



MEASURING OUTCOMES & IMPACT EVALUATION:



MEASURING FOR SUCCESS?
WHAT'S CURRENTLY BEING MEASURED,
AND WHAT'S NOT



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Across the UK, retrofit activity is increasing but our ability to understand and measure its real impact remains limited. Most programmes collect basic delivery data, such as the number of measures installed or improvements in EPC ratings. Far fewer consistently capture what really matters: how retrofit is performing in use, and the difference it makes for people, places and policy goals.

This work builds on the National Retrofit Hub's 2024 report, [Retrofit Delivery: State of the Nation Review](#). That analysis identified several system-wide challenges, including the need for stronger jobs and skills pipelines, EPC reform, and clearer public messaging, alongside a clear gap in how retrofit outcomes are identified and measured. This gap forms the basis of the current project.

The central question guiding this work is:

"How can broader outcome measurement accelerate retrofit delivery and be designed to drive better policy, funding and delivery decisions, particularly to maximise co-benefits such as health and equity in a fiscally constrained environment?"

Without credible and consistent outcome measurement, it's difficult to shape effective policy, design funding programmes, or target delivery where it is most needed. Better data is essential to ensure retrofit delivers on its promises of reducing carbon emissions, improving comfort and health, tackling fuel poverty, and supporting local economies.

This paper sets out a baseline of what is currently being measured (and what is not) across major retrofit schemes in England, Scotland and Wales. The analysis draws mainly on policy and programme documentation, recognising that delivery in practice may differ from what is set out on paper. Alongside this, we are engaging with those designing, delivering and receiving retrofit programmes to understand how measurement plays out on the ground.

The next phase of this work will look ahead, asking:

"What cultural, technical and policy conditions are needed to enable outcome-driven retrofit at scale and what actions can be taken now to move towards that vision?"

The findings provide a clear starting point for a wider conversation about how the UK can build a more robust and consistent approach to outcomes and impact evaluation.

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KEY TAKEAWAYS FROM COMPARISON:

Most schemes report energy/bill/carbon savings through modelling based on EPC/SAP/Rd-SAP, not in-use performance.

This presents an opportunity to develop this work to showcase some best practice examples that demonstrate real-world, in-use performance outcomes.

Non-energy outcomes (health, comfort, jobs, supply chain) are often aspirational targets but rarely systematically measured.

With growing policy and funding interest in the health benefits of retrofit, many local authorities are keen to explore this area, creating space to expand evidence and surface innovation.

Optimised Retrofit Programme stands out for using detailed sensor-based monitoring, offering robust post-installation data.

This presents an opportunity for further learning and knowledge sharing across the sector.

Over-reliance on EPC modelling risks masking performance gaps and misrepresenting actual impacts.

Current calls for EPC reform are particularly timely, aligning with broader policy goals to work towards ensuring more accurate and accountable performance measurement.

DEFINITIONS

Targets: the goals and performance outcomes that funded projects must achieve to improve the energy efficiency of homes. These targets can range across programmes, often tied to both environmental and social objectives, including reducing carbon emissions, tackling fuel poverty, and improving living conditions.

Measured: directly recorded during project delivery as they form the basis for grant claims and performance monitoring.

Reported (not directly measured): impacts that are estimated or modelled using tools or statistical analysis.

Data Gaps & Assumptions: The underlying data limitations, informing in part the NRH development of policy recommendations for more robust outcomes identification and measurement.

DELIVERY PROGRAMME:

ENERGY COMPANY OBLIGATION 4 (ECO4)

A UK-wide scheme placing obligations on major energy companies to deliver energy savings via a credit system. These are passed on to contractors who must deliver these savings through retrofit measures to low-income owner occupier or privately renting households. ECO4 will finish in March 2026.



TARGETED:

- Fuel poverty reduction
- Carbon reduction
- Support for vulnerable customers
- Market stimulation

MEASURED:

- Measures installed (number & type)
- Homes upgraded (incl. tenure)
- EPC improvement (SAP/RdSAP), Floor area
- Perceived bill savings (survey)

REPORTED:

NOT DIRECTLY MEASURED

- Energy, bill, and carbon savings (from Ofgem scores)
- Surveys & anecdotal sources: private investment stimulation, comfort/wellbeing, behaviour change, supply chain, job creation

DATA GAPS & ASSUMPTIONS:

- Heavy reliance on SAP/RdSAP
- Many non-energy impacts are anecdotal

REFERENCES

- [Ofgem About ECO](#)
- [Ofgem ECO4 Delivery Guidance](#)

DELIVERY PROGRAMME:

HOME ENERGY UPGRADE GRANT (HUG) & LOCAL AUTHORITY DELIVERY (LAD)

LAD and HUG devolve funding for retrofit to local authorities in England, who then target low-income owner occupier or privately renting households in their area. While LAD targets EPC ratings of E, F or G, HUG targets off the gas grid homes between D and G. Schemes now closed and superseded by WH:LG.



TARGETED:

- Reduced bills
- Carbon reduction
- Energy efficiency

MEASURED:

- Measures installed (number & type)
- Homes upgraded (including tenure & region)
- Pre/post EPC scores

REPORTED:

NOT DIRECTLY MEASURED

Energy, bill, and carbon savings (modelled via data collected on measures installed and National Housing Model)

DATA GAPS & ASSUMPTIONS:

- No real-time or performance data
- Model-based outcomes

REFERENCES

[LAD and HUG Official Statistics Jun 2025](#)
[HUG Phase 1 Evaluation Report](#)
[LAD and HUG Summary of Statistics Feb 2025](#)

DELIVERY PROGRAMME:

WARM HOMES: LOCAL GRANT (WH:LG)

Like LAD and HUG, WH:LG devolves funding to Local Authorities in England, who then target low-income owner occupier or privately renting households in their area.



TARGETED:

- Fuel poverty
- Reduced bills
- Carbon reduction

MEASURED:

- Measures installed (number & type)
- Homes upgraded
- Pre/post EPC
- Trustmark lodgment

REPORTED:

NOT DIRECTLY MEASURED

Assume modelled energy, bill, and carbon savings

DATA GAPS & ASSUMPTIONS:

Similar to HUG/LAD – EPC-driven modelling only

REFERENCES

[WH:LG Policy Guidance](#)
[WH:LG MoU](#)

DELIVERY PROGRAMME:

SDHF WAVE 2.1 & 2.2

A competition-based scheme, where social housing landlords in England apply for funding to improve the energy and carbon performance of social housing. The primary focus of the scheme is to raise the EPC EER rating of homes to band C. Successful projects were announced in February 2024, and these projects are currently being delivered.



TARGETED:

- Fuel poverty
- Carbon savings
- Tenant wellbeing
- Green jobs
- Supply chain growth

MEASURED:

- Measures installed (number & type)
- Homes upgraded
- Partial EPC pre/post
- PAS data
- Additional chosen by grant recipients
- Some independent research commissioned

REPORTED: *NOT DIRECTLY MEASURED*

- Modelled energy, bill, and carbon savings

DATA GAPS & ASSUMPTIONS:

- Lacks uniform measurement of non-energy outcomes (supply chain growth, jobs, wellbeing)

REFERENCES

[SHDF Wave 2.2 Competition Guidance Notes](#)
[SHDF Statistics May 2025](#)

DELIVERY PROGRAMME:

WARM HOMES: SOCIAL HOUSING FUND WAVE 3 (WH:SHF)

The next wave of social housing funding, with some updates including the addition of the Challenge Fund approach (all applications that meet the minimum requirements of the scheme awarded funding) and Strategic Partnerships (providing greater autonomy and flexibility for organisations with proven track records). Successful projects were announced in March 2025, and delivery of these projects will run to September 2028.



TARGETED:

Same as Wave 2

MEASURED:

- Measures installed (number & type)
- Homes upgraded
- Pre/post EPC
- Landlord capacity/capability data
- Supply chain growth
- Resident experience
- Additional chosen by grant recipients

REPORTED:

NOT DIRECTLY MEASURED

- Modelled energy use and carbon savings
- Capacity, supply chain, resident experience

DATA GAPS & ASSUMPTIONS:

- Effectiveness of capacity/supply chain measurement to be determined

REFERENCES

[WH:SHF Wave 3 Scheme Guidance](#)

DELIVERY PROGRAMME:

WELSH GOVERNMENT WARM HOMES NEST

A demand-led scheme providing support and improvements to low-income and vulnerable owner occupier or privately renting households in Wales since 2011.



TARGETED:

Fuel poverty
Energy efficiency
Economic development
Climate change
Net Zero

MEASURED:

Measures installed (number & type)
Homes upgraded
Pre/post SAP
Advice/support numbers Eligibility referrals
Household satisfaction
Partnerships/events /training
Campaigns delivered with LAs
Community benefits

REPORTED:

NOT DIRECTLY MEASURED

RdSAP modelled reductions in energy use/
cost

Estimated social benefit from householder
profile & support data

DATA GAPS & ASSUMPTIONS:

Some broader social data collected, but
energy savings still SAP-modelled

REFERENCES

[Nest Annual Report](#)

DELIVERY PROGRAMME:

WELSH OPTIMISED RETROFIT PROGRAMME (ORP)

A scheme funding Registered Social Landlords (RSLs) and local authorities (LAs) to install a variety of home decarbonisation measures in existing social housing stock, and to support the achievement of the WHQS. Phase 3 is currently open to applications and delivering projects.



TARGETED:

- Affordable warmth
- Decarbonisation
- Best delivery path for each home

MEASURED:

- Air tightness
- Skills & supply chain development
- Detailed sensor monitoring pre & post retrofit: primary energy, gas & elec import export, temps, humidity, CO₂
- Sub-metering of systems: heating, hot water, ventilation, PV, battery & EV

REPORTED:

NOT DIRECTLY MEASURED

N/A

DATA GAPS & ASSUMPTIONS:

One of few schemes using actual in-use performance data

REFERENCES

- [ORP Overview](#)
- [ORP Guidance](#)
- [ORP Monitoring Specification](#)

DELIVERY PROGRAMME:

WELSH HOUSING QUALITY STANDARD 2023 (WHQS)

The WHQS sets requirements for social rented homes, including that they are “affordable to heat and have minimal environmental impact.” The Welsh Government then allocates funding to local authorities and housing associations to enable them to meet the standard.



TARGETED:

- Good condition
- Safety
- Affordability
- Minimal environmental impact

MEASURED:

- Pass/fail on standard items
- SAP rating
- Hazard scores
- % stock meeting standard

REPORTED: *NOT DIRECTLY MEASURED*

N/A

DATA GAPS & ASSUMPTIONS:

SAP as main energy/affordability proxy

REFERENCES

[The Welsh Housing Quality Standard 2023
WHQS Overview](#)

DELIVERY PROGRAMME:

WARMER HOMES SCOTLAND

Fuel poverty scheme providing support and improvements to low-income owner occupier or privately renting households in Scotland since 2015.



TARGETED:

- Fuel poverty
- Carbon reduction
- Good value for money
- Improving Scotland's housing stock
- Community benefits

MEASURED:

- Measures installed (number & type)
- Homes upgraded
- Pre/post EPC
- Support provided
- Training/jobs
- Additional funding/loans leveraged
- Household satisfaction

REPORTED:

NOT DIRECTLY MEASURED

- Modelled energy cost /carbon savings

DATA GAPS & ASSUMPTIONS:

- EPC-driven modelling; community benefits not quantified in energy terms

REFERENCES

- [Warmworks Annual Report 2020-21](#)
- [WHS Technical Specification](#)
- [WHS Annual Review 2017-18](#)

DELIVERY PROGRAMME:

SCOTTISH GOVERNMENT'S AREA BASED SCHEMES (ABS)

Launched by the Scottish Government in 2013, ABS devolves funding to local authorities, who deliver with partners and energy companies, targeting high fuel poverty areas and the least energy-efficient properties. The aim is to enable upgrades across tenures, however social housing is not eligible for funding from the scheme – registered providers need to access funding from other sources.



TARGETED:

- Fuel poverty
- Carbon reduction
- Energy efficiency
- Warmth & comfort

MEASURED:

- Measures installed (number & type)
- Councils may measure EPC change, bill savings, indoor temp/humidity

REPORTED: *NOT DIRECTLY MEASURED*

- Varies by LA

DATA GAPS & ASSUMPTIONS:

- Highly variable measurement approach; often minimal beyond EPC

REFERENCES

- [Area Based Schemes Information](#)
- [Area Based Scheme Guidance 2022-23](#)

DELIVERY PROGRAMME:

SCOTTISH SOCIAL HOUSING NET ZERO HEAT FUND (SHNZHF)

Provides capital grant funding to registered social landlords (RSLs) and local authorities to retrofit existing housing stock with zero direct emission heating systems and energy efficiency measures. It supports Scotland's legally binding target of net zero emissions by 2045 and statutory fuel poverty goals.

The fund operates under two themes: Clean Heating Systems (retrofit projects installing zero-emission heating) and Fabric First (energy efficiency-only projects). Funding covers up to 60% of capital costs for heating systems and up to 50% for energy efficiency measures, with grant caps of £5 million per project and £35,000 per property (uplifts available for rural areas). Projects must meet mandatory criteria and be completed within the financial year of award.



TARGETED:

Fuel poverty

Net zero

MEASURED:

Cap ex costs

Measures installed (number & type)

Homes upgraded

Performance data: energy, emissions, heating system efficiency

Tenant outcomes: comfort, affordability, satisfaction

Skills & capacity within supply chain and RSLs

REPORTED:

NOT DIRECTLY MEASURED

Ability to attract investment

Ease of deployment

Scale of decarbonisation

Expertise growth

DATA GAPS & ASSUMPTIONS:

Mix of measured and qualitative criteria

REFERENCES

[Scottish Government. Scottish Social Housing Net Zero Heat Fund](#)

[Scottish Futures Trust. Financing Net Zero Heat in Social Housing](#)

[Scottish Futures Trust. Financing and funding the decarbonisation of Scotland's social housing](#)

[Scottish Government. Social Housing Net Zero Heat Fund: Progress report May 2025](#)

DELIVERY PROGRAMME:

PASSIVHAUS ENERPHIT

A voluntary retrofit standard, representing high levels of verified performance. Compliance can either be demonstrated via the 'component method' or the 'energy demand method'.



TARGETED:

- Carbon reduction
- Comfort, health & wellbeing
- Quality
- Cost reduction

MEASURED:

- Airtightness
- Ventilation flow rates

REPORTED:

NOT DIRECTLY MEASURED

- PHPP Modelled:
- Heating/cooling demand
- Space heating EUI
- Primary Energy
- Renewables generation
- Overheating frequency

DATA GAPS & ASSUMPTIONS:

Combines measured QA with robust modelling

REFERENCES

[PassivHaus benefits](#)
[PassivHaus Retrofit](#)
[PassivHaus Criteria for Buildings](#)