



The Heat Pump Charter

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Heating industry charter for heat pump roll out

Foreword

The commitment to achieve Net Zero carbon emissions by 2050 has put the focus back onto domestic heating emissions, given its status as one of the more “difficult” areas to tackle. According to the latest BEIS figures, residential greenhouse gas emissions for 2018 were 69.1 MtCO₂e, representing 15 per cent of overall UK emissions. Whilst that figure is down 14 per cent from the 1990 baseline of 80.1 MtCO₂e, even though the UK population has grown by 20 per cent at the same time, major changes are needed to the UK heating industry.

It is clear that fossil fuels cannot continue to be used to heat homes (except in a very few exceptions), and there are a range of options facing consumers about how their homes will be heated in future.



Stewart Clements
Director
The Heating and Hotwater Industry Council
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Net Zero Pathway

The CCC (May 2019) has modelled a Net Zero pathway that includes large scale installation of heat pumps¹ (the vast majority ASHPs); National Grid's Future Energy Scenarios (July 2019)² highlighted the need for 10 million ASHPs to meet Net Zero and the energy regulator Ofgem in its Decarbonisation Programme Action Plan³, suggested heat pumps will play an increasingly important role in delivering low carbon domestic heat.

The current annual demand for heat pumps is around 30,000 units, so to achieve the levels envisaged, a major ramp up of both demand and supply is essential.



But it is also important to acknowledge that heat pumps deliver domestic warmth in a different manner to that experienced by the 23 million households that currently have a gas boiler for central heating. There have been a number of reports of consumer dissatisfaction with this new technology, including the findings of the Energy Savings Trust field trials. Experience from the field trials conducted by the EST (phase 1 and 2) led to them to conclude that *"Both phases of the trial have shown that the best-performing systems were those deemed to be properly designed and installed."*⁴

Heat pumps are sensitive to design and commissioning, performance improvement is linked to both the technical and behavioural aspects of how heat pump is used. It is therefore vital in trying to protect the consumer; the product; the technology; the heating industry and the ambition to decarbonise heat, that certain minimum standards are applied.

It is also essential that understanding how to control the operation of a heat pump is understood if the consumer is to achieve the best performance from the heating system.

The Heating and Hotwater Industry Council, comprising over 100 companies involved in the heating industry, has produced a “Heat Pump Charter” aimed at ensuring the best consumer experience is obtained when heat pumps are installed, replacing other systems.

The Charter is a starting point; it represents the minimum requirements needed to give consumers confidence that their new heating system will deliver the affordability, warmth and comfort they expect. It is based on existing Department for Business, Energy and Industrial Strategy (BEIS) advice and that of leading experts and advocates of heat pump systems. Over time, it is hoped this Charter will form the basis of Government standards or regulations, but until then, the industry wants to see its adoption become widespread in the UK.

The Heat Pump Charter



The industry supports the view that building fabric needs to be addressed first before a heat pump is installed. Upgrading the fabric to a minimum level ensures that the dwelling heat loss is reduced to a level required by the heat pump to achieve the efficiency and comfort required. In this way, the appliance can be sized and fitted correctly to minimise the initial consumer outlay and maximise the energy savings obtained from lower fuel running costs.



As part of the current Renewable Heat Incentive (RHI), BEIS insist loft insulation (recommended depth is 200mm)⁵ and cavity wall insulation (where applicable)⁶ are fitted, as recommended in the home Energy Performance Certificate EPC, (with only a small number of insulation exemptions)⁷. They do not insist on the same treatment for a non-RHI installation, risking a poor consumer return. According to leading experts and heat pump proponents, badly insulated and draughty homes leak heat in sufficient volume to seriously impinge on the performance of a heat pump.



It is suggested that homes with solid walls and single glazing⁸ should not consider heat pump technologies. There are known issues when designing systems of being overly-cautious when sizing the heat pump capacity. The tendency, if not careful is to oversize appliances, thinking this will provide the best performance of the heat pump. However, this can be detriment of the consumer, with over-sizing again leading to higher up-front purchase costs and lower efficiency gains than would otherwise be expected. It is therefore good practice to undertake a full heat loss calculation prior to installation, as per the requirements of the current RHI.

With the market for heat pumps likely to grow significantly, it is important that consumers have confidence in the safety and performance of the products that will be fitted into their home. Government has recognised the EU's Energy-Related Products Directive (ErP Directive 2009/125/EC), an Eco-Design Directive that applies to most products that consume energy throughout their lifecycle. As part of this ErP compliance Heat Pump products carry a label showing their energy rating for the climate of that country. These products have been tested under conditions that reflect real-life operation, giving consumers confidence that if designed and installed correctly ErP compliance products can deliver the performance and comfort expected. It is important that only heat pumps that comply to the ErP Directive are installed.

The Microgeneration Certification Scheme is a recognised quality assurance scheme that certifies installation companies to help ensure that products are installed to a high standard. Current BEIS qualification for the RHI payment to households requires that all heat pumps need to be fitted by an MCS (or equivalent/successor scheme) certified installer¹⁰. It is important that heat pump installers adopt the existing high standards already set.

Taken together five simple “rules”, that merely adopt current regulation or expert best practice advice, will offer protection to the consumer. They should allow heat pump roll out to be unhindered by adverse customer experience which risks damaging the industry at the point where heat pumps are needed to deliver the future Net Zero commitment.

1. Recognise existing BEIS rules (as per current RHI regulations)¹¹, that all new heat pump installations must first have loft insulation fitted and cavity walls insulated prior to an appliance being fitted.
2. Avoidance of all installations of heat pumps in homes with solid walls unless solid wall insulation is first installed, and assurance that windows have double glazing installed, unless impractical or not possible under Building Regulations, prior to an appliance being fitted.
3. In accordance with existing BEIS best practice, full heat loss calculation conducted prior to all new heat pump installations and correctly sized heat pump installed; heat emitters correctly sized to the new heat pump system flow temperature and upgraded prior to an appliance being fitted.
4. All products installed have a valid ErP label to certify performance and technical compliance.
5. Adoption of existing BEIS rules for product installation, with installers required to be certified to a recognised quality standard, for all new heat pumps being installed.

References

¹ Including hybrid heat pumps

² <http://fes.nationalgrid.com/media/1409/fes-2019.pdf>

³ https://www.ofgem.gov.uk/system/files/docs/2020/02/ofg1190_decarbonisation_action_plan_revised.pdf

⁴ <https://energysavingtrust.org.uk/sites/default/files/reports/TheHeatisOnweb%281%29.pdf>

⁵ According to the English Housing Survey (2017-18) 57% of all dwellings have 150mm or more of loft insulation.

⁶ According to the English Housing Survey (2017-18) 68% of all dwellings with cavity walls have insulation fitted.

⁷ Unless insulation exemption rules are applied and the local authority notified.

⁸ According to the English Housing Survey (2017-18) 91% of all dwellings have at least 80 % double glazing fitted.

The Heating and Hotwater Industry Council (HHIC) is a member organisation committed to using our knowledge and expertise to define practical solutions for decarbonising heat & hot water in UK homes and businesses.

We have been at the heart of the heating industry for over 100 years. Making sure our members are always informed and their interests represented. One voice, united to influence change.

HHIC are a division of the Energy and Utilities Alliance (EUA) which provides a leading industry voice to help shape the future policy direction within the sector.



 www.hhic.org.uk

 01926 513777

 info@hhic.org.uk

 @hhic

The Heating and Hotwater Industry Council
Camden House,
Warwick Rd,
Kenilworth
CV8 1TH