP (2023), www.arup.com/perspectives/beyond-carbon-how-retrofitting-homes-can-tackle-wider-social-priorities-of-health-and-inequality

³ 'The housing stock of the United Kingdom', BRE Trust (2020), files.bregroup.com/bretrust/The-Housing-Stock-of-the-United-Kingdom-Report-BRE-Trust.pdf

⁴ '2022 UK greenhouse gas emissions, provisional figures', DESNZ (2023), assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147372/2022_Provisional_emissions_statistics_report.pdf

⁵ 'The sixth carbon budget: The UK's path to net zero', Committee on Climate Change (2020), www.theccc.org.uk/wp-content/uploads/2020/12/The-Sixth-Carbon-Budget-The-UKs-path-to-Net-Zero.pdf

⁶ Anna Stansbury, Dan Turner, and Ed Balls, 'Tackling the UK's regional economic inequality: Binding constraints and avenues for policy intervention', M-RCBG Associate Working Paper Series, no. 198 (2023), www.hks.harvard.edu/sites/default/files/centers/mrcbg/files/198_AWP_final.pdf

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- ⁷ 'Government has 'persistently failed to learn lessons' from 'failed' green homes schemes, say MPs', *Inside Housing* (2021), www.insidehousing.co.uk/news/news/government-has-persistently-failed-to-learn-lessons-from-failed-green-homes-schemes-say-mps
- ⁸ Peter Rickerby, 'Bad retrofit is worse than no retrofit', *Passive House Plus* (2023), passivehouseplus.co.uk/blogs/bad-retrofit-is-worse-than-no-retrofit
- ⁹ On the concern that past retrofit work has not cut bills for tenants, see 'LGA building housing retrofit skills leadership and learning programme, March 2022', Local Government Association (2022), <https://www.local.gov.uk/lga-building-housing-retrofit-skills-leadership-and-learning-programme-march-2022>
- ¹⁰ While many energy efficiency measures have been installed across the UK by government schemes, instances of multiple measures being installed in the same home (i.e., cavity wall insulation *and* a heat pump, or loft insulation *and* draft proofing) are shockingly rare, contributing to the overall lack of significant change experienced by occupants. See, for example, 'Household energy efficiency statistics', DESNZ (October 2023), T3.1, www.gov.uk/government/statistics/household-energy-efficiency-statistics-headline-release-october-2023; and 'Social Housing Decarbonisation Fund statistics: October 2023', DESNZ (2023), www.gov.uk/government/statistics/social-housing-decarbonisation-fund-statistics-october-2023, T1 and T2)
- ¹¹ House of Commons Committee of Public Accounts, 'Green Homes Grant voucher scheme', 27th report of session 2021–22 (2021), committees.parliament.uk/publications/8007/documents/82623/default
- ¹² All 21 national retrofit schemes introduced or pledged under the Conservatives had divergent aims and criteria, with each scheme apparently not learning from its predecessors. See especially the discussion at 'Government has 'persistently failed to learn lessons'', *Inside Housing* (2021)
- ¹³ Lem Bingley, 'Building consensus', *Property Week* (2023), www.propertyweek.com/insight/building-consensus-big-interview-with-new-ukgbc-chief-exec-smith-mordak/5127614.article
- ¹⁴ See 'Accelerating net zero delivery: Unlocking the benefits of climate action in UK city-regions', UKRI (2022), uk.ktn-uk.org/perspectives/accelerating-net-zero-delivery-unlocking-the-benefits-of-climate-action-in-uk-city-regions; and 'Community wealth building through anchor institutions', Centre for Local Economic Strategies (2017), cles.org.uk/wp-content/uploads/2017/02/Community-Wealth-Building-through-Anchor-Institutions_01_02_17.pdf
- ¹⁵ James Dyson, 'Enabling locally led retrofit: Reforms to scale up effective delivery', E3G (2023), www.e3g.org/wp-content/uploads/2023_07-locally-led-retrofit-report.pdf; and Charlotte Ravenscroft, 'Ready for retrofit? An analysis of Local Skills Improvement Plans in England', The Gatsby Charitable Foundation (2024), <https://www.gatsby.org.uk/uploads/education/2024-06-26-retrofit-report-finalpdf.pdf>. It is possible that the government may wish to look to the local policy innovation partnerships (see <https://www.ukri.org/news/ukri-invests-in-policy-innovation-partnerships-for-local-growth>), which operate at regional levels, to support local delivery and planning, but, as LAD2 showed very clearly, region level retrofit delivery is not as effective, impactful, or economy stimulating as more local delivery. On this, see especially 'Learning lessons from the Green Homes Grant', Energy Efficiency Infrastructure Group (2021), www.theeig.co.uk/media/1107/eeig_learning_lessons_green_homes_grant.pdf
- ¹⁶ The Leeds model proposes using council resources overwhelmingly on the most deprived neighbourhoods (according to the Index of Multiple Deprivation, see <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>), moving sequentially from the worst to the better, and deploying domestic retrofit as the central pillar of neighbourhood upgrades. See: 'Best council plan 2020-25', Leeds City Council (2020), webmicrosites.hays.co.uk/documents/5175051/5172753/Best+Council+Plan+Aug+2020+v2.pdf; 'Real change in neighbourhoods that need it most', Northern Housing Consortium (2023), www.northern-consortium.org.uk/real-homes-real-change/leeds-city-council; 'Retrofit project in low socio-economic status areas, Leeds City Council', LGA (2022), www.local.gov.uk/case-studies/retrofit-project-low-socio-economic-status-areas-leeds-city-council
- ¹⁷ The City of Doncaster Council has trained up internal staff as retrofit coordinators for all their public projects, with significant positive efficiency, quality, and accountability outcomes (private correspondence with Bev Rosso, Sustainability Manager in Built Environment, City of Doncaster Council)
- ¹⁸ Proposals for the City of York Council's Retrofit One Stop Shop York (ROSSY) service require that all retrofit works facilitated through its platform will be managed by public sector retrofit coordinators to ensure a consistent standard, fair allocation of work, and public confidence (proposals set out in York Retrofit Network event 5 June 2024)
- ¹⁹ Work like that commissioned by Cambridge City Council is exemplary: 'Retrofitting your home', Cambridge City Council (2022), www.cambridge.gov.uk/media/11677/retrofitting-your-home-report-non-accessible-version.pdf
- ²⁰ Supply chain and sectoral capacity assessments (for example, see 'Understanding skills demand within domestic energy', North East Energy Hub (2021), <https://evidencehub.northeast-ca.gov.uk/spotlight-analysis/domestic-retrofit-skills-needs-assessment>) have been unprofitably conducted at varying scales and inconsistent depths of analysis. A single approach which ensures development strategies for every locality will go a long way to finding workable and non-overlapping solutions
- ²¹ See Mike Childs, 'Why the energy crisis demands street-by-street energy saving measures', Friends of the Earth (2022), <https://policy.friendsoftheearth.uk/print/pdf/node/279>; and Angela Donkin and Michael Marmot, 'Left out in the cold: The hidden health costs of cold homes', Institute of Health Inequality (2024), https://cdn.friendsoftheearth.uk/sites/default/files/downloads/Left_out_in_the_cold_full_report_v3.pdf
- ²² Dyson, 'Enabling locally led retrofit' (2023). See <https://es.catapult.org.uk/tools-and-labs/local-area-energy-plans>
- ²³ Linda Clarke, 'Municipal Socialism: Its distinct development through building production in Britain', *forthcoming* (2024); L Clarke and M Sahin-Dikmen, 'Unions and the green transition in construction in Europe: contrasting visions', *European Journal of Industrial Relations* 26 (4) (2020), pp. 401-418; 'Domestic retrofit handbook – supporting information' ('Procurement paper'), Local Partnerships (2023), localpartnerships.gov.uk/resources/domestic-retrofit-handbook
- ²⁴ 'Rebuilding capacity: The case for insourcing public contracts', APSE (2019), [https://www.apse.org.uk/sites/apse/assets/File/Insourcing%20\(web\).pdf](https://www.apse.org.uk/sites/apse/assets/File/Insourcing%20(web).pdf)
- ²⁵ Dyson, 'Enabling locally led retrofit' (2023)

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- ²⁶ The strong trend towards insourcing is summarised nicely in Anna Bawden, 'Why councils are bringing millions of pounds worth of services back in-house', *The Guardian* (2019), www.theguardian.com/society/2019/may/29/bringing-services-back-in-house-is-good-councils
- ²⁷ This could be based on elements of the current RISE (Retrofit Information, Support and Expertise) programme but brought inhouse
- ²⁸ Joshua Emden, 'More than money: Moving towards a relational approach to retrofitting', Institute for Public Policy Research (2023), <https://www.ippr.org/articles/more-than-money>
- ²⁹ With results that included stifling sectoral development and baking-in poor employment practices, the use of government funds was historically limited to direct delivery of retrofit, with marketing, customer journey support, stakeholder engagement, workforce development, etc. explicitly excluded from government backing
- ³⁰ See Jason Torrence, 'Competitive funding pots damage climate change action', *Local Government Chronicle* (2023), www.lgcplus.com/services/environment/jason-torrence-competitive-funding-pots-damage-climate-change-action-18-10-2023. Something closer to the National funding formula for schools and high needs (see Department for Education (2023), www.gov.uk/government/publications/national-funding-formula-for-schools-and-high-needs) could be employed
- ³¹ The inflexibility of funding streams of, especially, the SHDF grants is frequently cited as a significant limiting factor on effective and cost-efficient delivery
- ³² I.e. via the logic of social prescribing. See Cormac Lawler *et al.*, 'Homes and health in the Outer Hebrides: A social prescribing framework for addressing fuel poverty and the social determinants of health', *Health and Place* 79 (2023), https://pure.hud.ac.uk/ws/portalfiles/portal/54035494/Moving_Together_paper_final_accepted.pdf
- ³³ As per the Leeds Priority Neighbourhoods model. See note 15
- ³⁴ We recommend a mechanism similar to the student loan repayment model. Individual social housing providers collect recharge debts in a variety of instructive ways, which use flexibility and affordability assessments alongside arrangements such as the Breathing Space initiative, and we'd recommend a collection regime inspired by best practice. See also the fixed interest retrofit loans introduced by West Yorkshire Combined Authority in 2024: <https://www.westyorks-ca.gov.uk/all-news-and-blogs/west-yorkshire-mayor-launches-new-loans-to-help-homeowners-slash-bills>
- ³⁵ We're here advocating for a goal achieved through price caps or long repayment term lengths. The 'warm rents' approach (whereby energy costs are included in rents and these total 'warm' rents are not decreased after energy efficiency measures are installed, allowing the saving on the energy bill portion to the landlord to offset the cost of the works) (see Lisa Sieger, 'Investigating inefficiencies in the German rental housing market: The impact of disclosing total costs on energy efficiency appreciation', HEMF Working Paper 05/2023 (2023), dx.doi.org/10.2139/ssrn.4605912) and the similar approach of *Energiesprong* (see 'How does Energiesprong work?' Energiesprong, www.energiesprong.uk/how-does-it-work) should not be considered since they do nothing to realise the cobenefits in terms of cost of living improvements to occupiers and strongly disincentivise work except where very large landlords are commissioning it
- ³⁶ The market on its own, despite a relatively large range of products in this area (see <https://www.greenfinanceinstitute.com/programmes/ceeb/green-mortgages>), is not providing sufficiently to meaningfully stimulate uptake
- ³⁷ 'Regulation of private renting: forty-ninth report of session 2021–22', HC 996, House of Commons Committee of Public Accounts, House of Commons (2022), committees.parliament.uk/publications/9608/documents/163793/default
- ³⁸ 'Delivering and funding housing retrofit: a review of community models', ARUP (2013), www.arup.com/perspectives/publications/research/section/delivering-and-funding-housing-retrofit
- ³⁹ Various local authorities the authors are aware of are considering requesting social contract contributions from anchor institutions (or similar) to co-fund neighbourhood regeneration retrofit projects
- ⁴⁰ On the efficacy of place-based retrofit delivery, see especially, 'Accelerating net zero delivery: Unlocking the benefits of climate action in UK city-regions', UKRI (2022), uk.ktn-uk.org/perspectives/accelerating-net-zero-delivery-unlocking-the-benefits-of-climate-action-in-uk-city-regions; and Pooja Agrawal and Ben Hockman, 'Local authorities should lead on the energy retrofit of social housing', *The Developer* (2022), thedeveloperlive.co.uk/opinion/opinion/local-authorities-should-lead-on-the-energy-retrofit-of-social-housing; on the strong appetite for local authorities to take on these responsibilities, see 'Domestic retrofit survey of local authorities', Local Partnerships (2021), localpartnerships.gov.uk/resources/domestic-retrofit-handbook
- ⁴¹ On the unaccountability of private sector coordinators, see Fiona Fylan, 'Barriers to domestic retrofit quality: Are failures in retrofit standards a failure of retrofit standards?' *Indoor and Built Environment* 31:3 (2021), journals.sagepub.com/doi/10.1177/1420326X2111027197; and 'PAS 2035: Flawed and bypassed', Value Optimised Retrofit, www.vorgroup.co.uk/pas2035-flawed-and-bypassed
- ⁴² On the effectiveness of public sector retrofit coordinators, see notes 16 and 17 above
- ⁴³ 'The sixth carbon budget' (2020); and 'A net zero workforce', Committee on Climate Change (2023), www.theccc.org.uk/publication/a-net-zero-workforce
- ⁴⁴ 'The skills construction needs', CITB (2023), www.citb.co.uk/media/acbnbn5t/csn-national-report-final-report.pdf
- ⁴⁵ Joe Richardson, 'Precarious pay and uncertain hours: Insecure work in the UK Labour Market', Living Wage Foundation (2023), www.livingwage.org.uk/sites/default/files/2023-08/Precarious%20pay%20and%20uncertain%20hours%20-%202023%20%281%29.pdf; Krisztián Pósch, Sam Scott, Ella Cockbain, and Ben Bradford, 'Scale and nature of precarious work in the UK', LSE, University of Gloucester, UCL (2020), assets.publishing.service.gov.uk/media/61b72ecfd3bf7f055fce74b4/scale-and-nature-of-precarious-work-in-the-UK.pdf
- ⁴⁶ This is generally true, but, to cite only the worst mistake, the Green Homes Grant likely resulted in a net loss of jobs in the sector. See House of Commons Committee of Public Accounts, 'Green Homes Grant voucher scheme', 27th report of session 2021–22 (2021), committees.parliament.uk/publications/8007/documents/82623/default

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- ⁴⁷ The approach taken in the ROI is instructive here. See 'National Retrofit Plan', Department of the Environment, Climate and Communications (2022), www.gov.ie/en/publication/5052a-national-retrofit-plan; and 'Climate Action Plan 2021', Department of the Environment, Climate and Communications (2021), www.gov.ie/en/publication/6223e-climate-action-plan-2021
- ⁴⁸ See 'National agreement', NJCECI, <https://www.njceci.org.uk/national-agreement>
- ⁴⁹ 'Building skills for net zero', CITB (2021), www.citb.co.uk/media/kkpkwc42/building_skills_net_zero_full_report.pdf; 'Retrofit skills shortage undermines plan to upgrade 19m homes', PBC Today (2023), www.pbctoday.co.uk/news/hr-skills-news/retrofit-skills-shortage-undermines-plan-to-upgrade-19m-homes/124849; Herpreet Kaur Grewal, 'Lack of skills 'is scuppering UK's retrofit goals'', *Facilitate* (2023), www.facilitatemagazine.com/content/news/2023/07/31/lack-skills-scuppering-uks-retrofit-goals. Working group 3 of the National Retrofit Hub (nationalretrofit.org.uk/working-groups) is already working on this and should be supported
- ⁵⁰ See 'Retrofit: Solving the skills crisis', Ashden (2022), ashden.org/sustainable-towns-cities/retrofit-solving-the-skills-crisis
- ⁵¹ Colleges frequently cite a recruitment block caused by that teaching retrofit skills is recompensed worse than using those skills as a tradesperson
- ⁵² See, for example, Skills Academy, <https://skillsacademies.com/courses/skills-bootcamps-in-construction-trades>
- ⁵³ As shown by the evidence of what is preventing workers moving into the green economy. See Vera Trappmann *et al.*, 'Climate change, green economy, and work: The perceptions of workers in Germany and the UK', CERIC and University of Leeds (2023), <https://business.leeds.ac.uk/downloads/download/324/climate-change-green-economy-and-work-the-perception-of-workers-in-germany-and-the-uk-november-2023>
- ⁵⁴ *Kurzarbeit* is a current German social insurance programme in which the government provides a replacement income (usually 60% or more of workers' normal wage) for workers whose employer is forced by economic circumstances to reduce workers' hours. *Transformationskurzarbeitergeld* is a policy proposed by IG Metall union which uses the logic of the *Kurzarbeit* programme to stretch out the duration of a fossil fuel employer's winding up period, allowing some production to continue while the workplace transitions to a more sustainable model and while workers retrain (for the new roles in that firm or for alternative employment). See Jo Cutter, Vera Trappmann, and Dunja Krause, 'Just transition: the tension between work, employment and climate change', in Sally Russell and Rory Padfield (eds.), *A research agenda for sustainability and business*, Edward Elgar Publishing: Cheltenham (2023), <https://doi.org/10.4337/9781839107719.00012>; 'Kurzarbeit: Germany's short-term work benefit', IMF News (2020), <https://www.imf.org/en/News/Articles/2020/06/11/na061120-kurzarbeit-germanys-short-time-work-benefit>; and 'Darum brauchen wir das Transformations-Kurzarbeitergeld', IG Metall (2019), <https://www.igmetall.de/politik-und-gesellschaft/wirtschaftspolitik/arbeitsmarkt/darum-brauchen-wir-das-transformations-kurzarbeitergeld>
- ⁵⁵ Key lessons can be learnt from the West Yorkshire Consortium of Colleges. See 'The green skills service', WYCC, www.westyorkshirecolleges.co.uk/green-skills-landing/green-skills-service
- ⁵⁶ Stronger rules will also resolve issues around EPCs being generated not to accurately reflect actual efficiency but to suit contractors' thresholds for funding. See also 'Annex: Reform of domestic EPC rating metrics to support delivery of net zero', Committee on Climate Change (2023), www.theccc.org.uk/wp-content/uploads/2023/02/Annex-Reform-of-domestic-EPC-rating-metrics-to-support-delivery-of-Net-Zero.pdf; and 'EPC reform', National Retrofit Hub (2023), <https://nationalretrofit.org.uk/knowledge-hub/epc-reform>
- ⁵⁷ Building on PAS2035:2023, *Retrofitting dwellings for improved energy efficiency – Specification and guidance*, 5.3 and 8.1.6. See also 'Digital building logbooks explainer and data matrix', National Retrofit Hub (2023), <https://nationalretrofit.org.uk/knowledge-hub/logbook-explainer-data-matrix>
- ⁵⁸ Cf. target dates to reach EPC C and EPC B in Scotland. See 'Tackling fuel poverty in Scotland: A strategic approach', Energy and Climate Change Directorate and Social Security Directorate (2021), <https://www.gov.scot/publications/tackling-fuel-poverty-scotland-strategic-approach>
- ⁵⁹ The National Retrofit Plan for Ireland aims for upgrades to be completed at the equivalent of a high B. See 'National Retrofit Plan', Department of the Environment, Climate and Communications (2022), www.gov.ie/en/publication/5052a-national-retrofit-plan; 'Climate Action Plan 2021', Department of the Environment, Climate and Communications (2021), www.gov.ie/en/publication/6223e-climate-action-plan-2021. The CCC has made clear that 'To reach Net Zero [...] all the UK's existing homes must be zero-carbon, with a good level of energy efficiency and low-carbon heating' and 'a significant proportion of homes will also need [...] on-site generation [of heat and/or energy and] demand flexibility' (i.e. battery storage capacity), which requirements are very unlikely to be met by a home with an EPC at grade C. See 'Annex: Reform of domestic EPC rating metrics to support delivery of Net Zero' (2023)