HEAT PUMP ASSOCIATION

heatpumps.org.uk

# BUILDING THE INSTALLER BASE FOR NET ZERO HEATING

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# ABOUT

The Heat Pump Association (HPA) is the UK's leading authority on the use and benefits of heat pump technology and includes many of the country's leading manufacturers of heat pumps, components and associated equipment. Proposals put forward by the HPA are developed closely with a membership base that represents around 80% of the heat pump market manufacturing share, including several large multinational companies, ensuring that the proposals are workable and credible.

The Association works to support policymakers in the development of effective heat decarbonisation policy and other matters that affect the interests of end users, wider stakeholders and the industry. In addition, the HPA co-ordinates technical and market research into areas of mutual interest identified by members with the aim of improving market opportunities at home and abroad and helping markets to transform to low carbon solutions and technologies.

The HPA recognises that heat pumps will only fulfil their promise in the market if suppliers, installers and users fully appreciate their function and capabilities. A major objective of the association, therefore, is to raise awareness of heat pumps by informing prospective specifiers of their long-term benefits, reassuring end users and providing up-to-the-minute advice on the various systems available. The HPA conveys this message by generating publicity using exhibitions, literature, promotions and public relations, in addition to helping customers deploy the technology through managed sales and services structures.



# CONTENTS

# SUMMARY

- This paper has been published alongside an industry wide consultation, seeking views from installers on the new training strategy for heat pump installers, outlined in this document. The survey can be accessed on the HPA's website(heatpumps.org.uk) including the outlined criteria for the course content.
- Developing the installer base for heat pumps is fundamental to increasing the deployment of low carbon heat in a sustainable manner and achieving net zero.
- This will initially be achieved through the upskilling of the current heating installer workforce.
- Installers are crucial to net zero efforts as the main contact with homeowners.
- It is equally important in new build and the existing housing stock. New build developers face a steep curve to no fossil fuel heating in homes and a skilled installer base will play a critical role in this transition for new build developers.
- The current route to becoming a heat pump installer is too costly, bureaucratic and confusing, with outdated content still being taught, this needs to change as these factors should not get in the way of upskilling installers.
- This paper outlines the new scalable route to becoming a heat pump installer, via a technology neutral, low temperature heating course before specialising in individual low carbon technologies, such as heat pumps.
- This new route will reduce the cost and administration needed to become a heat pump installer, whilst ensuring that outdated content is updated, quality is maintained and important topics are added to reflect the changes that have occurred since the previous course was formed.
- With the pace of retraining installers crucial to achieving net zero, the Government should provide a voucher scheme for the first 5,000 installers to go through the new course with £1,500,000 of funding.

# BUILDING THE INSTALLER BASE FOR NET ZERO HEATING

The increased deployment of heat pumps is critical to reducing emissions from the UK housing stock and reaching net zero emissions. This well-established technology already emits 60% less than the traditional gas boiler and this saving will only increase further as the amount of renewable electricity generation continues to grow.[1] Heat pump installations will have to increase immediately if the Government wants to be seen as credible in its efforts to hit net zero emissions by 2050. The Committee on Climate Change (CCC) have advised that heat pump installations will need to increase to over 1 million per year by the mid-2030s with a total of 19 million heat pumps deployed by 2050. [2,3]

The importance of installers to the transition to low carbon heating is paramount, they are the linchpin for the decarbonisation of heat. Installers are the main contact with the homeowner and how installers engage with households is a fundamental part of the sector. According to the Department for Business, Energy and Industrial Strategy (BEIS), installers or tradespeople are the most trusted group to provide advice about which heating system to install in someone's home.[4] Without an increase in installer numbers there will not be the capability to deploy heat pumps at the level and quality needed, but crucially there will also not be the engagement and promotion with households that is needed to stimulate the growth in demand needed for net zero heating.

The number of heat pump installers must therefore increase (see Figure 1). These numbers will be achieved only if the Government puts a supportive and wide-ranging decarbonisation policy mix in place at the same time as industry efforts to ensure that the typical SME installer business is engaged and trained on heat pump installations. With a clear commitment from both industry and government this growth will be kickstarted.



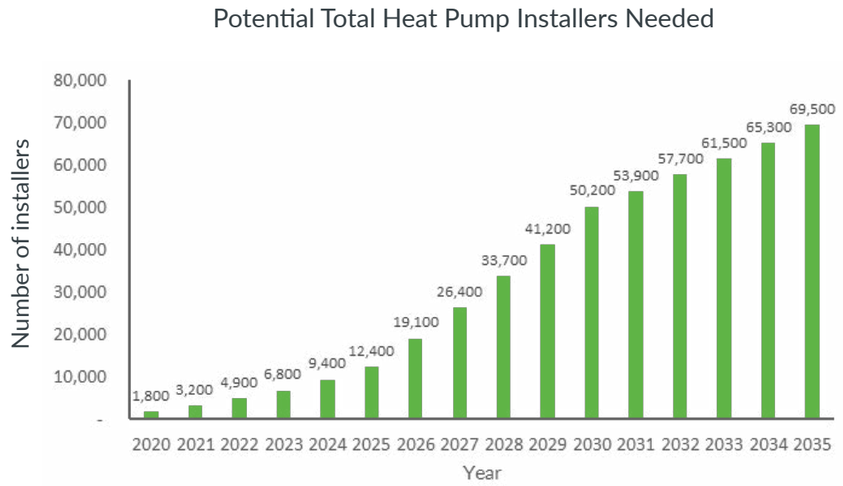



Figure 1: Potential Total Number of Heat Pump Installers Needed

In addition to having enough installers, the workforce must possess the skills required to build a sustainable and reputable heat pump market. This will come through training, which must ensure that installers are prepared to install and commission heat pump systems that allow the equipment to work effectively and protect consumers.

The initial growth in heat pump installers will need to predominantly come from those already installing traditional heating systems. The fundamentals of heating do not change with a switch to heat pumps, in the current installer base many of the skills required for low carbon heating installation are already in place and these will need to be built upon. There are over 100,000 registered gas engineers in the UK who are well capable of retraining to deliver low carbon heating, given sufficient demand. In the past half-century, there has been a radical shift to central heating systems and industry must be prepared for another move in heating technology with extensive training on low carbon solutions.[5]

The capacity to train heat pump installers at the rate outlined above is already in place for the next six years. Across the HPA membership alone there are 22 training centres with the ability to train an estimated 7000 heat pump installers per year. This even now provides the capacity to meet the considerable growth needed in new heat pump installers up to 2027. The growth in new installers per year would peak at around 9000 new installers in 2030, therefore industry will need to push up the capacity and staffing before 2027. With the right signals from government and market development in the years building up to this, the heat pump industry is confident in being able to step up to deliver this capacity.

Well-trained educators are also essential to ensuring that heat pump installers possess the necessary skills. If trainers do not teach, or even possess, the knowledge needed for quality heat pump installations then there is little chance that the installers participating in their courses will gain the required knowledge, and the reputation of the industry will be damaged. It is therefore important to ensure that there are enough trainers in place and that consistency across the delivery of training courses is maintained. This would be done through 'train the trainer' events to create this standardisation across the industry.

With confidence in the direction that the market is heading, installers will want to capitalise on the shift to the installation of heat pumps, meaning that they will retrain and there will be enough installers to meet the necessary growth of the heat pump market.

In 2019, the HPA membership trained over 2200 heat pump installers in their own training facilities. With the capacity to scale this up even further, efforts are being made across the Industry, working in conjunction with the Government, to ensure that there is an accessible route to becoming an approved heat pump installer, as well as a clear motivation for current heating installers to want to upskill. The rest of this report outlines how this route to becoming an installer will work and the important steps the Government need to take to support the transition.



# RESHAPING THE ROUTE TO BECOMING A HEAT PUMP INSTALLER

The heat pump industry is stepping up to develop the installer base, laying out a clear and accessible route to becoming a certified installer. There is a recognition that the current route to becoming a heat pump installer is not easy and must be changed. This involves a redesign and update of the curriculum, stripping out unnecessary paperwork, cost and content, to bring the route on to a level of administration and expense closer to that required for boiler installers.

It is vital that this new route is scalable. If the current structure remains in place, with too many unnecessary requirements needing to be satisfied, there will be less chance for the type of growth that is needed in the heat pump market needed for net zero. The new route must therefore be easily accessible without any needless bureaucracy. The industry should, for example, look to use and encourage media and platforms which will increase the competency of the installer base without restricting the growth of the industry.

The high barriers to entry associated with accreditation mean that competition amongst installers is low. Although the level of protection given to consumers must be maintained, this lack of competition means installers can charge higher amounts, increasing the cost to the consumer and stalling low carbon heat deployment as a result. Whilst manufacturers often recommend to households to obtain several quotes this is not always currently possible. Therefore, this new route sets out to make it easier and less costly for an installer to qualify as approved, which will help to increase the numbers of, and competition amongst, installers to significantly lower the applied installation costs whilst maintaining consumer protection (see Figure 2).

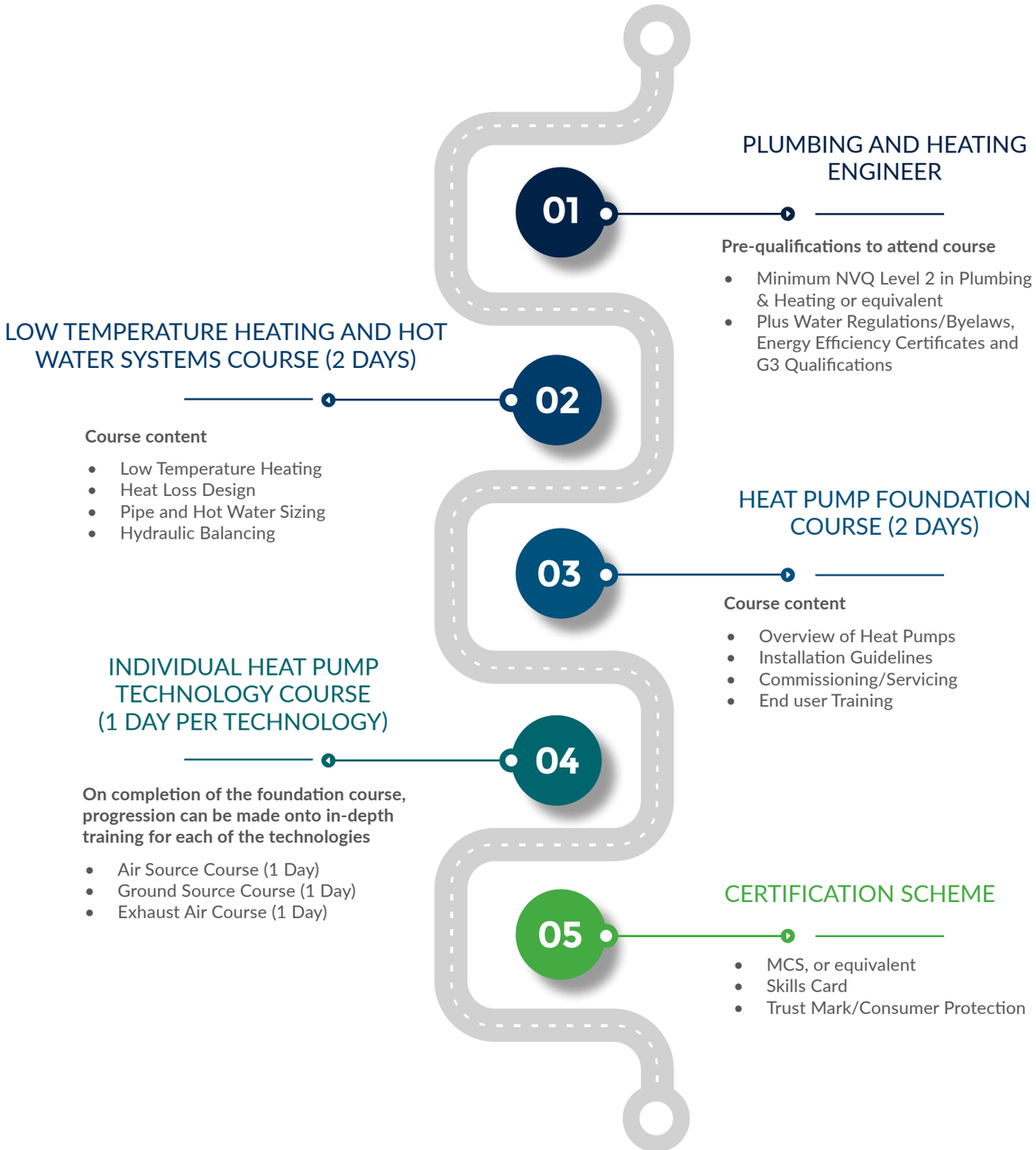



Figure 2: The Route to Becoming a Heat Pump Installer



The heat pump industry is supportive of a Low Temperature Heating Systems Course which would cover the skills that are essential to efficient heating, regardless of the technology installed and should always be carried out. This would include topics such as heat loss calculations, hydraulic balancing, pipe and emitter sizing and low flow temperature heating; it would take two days to complete. It would be a prerequisite to any specific technology courses, with a National Vocational Qualification (NVQ) Level 2 in Plumbing and Heating or equivalent (see Appendix for further details) required to access the course and has approval from across the heating industry. [6]

Following the completion of this technology neutral course, installers would then be able to undertake courses specific to low carbon heating technologies, which would be administered and accredited through various industry bodies.

The design and install of systems are important to be separately taught, the training route discussed in this paper is for install rather than design. The design phase of a heating system is essential to ensuring that heating systems are correctly sized and working as efficiently as possible to reduce both energy demand and emissions. It is essential that installers understand the key design considerations so that the two stages can be married to ensure that the heating systems actually operate as they were designed to. This is especially important for heat pump installers, due to the high factor by which heat pumps can operate more efficiently than traditional heating systems, it is important that the full efficiency advantage of the technology is realised when the systems are in place.

The heat pump technology courses will be delivered through MCS or an equivalent approved body, although in a completely revamped and overhauled form that removes the bureaucracy currently associated with the scheme and opens up a more straightforward route to becoming a heat pump installer; consumer protection would not be sacrificed through this reshaping.

The basic service and maintenance requirements will be covered in this course. With ongoing technological improvements, manufacturers will ensure that installers installing their equipment are kept up to date with the specific requirements for each of their systems. This would also form part of the refresher course needed to maintain certified status, which could be carried out during product update training or when specifically needed and could be a requirement for maintaining certified status, as currently the case with Gas Safe.

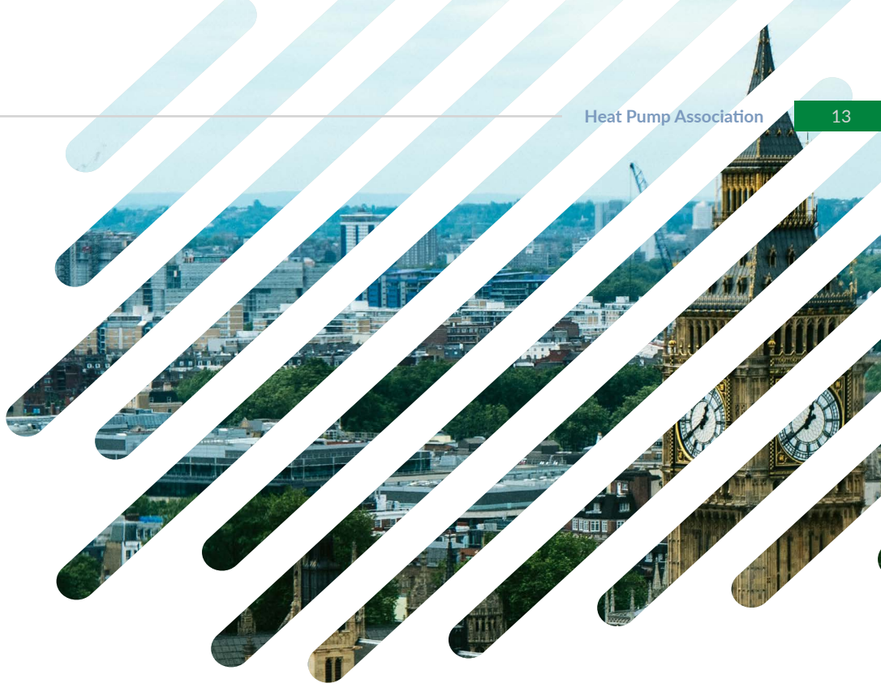
The heat pump route would take three days to complete in total. This would start with a Heat Pump Foundations course which spends two days covering the knowledge needed to install a heat pump, irrespective of the heat pump technology type. The content of this course would cover topics such as health and safety, environmental considerations (e.g. refrigerant types) and regulations. It would cover the basic heat pump parts that are common to all products.

Following the completion of the Heat Pump Foundations content, installers would then be able to specialise in the specific heat pump technologies. This would take one day covering the knowledge specifically needed to install the different technology types, such as air-source and ground-source heat pumps (see Appendix for course content outlines). Time would also be allocated here for each manufacturer to provide the knowledge needed to cover the specificities of their products that have not been covered in the rest of the content.

It is intended that MCS or an equivalent body would be the owner of the scheme, based on a structure that has been shown to work, for example through the current Gas Safe or OFTEC approaches. The course content would be managed, administered and updated by MCS or an equivalent. This would include a Training Board of Industry representatives, likely to be made up of many of the bodies currently collaborating on the development of this new installer pathway, that would meet to discuss and update content regularly to ensure any ongoing changes are reflected in the course design. There has not previously been this capability which has led to the content of current heat pump courses becoming outdated. With this flexibility in mind, the training would be provided as a qualification so that updating of course content avoids any wider costs associated with updating through a certification route. With an organisation owning the course, such as MCS or equivalent it would provide the potential for any approved training body to be able to train installers through this qualification.

All of the individual technology courses would then feed in to a 'Low Carbon Skills Card' which would be used to demonstrate the credentials of installers to consumers. It will be used to provide confidence across the UK that installers are well trained in the deployment of low carbon heat and can be trusted to do a good job of the installs for the technologies where they are shown to be accredited. It will allow for refresher courses to become a requirement to ensure that skills are kept up to date. By standardising this across the industry, it will become a recognised signal for quality, similar to that used widely through the Gas Safe ID card at the moment.[7]





# THE ROLE FOR GOVERNMENT

The Government has an important role to play in this process. With Industry reshaping the installer training process and having the capacity in place to vastly increase the number of installers being trained each year, the pace of the initial progress made will be determined by the extent of support from the Government.

Whilst training is a key factor, there must be a policy mix of unequivocal support for low carbon heat, including the successful delivery of the Clean Heat Grant Scheme[8] and changes such as carbon reflective pricing for fuels, that provides assurance to installers that there will be a mass low carbon heating market for years to come. With this in place, installers will have the confidence to embark on the upskilling offered through this new training route to becoming low carbon heating technology installers, without this they may see no reason to change.

Installers are a crucial point of information for households. Heating system replacements are regularly made based upon the advice given to a consumer by the installer.[9] The sooner policy commitment is provided, the sooner installers will be pushing low carbon heating, raising awareness across the general public and the quicker the decarbonisation of our heat will occur.

## CASE STUDY: HEAT PUMP INSTALLERS IN FRANCE

Following the French Government's commitment to phase out all oil boilers within 10 years and the provision of a scrappage scheme grant alongside this, there is no doubt that the French Government is committed to increasing the uptake of low carbon heating. As a result, there has been a surge in heat pump installer training. The number of installers trained in the first half of 2019 surged by 264% for heat pumps compared to the same period in 2018.[10]

To match the pace of change needed to reach net zero by 2050, the Government must offer support for installers who are the early adopters of this training course and are fundamental to these ambitions being realised. Through the stimulation created by these early adopters a momentum will be gained where current heating installers will begin to follow this trend. Specifically, the HPA would advocate the allocation of £1.5 million to cover the majority of training costs for the first 5,000 low carbon heat installers to go through the new course.

The current financial implications for training to become an MCS accredited installer are far higher compared to that needed for a boiler installer. This is in part due to the Gas Safe registered installer being focussed on safety issues, rather than the engineering considerations currently undertaken through MCS. It is also due to the high levels of surveillance and administration for MCS. The cost difference though acts as a big barrier for building the installer base for low carbon heat and decarbonising the UK's heating.

The new heat pump course outlined in this document must be a similar cost to a traditional heating system equivalent, a level playing field is needed to encourage low carbon heat installer development. The current structure means MCS certification for a heat pump installer costs £750 first time around[11], compared to £392 for Gas Safe[12], the yearly renewal fee for MCS is £618 compared to £164 for Gas Safe. There are also insurance and certificate fees of £80+ per installation through MCS currently, whereas Gas Safe requires a £2.20 work notification.



While this is not a direct comparison it highlights two important factors that need to change. Firstly, there is a clear need for this cost to be lowered to ensure that it is affordable for an installer to complete. This is currently being considered by MCS, such as reducing the fees per installation, although it is not just MCS changes that need to be tackled to enable the successful transition to a low carbon heating skills card.

Secondly, it shows the need to upskill the current heating installer base, where it is not common to carry out practices to improve the efficiency of boilers, such as hydraulic balancing or heat loss calculations, that should be taking place. By bringing existing installation requirements for traditional heating systems on to a level playing field with heat pumps, not only will carbon emissions and fuel bills be lowered for fossil fuel heating, it will also enable a quicker transition to building the low carbon heating installer base.

With the initial fees and administrative burden required to become a heat pump installer closer to that of the traditional heating system equivalent, the early adopters should also be encouraged through a voucher scheme awarded upon successfully being awarded the qualification.

The HPA would suggest that this voucher would be worth £300, going towards the cost of the Low Carbon Technology Course for the first 5,000 installers to go through the course, but also meaning that these installers still pay a small amount so that they are less likely to cancel and be committed to attendance.

The voucher for the technology neutral part of this route would be given to the installer upon passing the assessments following the completion of the training course and being awarded the qualification for a specific technology, for example air-source heat pumps. To ensure a rigorous qualification, the assessment phase of the course should be taken separately from the initial learning, improving the likelihood that the skills needed are guaranteed and consumers are more assured a high quality of heat pump installation.

This funding will provide additionality to the low carbon heating transition. As has already been discussed, installers are crucial to this change. Yet currently the training of certified heat pump installers through MCS is stagnant. With this delivery of a voucher scheme to encourage current boiler installers to make the switch to low carbon heat the Government can help to overcome this inertia to begin the upskilling needed across the workforce.

Through the provision of this voucher from government, alongside the wider supportive policy mix for heat pumps, and the efforts from Industry to ensure that this course is set-up, monitored and updated, we will be on a path to achieving the decarbonisation of heat and achieving net zero.

# APPENDICES

## Appendix 1: Course Pre-requisite Qualifications

To be able to embark on the low temperature heating course and heat pump technology qualification, the following are prerequisite. This is for experienced entrants as we look to upskill the existing heating installer base.

**Pre-requisite qualifications:**

- National Vocational Qualification (NVQ) Level 2 in Plumbing and Heating
- Or NVQ Level 2 in Domestic Heating
- Or NVQ Level 3 in Gas Utilisation (Boilers)
- Or OFTEC Qualification
- Or demonstrable level of experience to be approved on a case by case basis given sufficient evidence provided
- Plus, Unvented G3 Certificate
- Plus, Water Regulations/Byelaws Certificate

## Appendix 2: Course Content

Please refer to course content consultation document (available on the HPA website)



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Disclaimer

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