

Vaillant installer survey report

Aspiring to a green future

April 2023





About Vaillant

Here at Vaillant, our founder, Johann Vaillant began his journey in 1874. In a workshop in Remscheid, Northern Germany, during his work as a copper beater and pump maker, he began working on ideas that would change the way we heat our buildings forever.

Today, Vaillant is still setting the standard in the heating marketplace, proudly designing, and manufacturing cutting edge heating technologies, supported by smart home ready controls that deliver some of the most efficient heating systems in the world. Our exceptional research and development facilities remain headquartered in Remscheid where our focus is on improving our range of award-winning heat pumps and supporting the ongoing hydrogen trials. Continuing to be at the forefront of technology, we are taking big steps to help reduce the emissions generated when heating our homes, such as using the natural refrigerant R290, with a low Global Warming Potential of just three, in our latest range of air source heat pumps.

With a growing focus on developing low carbon heating products, Vaillant UK is the first manufacturer to pioneer the production of heat pumps and boilers at our headquarters in Belper, Derbyshire in our 22,000m² on-site production facility.

In addition, we have six Centres of Excellence conveniently located across the UK in Belper, Kent, Farnborough, Bristol, Elland and Glasgow. Each Centre of Excellence offers state-of-the-art facilities, its own training manager and reception staff to ensure our customers receive the highest quality of learning.

At Vaillant, we pride ourselves on developing high efficiency products that save energy, conserve resources and enhance people's quality of living. As a business, we take responsibility for "Taking care of a better climate" - to safeguard the homes of millions of people and to protect the environment. All our employees are working to achieve this shared vision. It is both our ambition and our common goal. Innovation and sustainability are at the heart of everything we do as a business. Vaillant is becoming climate-neutral, and we have developed an ambitious long-term climate strategy, which focuses on the following areas;

- Climate-neutral from 2020 through our own afforestation projects
- Halving our own CO₂ emissions by 2030
- Supporting the aims of the United Nations and the EU on climate protection and sustainable development

Further information on Vaillant Group can be found here: www.vaillant-group.com/en/

About LCP

LCP Delta is the leading expert on the energy transition and the go-to consultancy for in-depth research and new energy expertise on topics like: the decarbonisation of heat, the digitalisation of energy, and the development of the electric vehicle market and associated charging infrastructure. We enable organisations to develop the best strategies, business models and customer propositions via our subscription research services, training programmes, and bespoke consultancy projects.



Copyright and any other intellectual property rights in the UK Installer Survey for Vaillant belong to LCP Delta. LCP Delta does not accept any liability for any loss that arises out of or in connection with Vaillant or any third party's reliance on the UK Installer Survey for Vaillant.

LCP Delta is a trading name of Delta Energy & Environment Limited and Lane Clark & Peacock LLP. References to LCP Delta may mean Delta Energy & Environment Limited, or Lane Clark & Peacock LLP, or both, as the context requires.



Contents

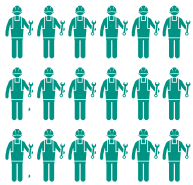
Introduction	4
Executive summary	5
Core attributes of survey respondents	7
Installer engagement with heat pumps	9
Training in detail	13
Capabilities and confidence levels	16
Fast-tracking the skills transition	19
Conclusion	21
References	22



Introduction

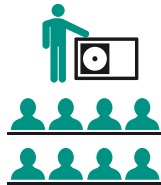
Within the Ten Point Plan for a Green Industrial Revolution¹, the Government outlined the ambition for the UK to install 600,000 heat pumps per year by 2028. The ambition remains strong, and we now have focused subsidy schemes such as the Boiler Upgrade Scheme in England and Wales providing grant funding to homeowners to make the switch. Alongside this the Government has set phase-out dates for natural gas boilers, which is a strong signal that heat pumps are a critical solution to the issue of decarbonising home heating.

The purpose of this report summarises the findings of a survey carried out to understand the immediate views of heating engineers, and the appetite for transitioning to become an air source heat pump installer. 1,136 installers, registered to our Vaillant Advance loyalty scheme, responded to our survey with positive results. We received a high level of responses, illustrating how engaged gas installers are with this topic, and how there is a significant growth and interest in heat pump technologies.



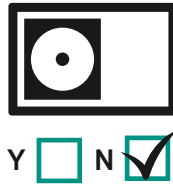
1,136

INSTALLERS
SURVEYED



994

INSTALLERS WERE
INTERESTED IN AIR
SOURCE HEAT
PUMP TRAINING
IN THE NEXT 12
MONTHS



82%

SURVEYED
CURRENTLY
DON'T INSTALL
AIR SOURCE
HEAT PUMPS



What is Vaillant Advance?

Vaillant Advance is Vaillant UK's loyalty scheme for gas and low carbon heating installation businesses. We pride ourselves on supporting our loyal installers with business support tools and rewards for registering our products and engaging with the Vaillant brand.

Many installers work for themselves therefore running costs of the business will impact their income. To support these businesses, we offer support such as; dedicated lead generation through our "Find an Installer" tool, Advance support telephone line, dedicated Regional Business Manager, access to Vaillant's training platform (The Vaillant Academy), and free Gas Safe registration.





Executive Summary

Henrik Hansen,

Managing Director of
Vaillant Group UK & Ireland

Decarbonising heat is the biggest challenge to home heating in half a century.

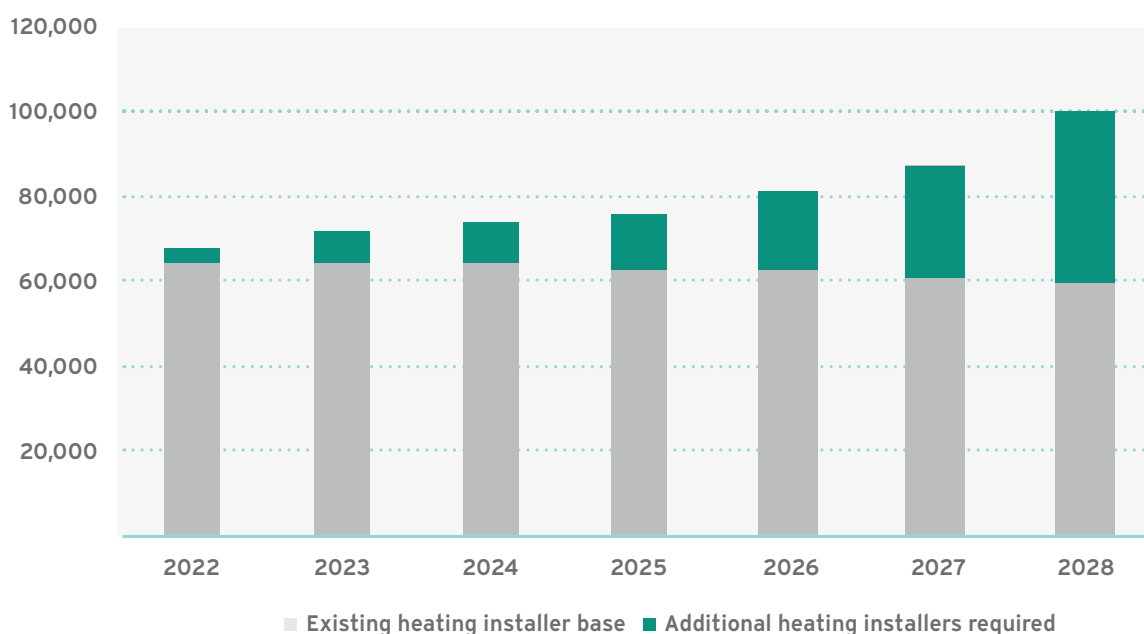


The UK Government has an ambition to reduce current levels of carbon emissions by 78% by 2035², and net zero carbon emissions by 2050 in England and Wales³, and by 2045 in Scotland⁴. To achieve these targets the majority of UK homes that we currently live in and those to be built in the coming years, need to be decarbonised. With approximately 80% of homes already built for 2050⁵, the biggest challenge lies in this market.

Over a third of emissions come from home heating⁶, so heating manufacturers and those working in the industry must work together to decarbonise the UK housing stock today. Whilst there is no silver bullet, heat pumps will play a significant role in meeting the net zero targets. The UK Government has given strong policy signals towards this low carbon technology, with many publications highlighting the ambition to install 600,000 heat pumps per year from 2028.

As shown in figure 1, we estimate the UK needs approximately 80,000 - 100,000 individuals skilled with the necessary expertise and competencies to install heat pumps and meet these ambitious targets. This is a significant increase from today where latest published figures show, only 1,500 MCS accredited businesses⁷ are able to install heat pumps that will be eligible for the Boiler Upgrade Scheme grant, in comparison, there are 131,600 Gas Safe registered engineers⁸. In order for the heat pump market to increase, the number of installers must too. The skills challenge is widely recognised as a key area that will impact our net zero transition so encouraging gas installers to diversify into heat pumps needs to happen today.

Figure 1: Number of installers required to meet heat pump targets⁹





As a manufacturer of gas heating products for nearly 150 years, we understand that heat pump installers will use many skills which they utilise today to fit a fossil fuel boiler. These include understanding building regulations, thermodynamic principles, heat emitter sizing, temperature differentials, tightness testing, fault finding, servicing and customer service.

With these skills in mind and heat pumps being key to decarbonise, it is an opportunity to change the way skilled operatives work in the heating sector. Most installers specialise in a single trade such as plumbing, heating or electrics and, with a significant proportion of the market being small enterprises, there is little crossover between these trades people. Looking toward the future, installers need to operate as low carbon heating engineers or technicians with skills that encompass a range of traditional trades. We need to recognise that during the transition phase, the low carbon heating technician may be a number of individuals who work together to complete projects whilst we train multi-skilled, multi-faceted individuals of the future with the necessary skills and competencies.

With the heating industry transitioning to electric, we commissioned a survey of heating engineers to gain insight to the barriers, challenges and training requirements engineers experience, to understand the task ahead of how the industry and Government will meet the challenge of decarbonising home heating.

We captured the responses of over 1,100 installers and found that;



Over 70% of installers felt that the Government needs to do more to support heating engineers gaining the required skills to install heat pumps, and 65% identified that the upskilling process needs to be easier



Engineers see heat pump training as an opportunity to future-proof their businesses and help support environmental goals



Heating engineers show some willingness to pay for training, however it's likely not enough to cover the full balance



On average an installer requires a further 6 days of training additional to their initial skillset



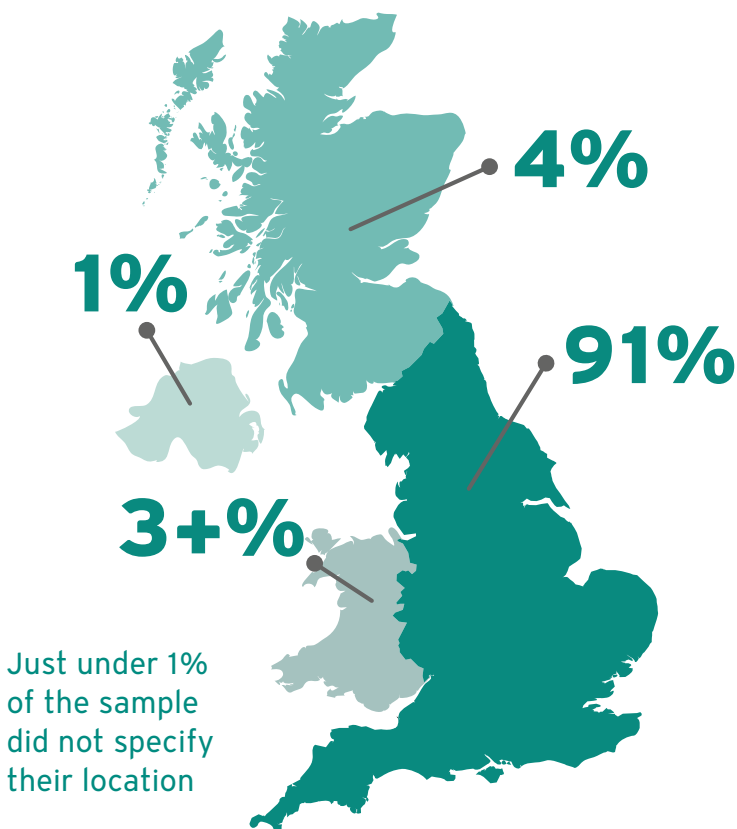
After learning how many training days it would take, more than half the sample remained interested in training in the next 12 months

Heating engineers show a strong interest in undertaking heat pump training within the next 12 months, but there are some key areas where targeted intervention will be necessary to ensure as much of this potential as possible will convert.

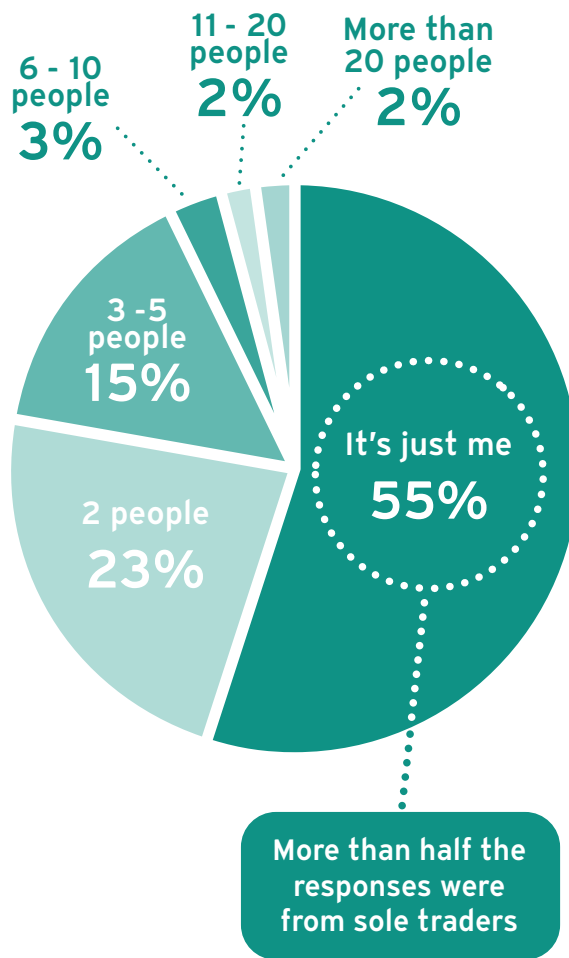


Core attributes of the survey respondents

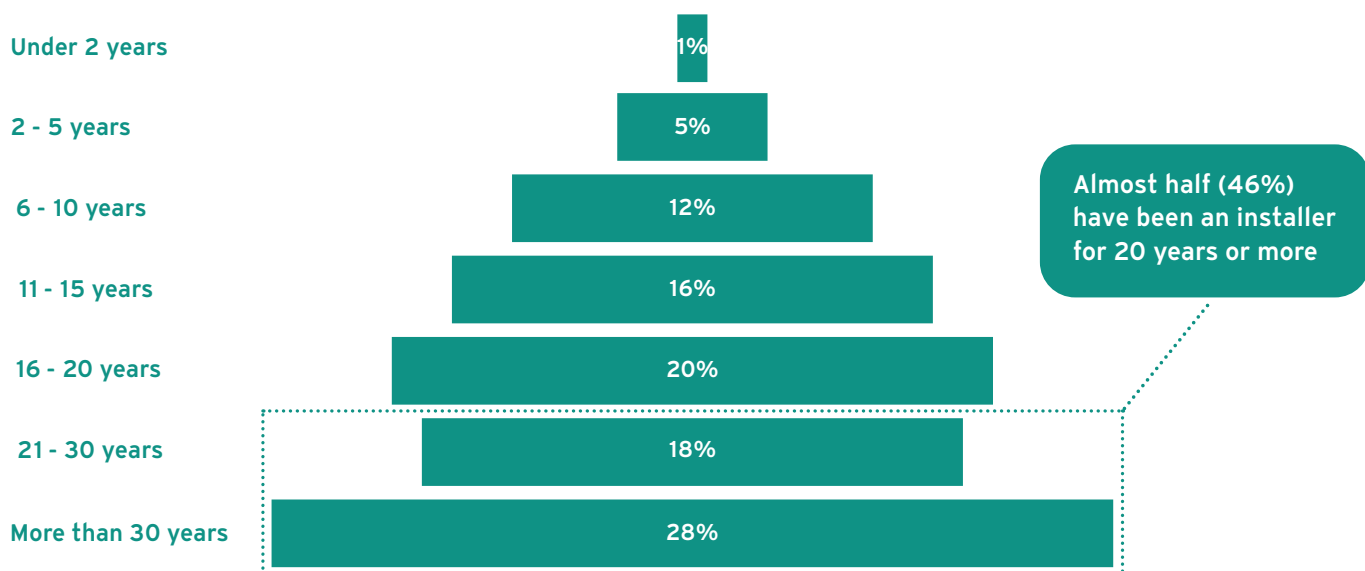
Location



Company size



Experience (years as an installer)





Age, career length aspirations and company attributes

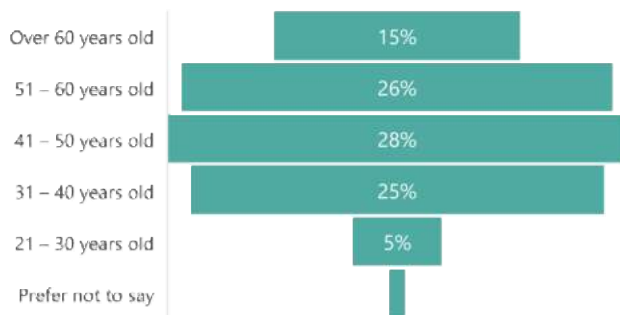
Age is a crucial detail within this survey, we understand that those who are more senior in their heating career are less willing to take on additional training. These installers recognise that fitting gas boilers in an existing property is still permitted until 2035 in parts of the UK, therefore they may not need to ever fit a heat pump before they retire.

1% of the sample did not submit their age, however, over 75% of participants are between 31 and 60 years old, there was no installer aged below 21 years old, and of those we surveyed 15% are close to retirement age. Within our full sample of 1,136 we found that over half of them plan to work as heating engineers until they retire. Another 25% do not plan to change their career for the foreseeable future.

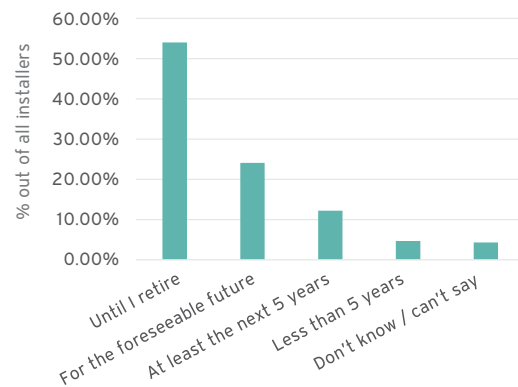
We found that the largest interest in heat pump training comes from younger installers with fewer years of experience. The lesser interested are those aged over 60, and those who have more than 30 years trade experience.

From this we can conclude that 36% of installers surveyed are close to retirement age in the next 15 years, with some choosing not to retrain and transition to heat pumps, as they will not be working when we need to meet the 2050 net zero target. This means the number of potential Gas Safe engineers available to retrain is lower than projected.

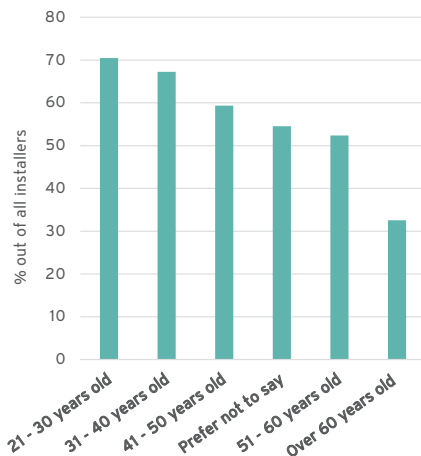
Age profile of installers



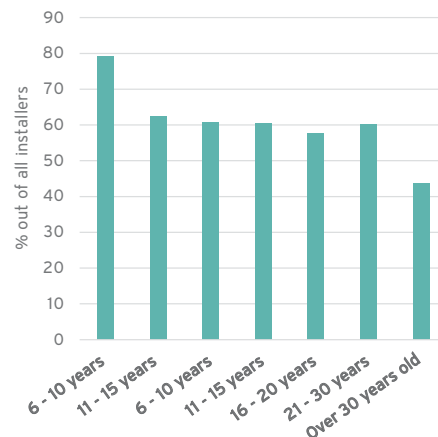
How long do you plan to keep working as an installer?



Interest in training by age



Interest in heat pump training by years of experience



Installer engagement with heat pumps



Vaillant Comfort for your home



Diversifying to heat pumps

Of the 1,136 installers surveyed, 82% stated that they currently do not install heat pumps. When asked their opinion on heat pumps nearly 80% of respondents agreed that not enough homes are suitable for a heat pump, over 70% agreed there was not enough consumer demand and over 70% agreed they are too expensive.

over
70%
do not see enough consumer demand and cite that they are too expensive

It is clear that general attitudes towards heat pumps vary greatly between installers and customers:

Retiring in three years. More than enough gas servicing repairs to deal with.

Concerned not securing enough air source heat pump jobs after the training and making my money back.

I don't feel gas is going to go anytime soon, everyone prefers gas and it had better benefits I think for the next 20 years we will still be on.

I hold recognised Air Source Heat Pump qualifications, but **I will always be interested in further training.**

Already fully trained (for air source heat pumps).

I am only 2 months into being self employed. I need to get myself established first before I can branch out further. **I would be very interested in installing heat pumps later though.**

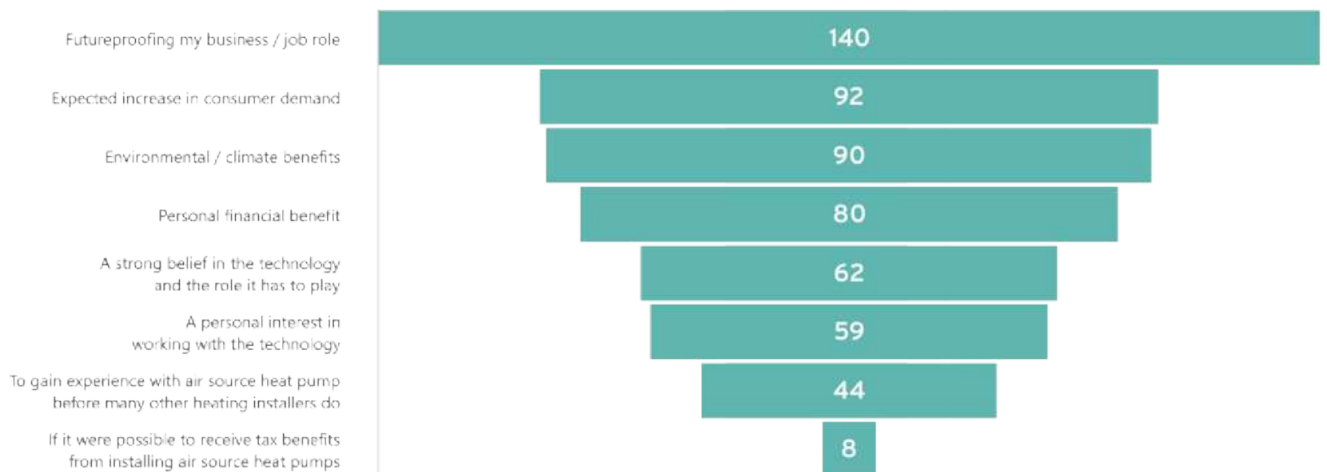
No demand from customer. Not going to get heat pump installation work because too expensive for customers.

If we invest in training by the time we qualify, the Government will possibly have changed the requirements.

Within the survey, 18% of installers were already installing heat pumps, and we asked each of them to pick their top three motivators for upskilling. We found that future-proofing their business was

number one. It's clear that these installers are forward-thinkers, preparing for the expected future levels of heat pump demand.

Motivations for currently installing heat pumps



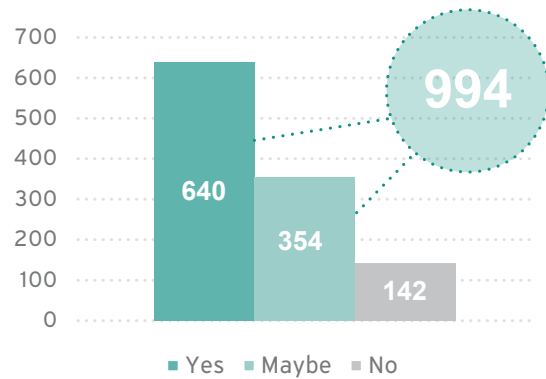
* Numbers on the chart represent each installer's 3 most important motivations (1st, 2nd and 3rd) out of 8 options (above).



Initial interest in heat pump training

We asked all the survey respondents, whether they were interested in heat pump training:

- Out of 1,136 survey respondents, 56% were initially interested in heat pump training
- Another 31% answered 'Maybe'
- Together this totalled at 994 installers stating 'Yes' or 'Maybe' to initial interest in heat pump training



Taking time to train

Taking time to do any training is difficult for many installers as it often means losing paid work, therefore, it was important that installers understand the amount of time they would need to invest in training to become low carbon accredited. Firstly, we assessed their current qualifications to understand the level of training the installer already had. We identified that most installers require between 0 and 9.5 days training to obtain the necessary skills to install heat pumps, dependent on their existing skill set. On average, we found that it would take 6 days training for an installer to obtain the skills for a competent heat pump installation.

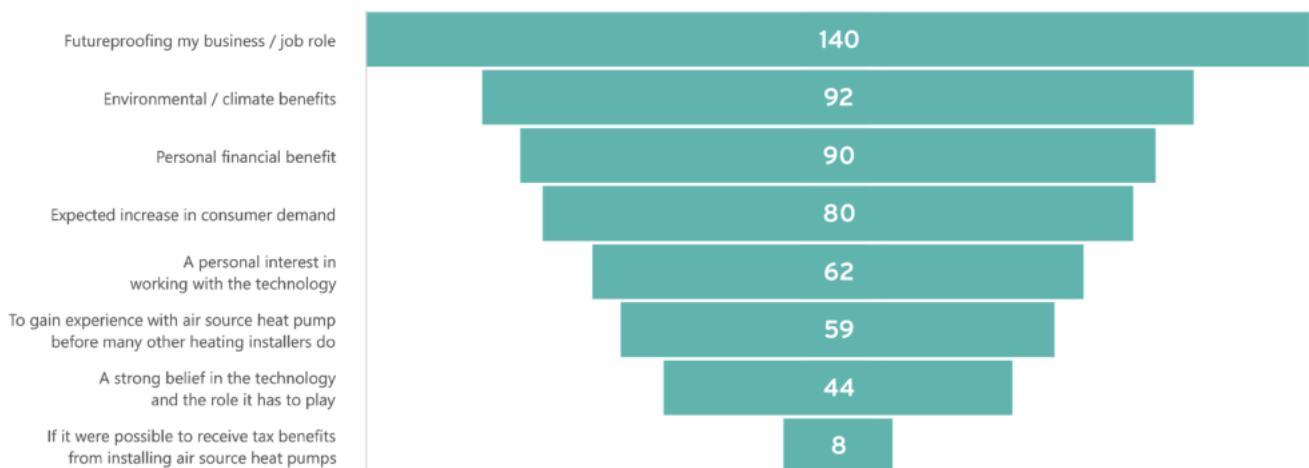
After learning the time they would need to invest in training, we asked whether they were still interested, which overall, installers were still interested in becoming heat pump installers.

- Out of 994 installers who responded 'Yes' and 'Maybe' to the initial interest, 64% were still interested after learning the time required for them to complete the necessary training
- Another 29% answered 'Maybe'

On average an existing installer needs **6 days** to diversify into heat pumps

We then asked the question of the 637 interested installers, not yet installing heat pumps what their top motivators would be for undergoing heat pump training in the future. Similarly, to the 18% who are already fitting heat pumps, the top motivation was to future-proof their business, recognising that heat pumps play a pivotal role in decarbonising home heating.

Motivations to train of interested installers not yet installing heat pumps



* Numbers on the chart represent each installer's 3 most important motivations (1st, 2nd and 3rd) out of 8 options (above).



The role of UK Government in supporting heating installers

Through funding, legislation and building regulations, Government plays a huge part in supporting the industry to decarbonise. We asked installers what their view was on the role Government must play in the scale up of the training needed for fitting heat pumps.

Many installers share strong views and believe the Government has a central role to play in the scale-up of heat pumps. The heating industry is a core part of meeting net zero objectives as laid out by Government, therefore installers feel they need more support to diversify into heat pumps. Government and manufacturers must work together to raise the competencies for a skilled workforce of the future.

Over
70%

of installers felt that the Government needs to do more to support heating engineers to diversify to be able to offer heat pumps

Over
60%

identified that the Government needs to make it easier to diversify to be able to offer heat pumps

65%

believe the Government needs to support them financially with diversifying



The training in detail



Vaillant Comfort for your home



What should training look like?

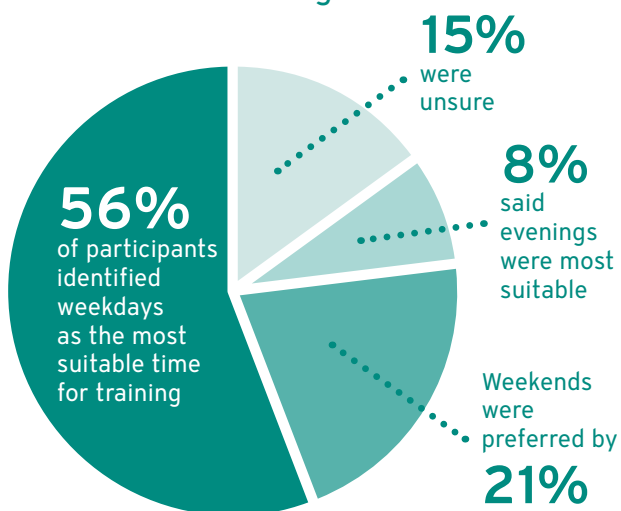
In this section we explore the training preferences of 637 installers who would like heat pump training in the next 12 months.

Despite the success of online training through the pandemic period, 637 installers with a view to upskill in the next 12 months, identified a clear preference for in-person or at least blended training. Furthermore, they were willing to travel and make time during the week.

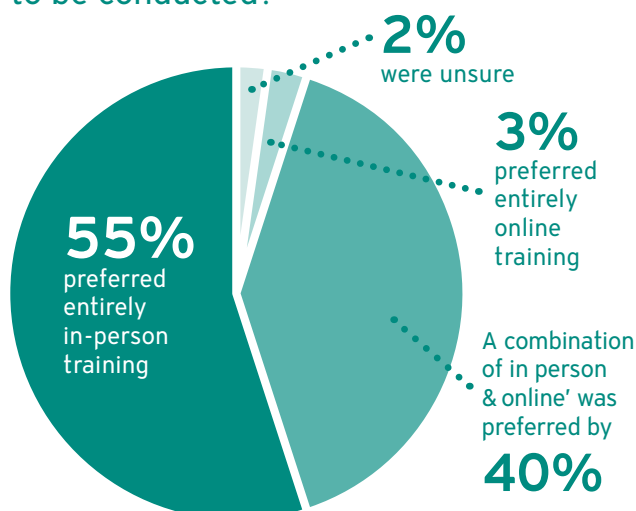
Manufacturers have already carved a pathway to train installers on their products, now they are pivotal to delivering a low carbon workforce.

At Vaillant, we have developed a number of courses focusing on our product in the wider industry to provide additional skills and knowledge. We also offer a low carbon journey for installers to work their way to fitting heat pumps using their existing gas boiler knowledge.

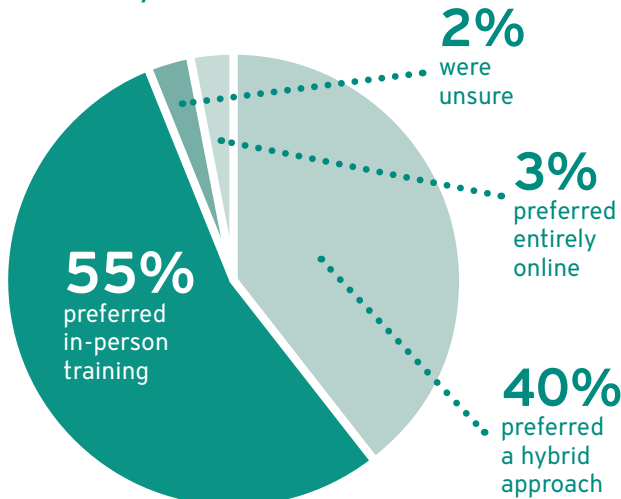
When is the most suitable time to undertake training?



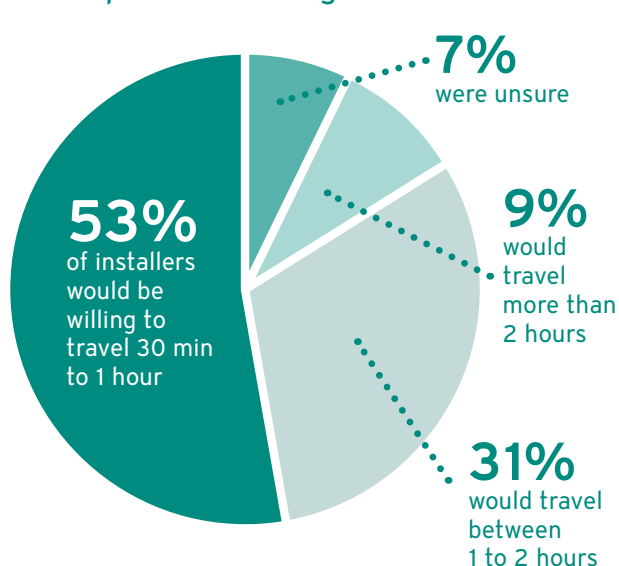
How would you like training to be conducted?



What training format works best for you?



How far are you willing to travel for in-person training?

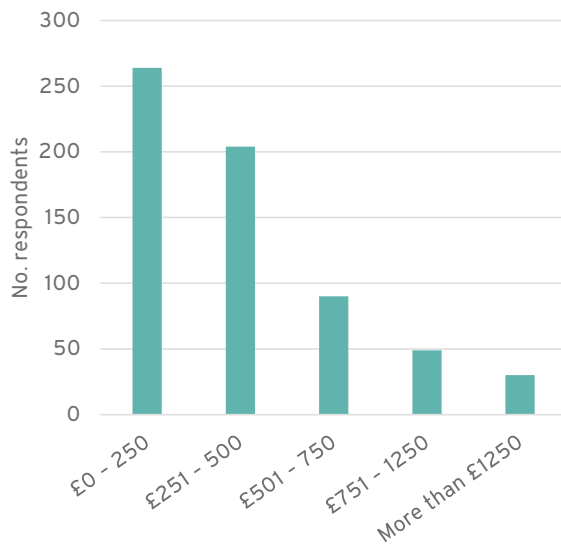




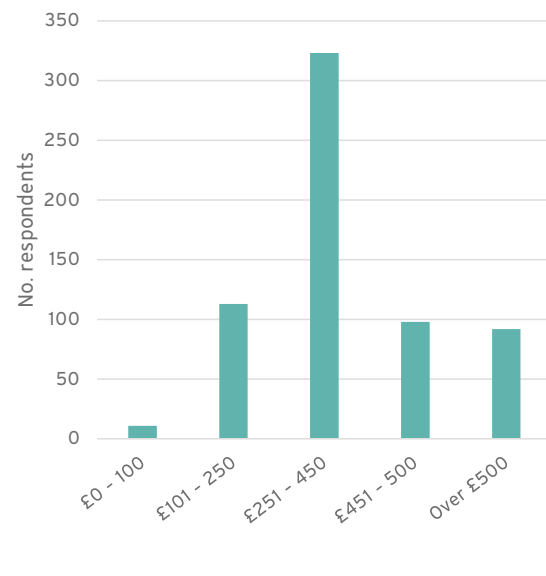
With any training course, there is a cost associated and we wanted to understand how much the interested installers were willing to spend on training and what they anticipated their daily loss of income

to be. Most respondents were willing to invest up to £250 in training whilst anticipating up to £450 in loss of income.

How much would you be willing to invest in further training in installing heat pump?



What would you anticipate your loss of income from undertaking a full day of training would be?



Out of the 637 participants that are interested in heat pump training, **41% are willing to spend up to £250 on the training**

Over half of the survey participants anticipate between **£251 and £450 income loss for a full day of training**

There is some willingness to pay for training amongst installers, however likely not enough to cover the full balance, with 73% not seeing themselves paying more than £450.

There is an opportunity for Government to offer financial support to cover losses incurred by training and to incentivise those wishing to embark on the necessary training to become low carbon installers.

Capabilities and confidence levels



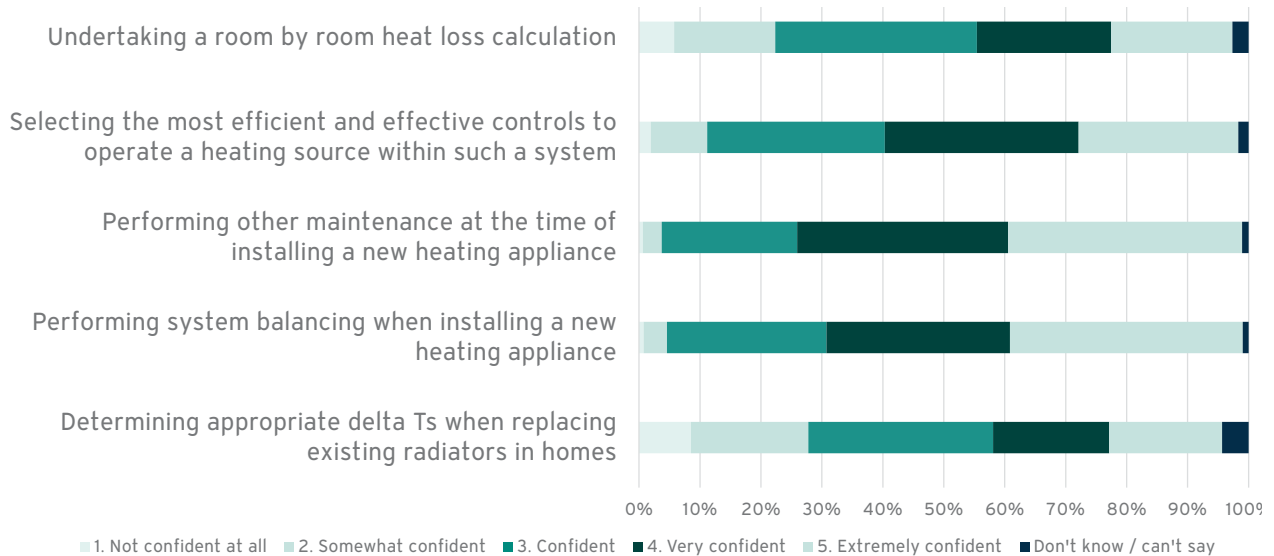


Heating Installers confidence levels

This section looks across the whole sample to assess the state-of-play of the general installer skillset.

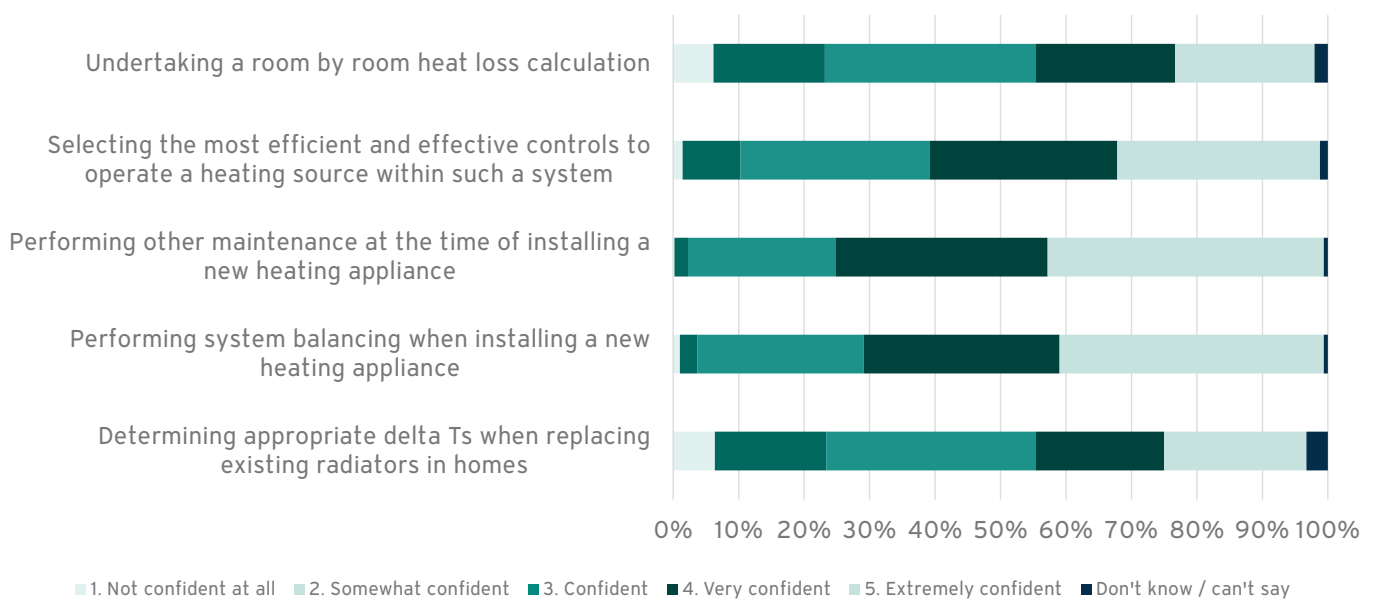
Confidence in completing heat system installation tasks - all installers

Of the 1,136 installers surveyed we found that most of them are 'confident' to 'extremely confident' in completing heating system installation tasks, and most support is required for more complex tasks such as heat loss calculations, and radiator sizing.



Confidence in completing heat system installation tasks - 637 installers

Like the total sample, the 637 installers who are interested in air source training have the highest confidence in performing other maintenance and system balancing when installing new heating appliance.

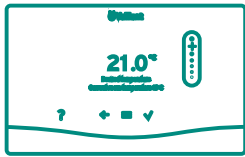




Identifying training needs

We then screened against training needs of the full sample and found that half of all installers would like additional training/support when it comes to choosing the right controls.

Following the assessment of capabilities, we then asked installers what additional training was needed. We confirmed there is an appetite for installers to continue further training to fine-tune their previously learned skills.



50%

would like more training/
support with choosing the
right controls

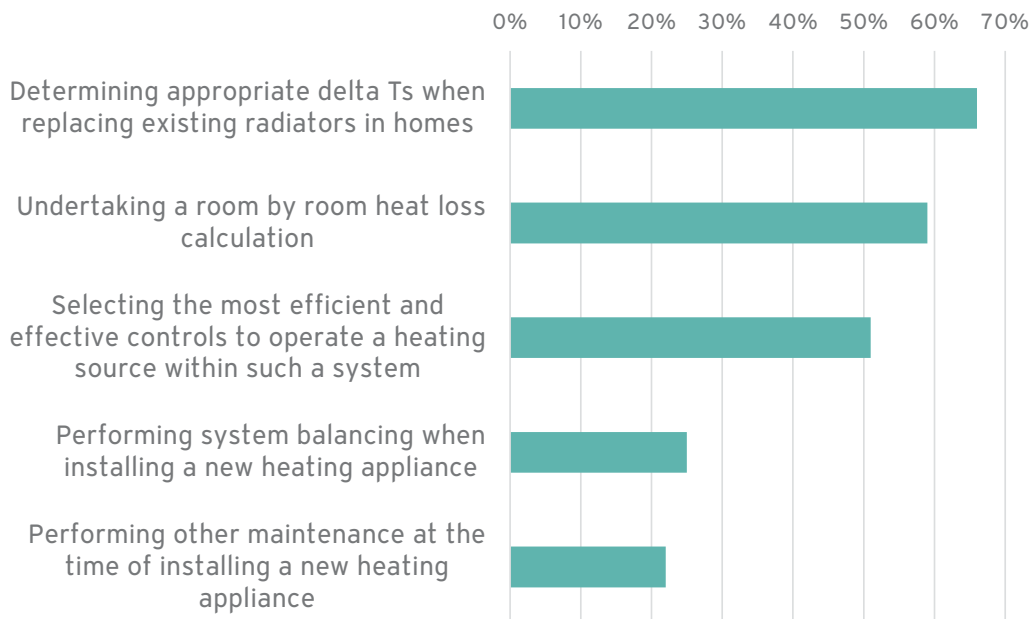
ΔT
Over
60%

needed training for
“Determining appropriate
delta Ts when replacing
existing radiators in homes”

Over
50%

needed training on
undertaking a room-by-room
heat loss calculation

From this, we can ascertain that there is an appetite for installers to continue to re-visit training, to fine-tune their previously learned skills.



Fast-tracking the skills transition



Fast-tracking the skills transition

The need for a highly-skilled workforce ready for the future requires several focus areas, for both Government and the wider industry.

For Government:

1

A cultural shift in attitudes towards training and education is required. The Department for Education should establish a taskforce targeted at school and college leavers to educate them on career opportunities available through becoming a heat pump installer.

2

Consideration of financial support, beyond the Heat Training Grant, to incentivise those wishing to embark on becoming a low carbon installer and covering losses incurred. As highlighted within this report, loss of income is between £251 - £450 per day whilst they undergo training, presents a significant barrier.

3

The Department for Education should conduct a formal review of the available apprenticeships in the net zero space, followed by proposed initiatives to attract new talent to tackle the retrofitting challenge. This will help create long-term, stable regulatory levers to support the development of the heat pump supply chain and delivery of training initiatives.

4

Government should establish a joint Minister for Higher and Further Education between the Department for Education and the Department for Energy Security and Net Zero, to ensure policymaking on training heat pump installers is effectively aligned.

5

Vaillant advocates the development of a 'skills card' to support the overall delivery of safety, performance and quality across the full skillsets required for low temperature heating, heat pump systems and hydrogen boilers of the future. The Government should consult on this, and for all future accreditation to be standardised to make it efficient and consistent to incentivise the workforce.

6

The Government must offer recognition attaining Minimum Technical Competencies (MTC's) as an incentive to installers making the investment in training. Clear recognition of specific regulated or manufacturer courses meeting the MTCs would help provide transparency and clarity to and ensure they gain the necessary competencies.

7

The Department for Education should establish a UCAS-style portal providing guidance and support for installers looking to diversify and SME's looking to recruit.

8

It is essential that the Government highlights a clear technology roadmap, demonstrating the phase out of fossil fuel appliances to encourage existing heating engineers to re-train on low carbon technologies of the future.

9

A consumer awareness campaign must be delivered to clearly communicate affordability of decarbonising heat in homes and enable informed decisions on how they heat their homes.

10

For Industry:

The low carbon heating industry must align on the Minimum Technical Competencies (MTCs) required for a skilled workforce ready for the future, with clear definitions, agreement, and consistent implementation. These MTCs must then be owned, regularly reviewed, and updated by industry via a Government-led taskforce.

11

Industry must help to encourage the shift towards training and education by creating their own incentives, as well as support the delivery of awareness programmes in schools and communities. Industry can highlight that a career as a heat pump installer is a well-paid, high-skilled, secure, and a future-proof choice.



Conclusion

This report has demonstrated the importance of training and upskilling to ensure the UK can meet its decarbonisation targets for home heating and underlines the key barriers installers are faced with as heat pump demand grows, including ongoing consumer awareness and education. From our survey we conclude with the following points;



Overall, we are **encouraged by the latent interest amongst boiler installers** to train in heat pumps.



Out of 1,136 survey respondents, 640, or **56%**, were **initially interested in training**.



64% initially interested remained interested after learning how large a time commitment this training would be for them.



36% of installers surveyed are close to retirement age in the next 15 years. The industry must work together to raise the competencies for a skilled workforce of the future.



“Future-proofing my business” is the strongest motivation behind training and installing heat pumps.



Based on existing skills, training times required ranged between 0 and 9.5 days, with **the most common training time being 6 days**.



Many installers share strong views on Government’s role in scaling-up heat pumps. They believe the Government needs to support, financially, and make it easier for them to train.



There is some willingness to pay for training amongst installers, however likely not enough to cover the full balance. 73% can’t see themselves paying more than £450.



The majority of heat pump installers would prefer either training to be all in-person, or at least a hybrid approach. **This amounted to 95%.**



When it comes to training, the **basic installer skillset could use some fine tuning.** Between 22% and 66% of the total sample stating they would like further training in day-to-day installer tasks.

References

1. Gov.UK, Government 10 Point Plan for a Green Industrial Revolution. Available http://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/936567/10_POINT_PLAN_BOOKLET.pdf
2. Gov.UK, UK enshrines new target in law to slash emissions by 78% by 2035. Available <https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035>
3. Gov.UK, UK becomes first major economy to pass net zero emissions law. Available <https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law>
4. Scottish Government, Scotland to become a net-zero society press release. Available <https://www.gov.scot/news/scotland-to-become-a-net-zero-society/>
5. Vaillant Group estimate based on: The Housing Stock Report - BRE -Trust (2020). Available http://files.bre-group.com/bretrust/The-Housing-Stock-of-the-United-Kingdom_Report_BRETrust.pdf
6. Department for Business, Energy & Industrial Strategy 2019 UK Greenhouse Gas Emissions : final figures - statistical release and summary. Available at: www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2019
7. MCS, MCS Data Dashboard accessed 04.04.23. Available <https://datadashboard.mcscertified.com/Installation-Insights>
8. Gas Safe Register, Gas Safe Register At A Glance 2020-2021. Available <https://www.gassaferegister.co.uk/media/3176/2020-21-gas-safe-register-at-a-glance-report.pdf>
9. Based on Vaillant Group research




Contacts

General enquiries

If you have a general enquiry, our friendly reception staff will happily point you in the right direction.

Phone: **0345 602 2922**



 Heating  Hot water  Renewables

Vaillant Group UK Ltd.

Nottingham Road, Belper, Derbyshire DE56 1JT

Telephone 0345 602 2922

www.vaillant.co.uk/for-installers

info@vaillant.co.uk

Search for VaillantUK on 