Did no one call the plumber?: Analysis of the Heat and Buildings Strategy's approach to skills and workers

BRIEFING PAPER

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This briefing paper analyses the Government's recent Heat and Buildings Strategy, published last month, insofar that it provides clarity, direction and support for the workers who would deliver the decarbonisation of home heat and thus play a key role in the UK's Net Zero plans.

KEY POINTS

- The UK's Net Zero plans mean decarbonising the heating of buildings, including homes, which account for 14% of carbon emissions. This will mean replacing millions of domestic fossil fuel-burning heating systems with new ones, including heat pumps.
- The Government's Heat and Buildings Strategy (HBS) is meant to address this challenge, but it largely overlooks a vital element of decarbonising heat: training the workers who would carry out the installations and modifications required.
- Evidence around this workforce – plumbers, installers, heat, and gas engineers – is worryingly thin. Neither government nor industry even know how many people are currently trained to install heat pumps, for instance.
- Many of the workforce are likely to be self-employed sole traders, responsible for their own skills and training. Such workers may face greater costs than others from undertaking training, so heat policy needs to address the financial barriers to training.
- The HBS largely fails to do this, leaving the delivery of training to the market and trusting that growing demand for heat pumps will incentivise workers to pay for their own training.
- This approach is unlikely to succeed, since the HBS does not provide adequate stimulus for consumer demand for pumps and creates uncertainty about their future and the adoption of hydrogen as a potential alternative.
- Ongoing SMF work with the workforce suggests that without further policy intervention, many workers will hold off spending time and money on training for heat pump installation.

INTRODUCTION

The long-awaited Heat and Buildings Strategy (HBS) was published last month, as part of a collection of publications on how the Government intends to reach Net Zero. The HBS sets out a vision for the transition to high-efficiency low-carbon buildings in the UK. The SMF is currently engaged in an ongoing research project on the workforce involved in heat and buildings, a project that involves extensive interviews with installers[i], businesses and others involved in heat and plumbing. This note summarises our analysis of the HBS based on the evidence we have gathered during our work. Our conclusion: the HBS is a good start, but it has some serious omissions relating to the workforce, meaning there is still much work for policy to do around heat and buildings.

Context

Establishing a plan for decarbonising heat has been both politically and fiscally challenging. The HBS was first expected to be published in the autumn of 2020, but then was repeatedly delayed. This summer saw the emergence of an organised political opposition to decarbonising home heat, by way of an MP-led media push-back against the phase-out of gas boilers. Rumours swirled about disagreements between the Prime Minister and the Chancellor on green spending. Against this backdrop, the publication of the HBS demonstrates clear intentions from the Government to move forward with one of the more challenging parts of Net Zero: phasing out fossil fuel heating. This is worth acknowledging as an important and positive step, even if the document doesn't quite offer a comprehensive roadmap or resolution of some of the major challenges involved.

Across Westminster and beyond, experts and analysts have provided much commentary and analysis on the scale of the HBS in terms of politics, policy, and finance. Ambitions have been welcomed and holes have been poked – on the latter, namely in the shortfall of the Boiler Upgrade Scheme and the policy gap for owner-occupier energy efficiency support.[1] Less attention, however, has been given to the strategy's approach to skills, and the workers who will deliver any transformation of heating.

HOW MUCH DO WE KNOW ABOUT THE INSTALLER WORKFORCE?

Fossil fuel heating of domestic buildings accounts for around 14% of the UK's overall territorial carbon emissions. Eliminating those emissions means weaning 24.5 million homes off gas heating.[2]

The HBS outlines a key and immediate role for heat pumps to play as part of a low-carbon heating solution for a range of homes. The Government's stated ambition is for a deployment of 600,000 heat pumps installed a year by 2028. The Heat Pump

[i] For convenience, this paper uses the term "installer", a word that that can indicate people from several trades and backgrounds: plumbers, heat engineers, gas engineers, general tradesmen and builders.

Association estimates that 50,200 fully trained heat pump installers will be required to fit one million heat pumps a year by 2030.[3]

The upshot is that a key part of delivering the Government's overall Net Zero strategy depends on the skills of installers. Yet, how much do we really know about this workforce? The short answer: not enough, especially given how important that workforce is to the delivery of a key Net Zero policy.

Heat pump installers

Worryingly, it is unclear if either industry or government even know how many engineers are currently skilled or trained to install heat pumps. The HBS says that there are currently 1,100 MCS-registered and qualified heat pump installing *companies* in the UK[4] (MCS is an accreditation scheme run by the Microgeneration Certification Scheme Service Company Limited). A widely quoted figure from EY published this year suggests that there could be 1,200 heat pump installers[5]. However this seems to refer to the Heat Pump Association's estimate for the number of installers needed for 2020, an estimate published in 2019.[6] Separately, the Government's Net Zero Strategy (published on the same day as the HBS) suggests we *"will need to rapidly increase the number of qualified [heat pump] installers from around 3,000 to 35,000 within the next seven years"*.[7] These figures appear to reference the Heat Pump Association's updated estimated figures for the number of installers needed in 2021, published in 2020.[8] None of these figures explicitly refers to the number of heat pump installers *currently* qualified in the UK today. This is a troublingly fragile evidence base for a significant element of policy.

Engaging with stakeholders across the domestic heat industry, we often heard that even if there were a single figure for currently-qualified heat pump installers, that figure may not even capture the full picture of the workforce. There is currently no legislative requirement to be qualified or accredited to install a heat pump in the way that there is for natural gas boilers. Heat pump installers need to be MCS-registered only in order to receive payment for work done under government schemes such as the Renewable Heat Incentive or the incoming Boiler Upgrade Scheme. As a result, there may be a pool of unqualified heat pump installers across the industry. Although we presume this group is small, its size is unknown.

Sole traders

The employment status of installers is important, and yet also unclear. In the plumbing, heating and gas industry, it is widely recognised that a significant proportion of the workforce are sole traders. That means, among other things, that they are largely responsible for funding their own training, something that can have a direct cost and an opportunity cost, since a sole trader who is training cannot use that time for paying work.

However, the evidence on the extent of this self-employment is ambiguous. Survey findings of Gas Safe Register engineers in 2016 found that 77% of respondents were sole traders.[9] Assuming those proportions have remained stable, over 100,000 of the current 130,000 Gas Safe Registered engineers could be sole traders. More recent

findings from the Heat Pump Association's survey of fossil fuel heating system installers in 2019 found that nearly 50% of respondents were sole traders.[10] The HBS makes no explicit reference to this demographic of the workforce nor provides tailored support – an omission discussed later in this briefing note.

The HBS does recognise the age demographics of the current workforce, noting that a significant proportion of heating and plumbing engineers are nearing retirement age. As a result, the strategy provides plans for reviewing the existing apprenticeship framework and developing a Heat Network Skills Programme with the Department for Education to increase the recruitment pool.

Overall, policymakers don't know a lot about the people who will be necessary to deliver the decarbonisation of home heat – and the HBS is unnervingly light on detail for this workforce. It seems certain that significantly more installers will need to be trained in order to deliver the heat pumps and other changes needed to decarbonise heat. That will mean mobilising at least part of the existing plumbing, heating and gas workforce to train. Motivating sole traders – especially those closer to retirement – to take on the costs of doing so will be a key challenge, yet the HBS does little to address it.

WHAT DOES THE STRATEGY MEAN FOR INSTALLERS?

Decarbonising home heat will transform the nature of work for the heating and plumbing workforce significantly, and therefore the skills needed for that work. The HBS is not directly written for an installer base audience, but policy commitments in the strategy for how and when this transition will take place matter for those directly employed in the industry, so that they can plan their careers accordingly.

The HBS suggests that the Government's approach to skilling and training the installer base rests in large part on market mechanisms: *"we are committed to communicating signals for investment to provide certainty and stability for businesses to invest in training".*[11] Ostensibly, the strategy provides the signal to industry – employers, training providers, installers etc. – that heat pumps will be a key feature of domestic heat in future, so workers should prepare accordingly. But look beneath the surface of this ambition into the policy detail and it's unclear whether workers will be either pushed or pulled towards retraining for heat pumps.

Skills outlook

The HBS sets out a relatively detailed section on the skills requirements for heat pump installation. The strategy outlines the key qualification route to becoming a heat pump installer as well as an estimated timeline for the number of installers needed by 2025 and 2030. The term "green jobs" is often used without precision or definition, so this is an encouraging sign of how rhetoric around green employment can become a tangible reality.

Who needs to retrain?

The HBS does not make any new regulatory decisions on banning fossil fuel heating yet. Regulation for new builds was introduced earlier this year, confirming that all new

homes will be required to be equipped with low-carbon heating by 2025. Within the HBS, the Government proposes introducing a phase-out date for off-gas-grid homes from 2026, which it will consult on, and sets an ambition to phase-out gas boilers from existing homes (on the gas grid) from 2035. As a result, we expect that existing gas installers in rural or semi-rural areas and/or working for new build developments would be among the first to consider taking up heat pump training.

Recruitment of new heat pump installers will also be critical to the long-term planning of decarbonising home heat. But given that it can take 2-4 years for a gas installer to go from starting training to being fully qualified, the first phase of heat pump installation will probably depend on existing gas installers.

What do plumbers need to retrain?

Currently, there is no official accreditation or qualification framework for heat pump installers in the same way that gas installers must be Gas Safe Registered to fit a boiler. However, in order for consumers to claim government grants (such as the existing Renewable Heat Incentive or the recently announced Boiler Upgrade Scheme), the heat pump installers doing the work must be MCS-registered. That registration requires the following:

- Level 2/3 NVQ in domestic plumbing
- Heat pump-specific training
- On-the-job training for around 6 months.

While MCS operates as a market-based installation standard, currently there is also no official standard on heat pump training courses across different training providers, manufacturers and colleges. The MCS Scheme Criteria do offer a non-exhaustive list of training courses that meet the company's registration requirements.[12] The HBS also recognises the Heat Pump Association's development of a specific 7-day training course for existing heating engineers to retrain for heat pump installation[13]. Given the Government's commitment in the HBS to ensuring high-quality training and installation (below), we expect that the standards framework will probably evolve in the near-future.

> *"Government is working closely with industry to ensure that installers have up-to-date, high-quality training and that they are not undercut by installers who offer cheaper, low-quality installations. This involves developing new core competencies and agreed training criteria for installing low-carbon heating systems [...] using quality and certification schemes, and specification standards."*[14]

Stimulating demand

As part of the government's aim of offering certainty to businesses to invest in training, the HBS attempts to address some of the demand-side challenges that have held back mass heat pump uptake. The main challenge here is cost. However, we are sceptical as to whether the support for consumer demand will offer sufficient incentives for the industry and its workforce to engage in training.

The HBS introduced £5,000 grants through the Boiler Upgrade Scheme for homeowners in England and Wales to support the upfront costs of installing a heat pump. This scheme launching in April 2022 is backed by a £450 million commitment until 2024/25. This is estimated to deliver just 90,000 heat pumps over the three year period, which is broadly in line with the existing deployment rate. Experts highlight that this level of funding is insufficient in both sum and duration for scaling supply.[15]

Analysis from Energy Efficiency Infrastructure Group (EEIG) suggests that in order to be on track for the 600,000 heat pumps a year target by 2028, half will need to be installed in existing homes while the other half installed in new builds. In line with this target, EEIG estimates that a £1.3bn scheme of £5,000 grants over three years would be required to deliver 277,000 heat pumps to 2025. This suggests that the funding gap for the Boiler Upgrade Scheme could be as large as £850 million.[16]

There is also a question of whether a three-year funding commitment with no guaranteed extension is enough of a long-term signal to industry to invest in training. This is an improvement on the Green Homes Grant, which offered just six months of support for homeowners with the cost of energy efficiency improvements. However, the decarbonisation of heat is a multi-decade endeavour with notable cost and disruption barriers for consumers. Building supply chains and investing in a workforce requires the certainty of demand: £450 million over three years may not be enough of an incentive.

To complicate matters further, there is a vocal part of industry that would like to see hydrogen prioritised as a low-carbon heating solution in the home. The HBS is clear on its ambition for heat pumps, but this is only guaranteed until 2025 (through the committed funding of the Boiler Upgrade Scheme), with a decision on the future of hydrogen in the home promised the following year in 2026. These policies suggest that the signals to industry to invest in training are perhaps not as clear and certain as the HBS claims. Companies and workers might be left asking if training for heat pumps is worth doing now: why not wait a few years to see if those pumps do indeed generate significant work, or if hydrogen will take priority?

As a predominantly self-employed sole trader workforce, sole trader installers do not have the same level of capital as larger employers to invest in training where the returns on demand are uncertain. Current policies offer relatively low levels of stimulus for heat pump demand, and create uncertainty on hydrogen. Meanwhile there is enough demand for gas work to keep installers busy.[17] In these circumstances, will the HBS push or pull gas installers to retrain? Or will they wait? We are sceptical about the HBS' impact on workers' choices.

Support for skills and retraining

While the HBS sets a clear intention that the Government expects businesses to invest in skills and training, the strategy does highlight existing pots of public funding available for skills, including the National Skills Fund, Skills Bootcamps and Skills Training Competition. It remains to be seen how useful the various pots of existing funding will be for existing gas installers requiring heat pump training more specifically.

First, the HBS highlights the new £2.5bn National Skills Fund for future skills including a Construction Skills Fund *"which supports the development of construction onsite training hubs"*. The National Skills Fund allows adults who do not already have a Level 3 qualification to access a fully funded Level 3 course from a list of options. Those with an existing Level 3 qualification would not be eligible for a subsequent Level 3 course through the National Skills Fund. As it stands, heat pump courses are not included in the approved list of eligible courses. Even if a heat pump course were to be included in future, existing gas installers tend to be trained to a Level 2 or Level 3 NVQ Diploma in Domestic Plumbing and Heating, therefore the latter proportion of the workforce would be precluded from accessing this Fund.

Second, Skills Bootcamps (within the National Skills Fund) are also noted in the strategy as supporting training in clean growth and other key skills such as digital or engineering. Among the green skills bootcamps listed, none offer heat pump training specifically. Just one bootcamp appears to offer retrofit training run by Somerset County Council, "*fitting new systems designed for high energy efficiency and low energy consumption to buildings*".[18] However, this bootcamp is a pre-apprenticeship course and is unlikely to be adequate for existing gas installers looking to fully reskill for heat pumps.

Third, the £6.4 million Skills Training Competition introduced as part of the Green Homes Grant funds 18 applicants to provide installation and retrofit training. Ten of these applicants offer heat pump training explicitly and are based across England. However, the scale of these projects in terms of the number of installers they can train is unclear, given the scheme has a maximum award limit of £1 million per project.[19]

Lastly, as highlighted by the strategy, the Public Sector Low Carbon Skills Fund also provides £32 million funding to support the Public Sector Decarbonisation Scheme to ensure councils, schools, and other eligible organisations have access to the skills needed to deliver decarbonisation projects. However, it is unlikely that this scheme will reach existing domestic gas installers who are unlikely to work on commercial projects such as these.

The pots of funding listed above are welcome step change for investment in adult education and skills, which has seen a decade-long decline – this is important and worth recognising.[20] In the context of heat pump training and existing gas installers, though, the HBS does little to provide any new or specific support for their retraining.

ABOUT THIS PROJECT

This briefing paper is informed by one of the SMF's current research projects on the home heat installer workforce, sponsored by the European Climate Foundation (ECF).

The SMF retains full editorial independence with respect to its research and analysis.

ENDNOTES

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