

THE CAVENDISH DECLARATION

Measured Performance in UK Energy Efficiency Policy

This declaration follows a roundtable of senior leaders and practitioners from the social housing sector, convened to consider the role of measured building energy performance in retrofit and energy efficiency policy. It is issued jointly, in the collective voice of all signatories.

Background

- **The UK is investing at scale in home energy performance.** The Warm Homes Plan, the Social Housing Fund (SHF), Minimum Energy Efficiency Standards (MEES), Future Homes Standard and low-carbon heating incentives all depend on knowing whether homes perform as intended.
- **Today, that knowledge does not exist at scale.** EPCs and the SAP model that underpins them, were designed to give a normalised rating, not to measure real energy performance. They assume the space heating demand of the home based on a survey rather than measuring the actual space heating demand using sensors and AI. They have nonetheless become the default basis for decisions covering billions of pounds of investment in millions of homes. The forthcoming Home Energy Model (HEM) will not close this gap either, as it is still based on assumptions of space heating demand.
- **Digital metering technology has now closed that gap.** SMETERs (Smart Meter Enabled Thermal Efficiency Ratings) can measure a home's real Heat Transfer Coefficient (HTC) and thus its space heating demand — how much energy it loses, in occupied conditions, in real weather. Independent studies have demonstrated that SMETERs can be accurate and as part of the Warm Homes Plan, government has committed, by the end of 2026, to create an officially recognised list of approved SMETERs, with defined accuracy levels as well as an assurance scheme to support their wide scale use.

Our Concern

- **Retrofit and new-build policy is currently run on assumption, not evidence.** In a study of nearly new-build homes, measured space heating demand was on average 250% higher than the EPC predicted — for a gas-heated home, an extra £400 per year in heating costs.
- **This is not a small, isolated gap.** Portfolio-level measurement across real social housing stock found that 87% of properties diverged from their EPC in one direction or the other: 33% were underperforming and wrongly assumed safe to defer; 53% were outperforming, meaning retrofit spend directed by EPC alone fails to ensure that spending is directed on the homes that need it most.
- **Some of that divergence carries real risk.** 20% of properties failed the SHF 90 kWh/m² performance threshold in practice, with no EPC flag showing it. 17% had conditions likely to cause damp and mould after retrofit — identified only through measurement, and only after the point where measurement could have prevented it.
- **No one — resident, landlord, contractor or government — can currently be sure that a retrofit has delivered what it was funded to deliver.** As a result, capital gets misdirected, risk goes undetected, and in some cases retrofit makes homes worse rather than better impacting the internal environment and in turn compliance.
- **Chasing EPC C drives poor decisions** – the drive to achieve EPC C, without the support of real performance measurement, drives perverse decisions. Rather than a needs based retrofit policy, ensuring all homes are both cost effective to heat and healthy to live in, the focus is on SAP points and paper compliance. Whilst this is an issue today, it becomes significantly more challenging as we move to rolling out heat pumps.

Low temperature systems are much more sensitive to the actual space heating demand and so EPCs need to be able to give guidance based on reality and not guesswork.

What Has Changed

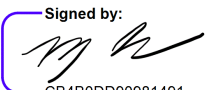
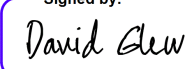
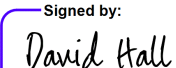
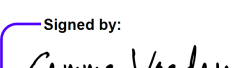
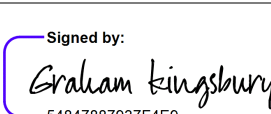
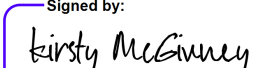
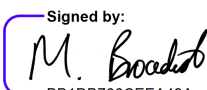
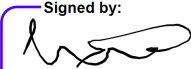
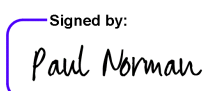
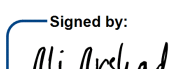
- **The barriers that held SMETERs back a few years ago no longer apply.** Sensors were wired in, requiring a plumber or electrician. Today's systems are more and more plug-and-play, installed by a non-specialist in 20 to 30 minutes.
- **A UK Government assurance system is on its way.** As part of the Warm Homes Plan, the UK Government committed to creating an assurance system for SMETERs during 2026. This system is intended to both provide a clear view of the accuracy of different SMETERs as well as install a trusted assurance scheme so that the sector can have confidence in individual SMETER assessments.
- **This is proven at scale, not in a lab.** A range of SMETERs have now been used in thousands of homes with consistent results showing that current EPCs, based on survey data for determining space heating demand, are often far from the real measured performance. This may not yet be a mature industry, but we are well past proof of concept.
- **Evolution not revolution.** It is now clear that the ambition is not to replace EPCs, SAP or HEM. Measured HTC's are not a rival framework but are a way to replace survey-based data, which is hard to get right, with measured data on the real space heating demand. This is a need tweak to the system, not an overhaul.

Call to Action

- **Deliver an assurance system in 2026.** Whilst there is a growing set of data that demonstrates that SMETERs can be accurate, it's essential that a Government approved assurance system is in place during 2026, to give the market and regulators full confidence in this approach.
- **MEES compliance.** Compliance currently relies on modelled EPC data, not measured performance. Where a measured HTC exists for a property, it should be usable as a basis for demonstrating MEES compliance — in both directions.
- **New-build standards.** New builds routinely underperform their design specification. Post-occupation SMETER measurement should become a standard part of new-build assurance, confirming that a home delivers the performance it was sold on.
- **Funding compliance and verification.** Compliance with SHF/Warm Homes objectives is verified today through modelled data despite one in five properties failing it in practice. Measured performance should be a basis for demonstrating that funded work has delivered.
- **Performance-based subsidy.** Subsidy today is tied to what is installed, not what it achieves. Once real performance improvements can be measured, subsidy should be tied to the outcome delivered, not the measure fitted. Implementation of such an approach should ensure that risks of underperformance sit with the delivery chain and not the property owner.

Moving Forward

As a sector we are ready to support Government to develop the necessary evidence to move to a real performance world. We have retrofit and new build projects that can be used to demonstrate the power of using real performance data and we stand ready to work with Government to gather the necessary evidence.

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David Glew	Leeds Sustainability Institute	Signed by:  4476931CDF3E45F...
David Hall	HP Group	Signed by:  03C63A5C0AFA432...
Gemma Voaden	Together Housing	Signed by:  52D0E8960E61460...
Graham Kingsbury	Westminster City Council	Signed by:  54847887937F4E9...
Kirsty McGivney	Hastoe Housing Association	Signed by:  43201FA3AC23419...
Martyn Broadcast	Connect Housing	Signed by:  BB1DB766CEE443A...
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Tom Dollard	Good Homes Alliance	Signed by:  B1F915AD8C63432...
Ali Arshad	London & Quadrant Housing Trust	Signed by:  8B8A911928674C2...