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Business, Energy and Industrial Strategy Committee

Decarbonising heat in homes: Government Response to the Committee's Seventh Report of 2021–22

First Special Report of Session 2022–23

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Business, Energy and Industrial Strategy Committee

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First Special Report

The Business, Energy and Industrial Strategy Committee published its Seventh Report of Session 2021–22, *Decarbonising heat in homes* (HC 1038) on 3 February 2022. The Government response was received on 23 April 2022 and is appended below. The Committee's recommendations are in ***bold*** type, the Government response is in plain type.

Appendix: Government Response

1. ***To successfully decarbonise domestic heating in time to deliver net zero by 2050, the Government must provide clear, strategic direction and guidance. The Government must now focus on providing a coherent policy environment that encourages policy consistency and certainty in the transition to low carbon domestic heat.*** (Paragraph 32)

The Heat and Buildings Strategy outlines our approach over the first half of this decade, which will be focussed on growing supply chains, growing the skills base and creating the right enabling environment for growth in the sector. A long-term framework has been developed which sets out our aim of ensuring as many homes as possible reach EPC C by 2035 where cost-effective, practicable and affordable, alongside our intention to completely transition away from natural gas for heating by phasing out the installation of natural gas boilers from 2035. The Government aims to reduce consumer costs so that, by 2030, low carbon heating systems are no more expensive to buy and run than existing natural gas systems.

In order to fully decarbonise our buildings by 2050 the UK will need to completely transition away from natural gas and fossil fuel heating systems, replacing them with suitable low carbon alternatives. There is no one-size-fits-all solution. The Government is clear that a range of technologies will be needed to decarbonise at scale, including heat pumps, heat networks, and potentially boilers that burn hydrogen as fuel, once the role of hydrogen in heating is established. Because of the uncertainty of the relative role of hydrogen in heating, the objective of the Heat and Buildings Strategy is to set out the near-term policy framework, focussing on low and no regrets action in this decade, whilst setting clear long-term signals where possible, and outlining our approach to strategic decisions on heat by 2026.

The Government agrees with the Select Committee's view on the importance of energy efficiency as a driver for decarbonisation. This is why a "fabric first" approach is being taken, focussing on improving the energy efficiency of buildings where practicable, affordable and cost effective, driving near term carbon savings, making homes warmer and reducing bills.

The Government has been clear that prior to a decision for hydrogen being taken in 2026, our priorities are to continue growing key markets and reducing costs for heat pumps and heat networks, while also improving our evidence base by funding research, development and innovation projects across a range of technology types. Critical trials of hydrogen for heat at a neighbourhood and village scale will take place in 2023 and 2025 respectively.

2. ***We call on Ministers to publish a heat technology road map, produced in partnership with chief technologists from industry partners, to clearly set out the development, scale up and integration milestones of different low carbon heating technologies, and the associated interventions, such as energy efficiency upgrades, and initiatives required to hit our heating targets in the UK. This should be published by September 2022.*** (Paragraph 33)

The Government has a clear plan for our major clean heat technologies and is continuing to develop a long-term plan for deploying these measures at scale, of which the Heat and Buildings Strategy represents a significant first step. We are working towards making strategic decisions on the role for hydrogen in our heat system by 2026, through comprehensive research, development and unique large-scale hydrogen trials. We will clearly communicate the implications for consumers and industry from the relative roles for electrification and hydrogen.

A range of policies will support our target of 600000 heat pumps annually by 2028, including the Future Homes Standard making homes zero-carbon ready and schemes like the £450 million Boiler Upgrade Scheme incentivising the market. We will evaluate the need for further policy after the 2026 strategic decision on hydrogen. On Heat Networks our transformation programme includes introducing heat network zoning by 2025 to increase deployment and reduce risk, supporting the significant growth of the market needed through the Heat Networks Investment Project and Green Heat Network Fund.

The Heat and Buildings Strategy and the Hydrogen Strategy will be followed by an investment strategy, that will highlight the needs of technology market development, and our plan for supporting growth. Formal consultations alongside extensive stakeholder engagement will help test the Government's approach to growing the heat pump and heat networks markets. For example, through the Net Zero Buildings Council, Ministers are working with industry leaders to develop solutions to the key issues on the path to decarbonising heat. The Government will set out the approach to these strategic decisions in due course.

3. ***Whilst the introduction of the Heat Network (Metering and Billing) Regulations has helped, we call on Ministers to urgently give Ofgem the mandate and resources to expand and enforce consumer protections in the heat network market, recognising the often monopoly status of some providers in certain areas of the country.*** (Paragraph 45)

Government is committed to legislating to implement heat networks regulation within this Parliament and will do so at the earliest possible opportunity.

In December, we published the Government response to the Heat Networks Market Framework consultation which sets out our proposals for regulation. We announced that we will appoint Ofgem as the heat networks regulator for Great Britain. In this role, Ofgem will be responsible for enforcing consumer protection rules which will ensure heat network consumers receive a fair price, reliable supply of heat and transparency of information.

Under the regulatory framework, the BEIS Secretary of State will be given powers to introduce a price cap to the market in the future to protect consumers. Regulation will also give Ofgem powers to investigate and intervene on networks where prices for consumers

appear to be disproportionate compared with systems with similar characteristics, or if prices are significantly higher than those consumers would expect to pay if they were served by an alternative and comparable heating system.

Finally, Ofgem will be given powers to set rules requiring heat networks to publicly disclose sufficient information for the consumer to understand how much they are paying, including but not limited to, their fixed charges, tariffs, and unit rates, and provide clear explanations about how prices are set and how heat network consumers are billed.

4. ***We recommend that the Government consider the Scottish Government's approach of legislation for heat networks. If Ministers disagree with the approach taken in Scotland, an explanation in response to this report is required.*** (Paragraph 46)

Whilst legislating for heat is devolved to Scotland, consumer protection for heat networks is a reserved matter across Great Britain. The Heat Networks Market Framework (HNMF) will therefore introduce consumer protection rules in England, Scotland and Wales, and Ofgem will enforce these rules. We are working closely with the Scottish Government to develop consumer protection rules which ensure heat network consumers across Great Britain receive adequate levels of protection. In its Draft Heat Networks Delivery Plan, the Scottish Government also stated its preference for Ofgem being the regulator under the Heat Networks (Scotland) Act 2021.

Our broad approach to regulating heat networks has been developed in close consultation with the Scottish Government and is very similar to the Scottish Government's approach, however, the main difference in the regimes relates to our approach to heat network zoning. In Scotland, legislation requires each scheme to receive individual consent from a central body before it is allowed to develop. We are looking at a different approach for zoning in England, where local authority decisions are more central to heat network development. This flexible approach is more appropriate since the larger potential for heat network development in England means it would be less feasible for one body to approve the development of each project. We are working closely with Scottish Government to share lessons on the development of zoning policies in both countries.

5. ***We recommend that the Government publish annual statistics about the use of heat networks on its website.*** (Paragraph 47)

Government supports the growth of the UK heat networks market as a crucial part of the UK's heat decarbonisation journey. The provision of accurate market information is essential for developers and other partners within the heat networks supply chain.

Since April 2021, BEIS has published the Heat Networks Planning Database (HNPD), which provides a picture of both district and communal heat network deployment across the UK. This enables:

- Increased pipeline visibility of projects in the planning stage, especially those which do not receive Government funding
- Better insight into the deployment of different technology types and heat sources being used to decarbonise heat networks
- Greater clarity over upcoming projects and emerging trends

Data sourced from planning applications and developers is updated during the month following the end of each quarter. It includes new applications from Q4 2020 and updates to previously submitted applications. The latest release includes new projects and updates until December 2021.

Under our forthcoming regulatory framework, all heat networks will be required to notify Ofgem with key details about their location, size and the nature of their operation. Based on this new dataset, there will be regular reports from the regulator on heat networks, which will bring a new level of data and insight to the sector.

6. ***To minimise expensive retrofit costs, the Government should bring forward the implementation of the Future Homes Standard to 2023 instead of 2025.*** (Paragraph 54)

The current timeline of the Future Homes Standard (FHS) delivers on our Net Zero commitments, while ensuring that new, good quality, warm homes are delivered in sufficient numbers in the places that need them. The Government has listened to calls for a swifter and more certain pathway to 2025 and have accelerated work on a full technical specification for the FHS. The intention is to launch a full consultation in 2023 and to introduce the necessary legislation in 2024, ahead of full implementation of the FHS in 2025.

However, the Government is not waiting until 2025 to act. In December 2021, our uplift in energy efficiency standards began delivering meaningful reductions in carbon emissions and will provide a stepping-stone to the FHS in 2025. Once the uplift comes into force, in June 2022, new homes will be expected to produce around 30% less CO2 emissions compared to the previous 2013 standards. This will deliver high-quality homes that are in line with broader housing commitments and will encourage homes that are future-proofed for the longer-term.

The Government is aware that some homebuilders are already building to fabric standards above the current Building Regulations and/or installing low carbon heating systems, but it is important that all parts of industry are ready to build homes that are fit for a zero-carbon future.

To comply with the FHS, industry will need to develop the necessary supply chains, skills and construction practices to consistently deliver high quality homes that incorporate low carbon heat and high levels of energy efficiency. In practice, that will mean ensuring that all developers are ready to build to higher fabric specifications and that enough heat pumps and trained installers are available, as we expect heat pumps to become the primary heating technology for new homes.

7. ***We also call on Ministers to set out, in response to this report, what measures are being considered to assist tenants who rent their homes in managing the transition to low carbon heating with their landlords; and what support might be put in place for housing associations and equivalent social housing providers with the costs of retrofitting newly built houses heated by gas boilers.*** (Paragraph 55)

The Government will continue to make the case for moving quickly to Net Zero and expects social housing landlords to help tenants to understand why works are required to their homes and the benefits of the transition. The Heat and Buildings Strategy commits

to considering a long-term regulatory standard to improve social housing to EPC band C, alongside measures to decarbonise the housing stock in line with emissions targets. The Government will consult the sector before setting any regulatory standard.

To ensure a fair transition, funding is being targeted to support low income and fuel poor households, social housing tenants, and vulnerable consumers. The 2019 Conservative Manifesto committed to a £3.8 billion Social Housing Decarbonisation Fund (SHDF) over a 10-year period to improve the energy performance of social rented homes, on the pathway to Net Zero. The SHDF will upgrade a significant amount of the social housing stock currently below EPC C up to that standard, delivering warm, energy-efficient homes, reducing carbon emissions and fuel bills, tackling fuel poverty, and supporting green jobs.

Just over £1 billion of funding has already been committed to the SHDF and associated demonstrator, representing a significant investment that will drive the decarbonisation agenda across this important sector. BEIS will build on this success by seeking to secure further funding in subsequent spending reviews.

An initial £152 million of funding was granted in 2021/22 for the first phase of the Home Upgrade Grant (HUG) scheme, alongside a £287 million third tranche of Local Authority Delivery (LAD) funding, as part of the Sustainable Warmth competition. These schemes will support energy efficiency and low carbon heat upgrades to low-income households living in the least energy efficient homes. This support is available to homeowners and private landlords, with the latter required to provide at least a third of the upgrade cost. On 21st February 2022, the Government announced a further £67 million offered to successful local authorities to supplement funding under HUG phase one. Delivery will take place during the financial year 2022/23.

8. ***We recommend that in the context of the phasing out of gas boilers, the Government adopts a clear and specific end-date by regulating through legislation the phase out of gas boilers. We also recommend that the Government sets out its plan on how it expects the industry and consumers to phase out the installation and use of gas boilers by 2035.*** (Paragraph 61)

The Government recognises the need for a clear pathway to phase out fossil fuel heating systems from our buildings, balancing market certainty with consumer choice and flexibility. The Heat and Buildings Strategy was explicit about our intention that, by 2035 at the latest, we will no longer install new natural gas boilers (and only install hydrogen-ready appliances where there is confidence that low carbon hydrogen will be supplied). Natural market trigger points will be used, minimising disruption and enabling consumers to gradually transition toward low carbon heating systems. Once costs have come down and consumer choices are clear, the Government will seek to regulate in this sector.

We can learn significant lessons from the UK's gradual transition from petrol and diesel vehicles to low carbon transport. By giving consumers time to adjust to new technology, and by giving markets a clear direction of travel, barriers have been reduced and costs have come down. The Government expects a similar transition towards low-carbon heat and has set out plans to use policy, funding and innovation to drive the cost of heat pumps towards parity with fossil fuel systems and test the feasibility of hydrogen and hydrogen ready boilers.

9. ***We recommend that a plan is put in place for off gas grid properties. Electrification is the only option for these properties and any programme should be undertaken in conjunction with energy efficiency measures. Such an approach will assist a cohort more likely to be fuel poor.*** (Paragraph 68)

The Government is committed to phasing out the installation of high-carbon fossil fuel heating in buildings currently off the gas grid during the 2020s. Acting early on these buildings is a no regret option, as they often use the highest carbon fuels and there is no strategic hydrogen option for them. Electrification of heat will be the primary technology of choice for these properties as it is the only pathway to Net Zero proven to work at scale across a broad spectrum of buildings. We envisage other available low carbon heating solutions to be deployed in a small number of off-gas grid buildings where heat cannot be decarbonised through electrification.

However, change must happen at a pace that meets our Net Zero obligations and works for industry and consumers, taking into account availability of supply and affordability. Our approach focuses on kickstarting the market through initial targeted financial measures before introducing regulations to continue growing the market.

Air source heat pumps - our lead technology for decarbonising heat in off gas grid homes - currently cost off gas grid households £12000 on average to install, which is £8000 more than equivalent fossil fuel systems. Evidence from other countries and our engagement with industry suggests that mass deployment of heat pumps in the UK should lead to significant cost reductions due to economies of scale and reduced overheads. The Heat and Buildings Strategy sets an ambition to work with industry to reduce the upfront costs of heat pumps by 25–50% by 2025 and to parity with boilers by 2030.

Many households will find these costs prohibitive and for this reason the Government has been acting to bridge the gap by providing support through a range of funding schemes such as the Domestic Renewable Heat Incentive, the Boiler Upgrade Scheme and the Home Upgrade Grant. These funded measures will play a critical role in supporting early heat pump deployment growth and reducing costs for households. The Government recognises that regulation, as part of a long-term policy framework, will be needed to fully decarbonise off-grid properties while ensuring that the transition to clean heat will be fair and equitable for households, businesses and communities.

In October 2021 the Government consulted on new regulations that would phase out the installation of fossil fuel heating systems in homes and non-domestic properties off the gas grid from 2026 (and from 2024 for non-domestic buildings over 1000m2), as part of a full package of measures that will grow the heat pump market to 600000 installations a year by 2028. The Consultation outlined the intention to review the market conditions and affordability ahead of implementing the proposed regulations and to consider whether further action will be needed to enable the transition to clean heat in those properties. Analysis of the consultation responses is ongoing and a response will be published later this year.

10. ***We ask the Government to set out in response to this report the intended milestones and targets it has in place to ensure that the UK meets its 2028 target and what funding it will put in place to ensure that each of these milestones is met. The Government must outline what contingencies it has in place to make sure that the heat pump target***

is fulfilled. The Government must have integrated and coherent policies, such as an effective energy efficiency programme that complements and aligns with the target of 600,000 heat pump installations per year by 2028. (Paragraph 69)

The Heat and Buildings strategy (HBS) summarises the range of measures we are taking to ensure the market is in place to deliver on our ambition of 600000 annual heat pump installations by 2028. These include a mixture of financial support, market intervention and regulations, which have been designed to complement each other. The timing of these interventions will enable progressive and swift development of the heat pump market towards the required level.

The interventions include:

- The launch of the £450 million Boiler Upgrade Scheme in 2022
- The introduction of the market mechanism for low carbon heating – the Government has consulted on the introduction of this policy from 2024
- The introduction of the Future Homes Standard from 2025
- Action to phase out the replacement of fossil fuel systems off the gas grid – the Government has consulted on the introduction of this policy from 2026 for domestic buildings

While the Government has not set any interim targets on the way to 600000 installations per year by 2028, these interventions will support the growth of the heat pump market and will be further strengthened by strong complementary action to improve the energy efficiency of homes and buildings. The Government has set a target to get as many homes as possible to EPC C by 2035, where practical, cost-effective and affordable. This targeted action across tenure types will help ensure as many homes as possible are ready for the move to low carbon heating.

11. ***To ensure that the UK does not fall off course in achieving its targets for carbon emissions reductions, we recommend that the Government works with industry to consider how the Climate Change Committee's advice to deliver 900,000 heat pumps a year by 2028 can be achieved.*** (Paragraph 70)

The Government has set out its ambition for the market to grow to 600000 heat pump installations a year in the UK by 2028. This level is consistent with delivering against carbon budget commitments and is sufficient to allow for further ramp-up of heat pump deployment between 2028 and 2035 in a 'high-electrification' pathway to Net Zero, in which hydrogen plays no role in decarbonisation of heating. It is also the minimum level of heat pump deployment needed to meet a high hydrogen pathway.

Extensive work with industry has helped to assess the capacity of heat pump supply chains to meet future UK heat pump demand. The Heat Pump Manufacturing Supply Chain Research Project concluded that domestic production could be ramped up to meet demand and could reach at least 630000 heat pumps a year by 2030.

Continued engagement with industry will help to increase investments in the UK to drive up domestic manufacturing. There have already been significant investments by manufacturers and the Government will seek to build this further so the UK can maximise the opportunities arising from growth in the heat pump market.

12. ***We further recommend that the Government should convene the retail banking sector to encourage and facilitate low-cost and innovative lending products for consumers, and that public funds are used most widely in supporting lower income families with appropriate grants.*** (Paragraph 71)

Catalysing the market for Green Finance is a priority for Government to help support non-fuel poor homeowners who are ineligible for grants to cover the upfront costs of energy efficiency retrofits and improvements.

The £1.8 million Green Home Finance Innovation Fund (GHFIF), which launched in 2020 and will complete by March 2022, was a key early step in supporting the retail banking sector to design, develop and pilot innovative green mortgage products and services for homeowners.

As announced in the Net Zero Strategy, the GHFIF will be followed this year by a Green Home Finance Accelerator Programme, focussed on supporting the development of non-mortgage based green finance products, enabling a diverse range of homeowners to decarbonise their homes and improve thermal comfort. This could include unsecured concessional green finance and green equity release for homeowners who own without a mortgage, and green lending products for buy-to-let landlords. As with the GHFIF, our expectation is that this work will provide examples and case studies to galvanise the wider market. The Accelerator will formally launch in late Spring 2022. The recent British Energy Security Strategy announced a doubling of funding for the Accelerator from £10 million to £20 million.

Alongside this, in November 2020 the Government consulted on ways to incentivise mortgage lenders in England and Wales to support homeowners to improve their home energy performance. The proposals included requirements for lenders to disclose information on the energy performance of their portfolios, as well as encouraging them to sign up to an improvement style target. These proposals intend to spur the development of attractive and affordable financing options. Close engagement with the lending industry throughout the consultation process has helped to identify a clear set of policy options. The Government will publish the response to the consultation in due course.

Finally, the Government is working with the new UK Infrastructure Bank to explore whether they can play a wider role in scaling up green home finance in the future.

13. ***The Government must set out a clear, long term plan as to how the current rate of installations will be increased in order to scale up the market.*** (Paragraph 74)

The Heat and Buildings strategy outlines the measures being taken to ensure the market is in place to deliver on the ambition of 600000 annual heat pump installations by 2028. This includes a mixture of financial support, market intervention and regulations, which have been designed to complement each other. The timing of these interventions will enable the heat pump market to develop towards the required level.

In addition to these policies, the Government is working with industry to ensure the enabling conditions are right to support this growth. For example, the Heat Pump Ready Innovation Programme is receiving investment of £60 million to support coordinated deployment of heat pumps and find technical solutions to reduce costs.

The Government is also working to ensure that appropriate high-quality training is available, both for new entrants to the sector and existing heating installers who do not have heat pump experience. This includes coordinated action through the BEIS-led Electrification of Heat Task Group, which is focussed on removing barriers to heat pump deployment at scale. BEIS will continue to work with industry and trade unions to deliver the priority actions identified by this group.

14. ***The Government must expand the market-based mechanism as well as explore other options to catalyse the development and scaling up of the heat pump market.*** (Paragraph 75)

The market-based mechanism is a core part of the Government's intended policy framework for supporting the development and scale-up of the UK heat pump market. It will provide the heating industry with a durable, market-wide framework and incentive to invest with confidence in developing the consumer proposition for heat pumps in the UK. In so doing, it will allow the market to discover what works to make heat pumps an increasingly attractive choice for an increasing number and diversity of consumers.

The Government has recently concluded an initial policy consultation on proposals for the market-based mechanism. The consultation responses are currently being analysed and we will publish a response in due course. We also intend to consult further on more detailed proposals for the scheme.

The Committee's report discusses the illustrative 2028 target of 400000 heat pump installations in the Impact Assessment that accompanied the October 2021 consultation on the policy. This represents an estimate of total retrofit installations (i.e. those in pre-existing properties) across all tenure types. The combined obligations on those in scope of the market-based mechanism, taken together with the impact of other retrofit policy measures and the impact of the Future Homes Standard, are designed to deliver the Government's full ambition for the heat pump market of 600000 annual installations by 2028.

15. ***We recommend that the Government introduce a heat decarbonisation sector deal by 2023 so that there may be a heightened focus on scaling up low carbon heating markets and reducing costs.*** (Paragraph 80)

The Government is committed to working with industry to rapidly scale up the heat pump supply chain and to reduce the costs of deploying heat pumps. As announced in the British Energy Security Strategy, the Government will run a Heat Pump Investment Accelerator Competition in 2022 worth up to £30 million. The scheme will help ramp up the domestic manufacture of heat pumps, helping to bring down costs and speed up the transition away from fossil fuels such as oil and gas.

In November 2020, we published the findings of the Heat Pump Manufacturing Supply Chain Research Project which aimed to determine whether the supply chain could ramp up to meet demand, and what more could be done to attract inward investment in UK

manufacturing. Through market engagement and economic modelling, the project concluded that domestic manufacture of hydronic heat pumps could increase from 11000 today to 635000 by 2030.

Since the publication of the report, Government officials have been engaging extensively with heating appliance manufacturers to support development of their business plans and point them towards funding and tax incentives that could help bring investment in heat pump manufacturing and high skilled jobs to the UK. This has already yielded commitments from companies like Vaillant and Ideal, both of which intend to start manufacturing heat pumps in the UK. We expect other heating appliance manufacturers will follow suit over the coming years.

All our policies are aimed at growing the market for heat pumps and achieving economies of scale, and we expect costs will naturally fall as the market grows. We have recently commissioned further research to determine how we can achieve aggressive cost reduction in heat pumps and will be working closely with industry to agree further actions to achieve this aim.

16. ***The Government must urgently develop a low carbon heating training programme, in partnership with industry and trade unions. The training programme should align with the Government's own target to deploy 600,000 heat pumps by 2028 and the plans it has to deliver on this goal. The Government must support and collaborate with industry and trade unions early in development of this training. It should also work with industry and trade unions to develop a low carbon heating technician apprenticeship to encourage young people to enter the sector.*** (Paragraph 91)

The Government is working closely with industry to ensure that appropriate high-quality training is available, both for new entrants to the sector and existing heating installers who do not have heat pump experience. This includes coordinated action through the BEIS-led Electrification of Heat Task Group, which is focussed on removing barriers to heat pump deployment at scale. BEIS will continue to work with industry and trade unions to deliver the priority actions identified by this group.

By Spring 2022, we will establish the Green Jobs Delivery Group, a commitment in the Net Zero Strategy (NZS), to be the central forum through which government, industry and other key stakeholders work together to ensure that the UK has the workforce needed to deliver a green industrial revolution. The Group will include Ministerial representation and will be co-chaired by an industry representative.

With regards to existing heating engineers, the Heat Pump Association launched a new upskilling course in 2021 which can be completed in under a week. Industry has capacity to upskill over 7000 heating installers per year to install heat pumps. This is sufficient to ensure there are enough installers to meet our 2028 deployment target, if training is taken up.

In September 2020, the Government also launched a £6 million skills competition which provided nearly 7000 training opportunities for the energy efficiency and low carbon heating supply chains, including training for heat pump installers.

The Heat & Buildings Strategy has also given industry further confidence to invest in training capacity. For example, Octopus Energy is investing £10 million in a new training centre in Slough and Ideal Heating has announced a new £1 million training centre will open near Hull in Spring 2022.

In January 2022, British Gas announced that they will start offering heat pumps to their customers and have been training their heating engineers accordingly. Centrica, the parent company of British Gas, operating under the brand PH Jones, already installs heat pumps in social housing and aims to install 1000 heat pumps in homes this year.

In addition to upskilling the existing workforce, it will also be crucial to ensure that new workers can join this growing sector. The Government is updating the existing apprenticeship framework for heating and plumbing to ensure it offers the right skills. This includes ensuring that all heating apprentices have the core skills needed for low carbon heating, and that young people are able to access the high-paid, high-skilled jobs that will set the UK on a pathway to Net Zero.

17. ***At present there is no company that operates as a "one stop shop" where customers can procure all the services required for a successful retrofit installation and change to a low carbon heating system. Consideration should be given to project management upskilling with regards to whole system and energy efficiency installations to make it easier for people to be able to convert to low carbon heating systems.*** (Paragraph 92)

Companies are able to provide a complete home retrofit including both energy efficiency measures and installation of a new low carbon heating system, the Government believes that consumer demand for this sort of approach will grow in the future. Installations completed through government-endorsed energy efficiency schemes must be completed under the PAS (Publicly Available Specification) standards which drive the requirement for a 'whole house' approach as a way to drive sustainability in the built environment. This framework supports a whole house approach to retrofit, that considers which measures are appropriate for the property, in what order, and with any necessary remedial works. These standards were developed by an industry-led steering group in response to the recommendations of the independent 2016 Each Home Counts Review and were designed to improve both quality and consumer protection.

As well as sponsoring and implementing several requirements to ensure installations are of the highest quality, the Government also recognises the need to support the home retrofit supply chain. In September 2020 a £6 million skills competition was launched, which provided nearly 7000 training opportunities for the energy efficiency and low carbon heating supply chains, including training for heat pump installers.

The Government is currently reviewing our consumer advice offer. By investing in improvements to the Simple Energy Advice tool and developing a new heat pump options calculator, we will help consumers better understand and identify opportunities to reduce their carbon emissions by installing energy efficiency and low carbon heating solutions. As set out in the Energy Security Strategy, by summer we will launch a comprehensive energy advice service on GOV.UK.

18. ***In addition to working with industry and trade unions, we recommend that the Government works closely with local and regional authorities in England allowing local leaders to deliver coherent services to their populations, for example through the regional delivery of the adult skills budget and promote the connection between net zero policies and 'green job' creation.*** (Paragraph 93)

The Government is investing £550 million to significantly expand Skills Bootcamps, which provide adults in England with in-demand skills in a range of areas, including green skills.

Invitation to tender for the delivery of the next wave of Skills Bootcamps closed on 28th February 2022. Following a period of assessment an announcement will be made detailing the list of successful suppliers who will be awarded contracts to deliver this training. The Government is working closely with Mayoral Combined Authorities, Local Enterprise Partnerships and Local Authorities to ensure that Skills Bootcamps deliver against local skills priorities training is widely available to meet skills needs across the country.

Finally, work is ongoing alongside local authorities, devolved administrations, and energy hubs to ensure that training is available and supported across the UK and will engage with Local Skills Improvement Plans in future.

19. ***We call on the Government to prioritise the development and launch of a replacement for the Green Homes Grant, delivered locally through regional and local government in England instead of centrally by the Department. Ministers should provide an update on this work in response to this report.*** (Paragraph 105)

The Green Homes Grant Voucher Scheme (GHGVS) did not deliver at the rate and scale the Government originally hoped for and faced significant delivery challenges. After reviewing the efficacy of the scheme, it was closed to new applications on 31st March 2021. In order to ensure the effective management of the end of the scheme, it was fully closed on 30th November 2021, and this was communicated to voucher holders and installers.

Local authorities are currently delivering a package of support in England including the first and second phases of the Local Authority Delivery (LAD) Scheme, worth £500 million. For 2022/23, government granted an initial £152 million in funding for the first phase of the Home Upgrade Grants (HUG) Scheme, alongside the £287 million third phase of LAD, as part of the Sustainable Warmth competition. On 21st February 2022, the Government announced a further £67 million offered to successful local authorities to supplement funding under HUG phase one. These schemes will support energy efficiency and low-carbon heat upgrades to low-income households living in the least energy efficient homes.

The Heat and Buildings Strategy sets out our plans to transform heat and buildings over the next decade. This includes continuing local authority delivery by increased funding for the Social Housing Decarbonisation Fund (investing a further £800 million over 2022/23 to 2024/25) and HUG (investing £950 million over 2022/23 to 2024/25). Both schemes aim to improve the energy performance of low-income households, support low carbon heat installations, help to reduce fuel poverty and build the green retrofitting sector to benefit all homeowners. Government will continue to ensure financial support is targeted to those who need it most, supporting the most vulnerable in society in switching to low carbon heating and improving the energy efficiency of their homes.

20. ***To ensure the success of the scheme, we recommend that in the delivery of the scheme, the Government must:***

(1) ***explain what lessons have been learnt from various failed past schemes and how this scheme will therefore be delivered differently,***

(2) ***focus public funds on lower income households and homes which will require the most expensive and/or complicated installations to decarbonise. This will require a fundamental rethink on the support packages currently available. The boiler replacement grants of £5,000 or £6,000 will mean lower income households cannot switch to low carbon heating, when the overall cost may be as high as £15–20,000.***

(3) ***incentivise banks to create low-cost loan products for consumers,***

(4) ***partner with industry and trade unions to create jobs and training pathways, and***

(5) ***ensure the scheme lasts for at least a decade instead of merely a few years.***

Explain what lessons have been learnt from various failed past schemes and how this scheme will therefore be delivered differently. (Paragraph 112)

The design of the Boiler Upgrade Scheme (BUS) has been heavily informed by scrutiny of the Green Homes Grant Scheme. The targeted scope of the scheme, flat rate grant and installer-led application will all contribute to a simpler and more effective policy that is easier for customers to understand. Ofgem, the scheme administrator, have extensive experience of delivering schemes on behalf of the Government, such as the Domestic Renewable Heat Incentive.

The policy was originally consulted on in 2020 and industry have been provided with early sight of the scheme requirements through the publication of the government response in October 2021 and draft statutory instrument in December 2021. Monitoring plans are in place to ensure that any issues with delivery of the BUS are identified at an early stage and can be acted upon.

Focus public funds on lower income households and homes which will require the most expensive and/or complicated installations to decarbonise. This will require a fundamental rethink on the support packages currently available. The boiler replacement grants of £5,000 or £6,000 will mean lower income households cannot switch to low carbon heating, when the overall cost may be as high as £15000–£20,000.

The Boiler Upgrade Scheme is targeted at growing demand for low-carbon heating within the owner-occupier segment of the market ahead of the introduction of regulations and market-based approaches later in the decade. The Government is providing financial support to lower income households through a range of other schemes, including Home Upgrade Grant and Social Housing Decarbonisation Fund.

The Home Upgrade Grant will provide energy efficiency upgrades and low carbon heating to low-income households living off the gas grid in England to tackle fuel poverty and

support the net zero commitment. The government has allocated a total of £1.1 billion to the scheme, which will run from early 2022 to March 2025. Eligible low-income households will not have to pay anything towards the upgrades.

The Social Housing Decarbonisation Fund (SHDF) will upgrade a significant amount of the social housing stock currently below EPC C up to that standard, delivering warm, energy-efficient homes, reducing carbon emissions and fuel bills, tackling fuel poverty, and supporting green jobs. Low carbon heat installations may be installed through the SHDF where these are in alignment with the objectives of the scheme. In the Heat and Buildings Strategy and Net Zero Strategy, it was announced that £800 million has been committed for the Social Housing Decarbonisation Fund as part of the 2021 Spending Review process.

Incentivise banks to create low-cost loan products for consumers

Catalysing the market for green finance is a priority for the Government to help support and encourage homeowners to access affordable, low-cost finance for home energy performance improvements. A consultation was published in November 2020 on the role mortgage lenders can play in supporting homeowners to improve their energy performance. In addition to this, £10 million has been made available through a Green Finance Accelerator Programme to support the development of innovative green finance products to incentivise action in the owner-occupied sector. We announced a doubling of this funding to £20 million in the Energy Security Strategy.

The number of green finance products on the market is increasing, with the release of almost thirty green mortgage products in the last two years. This will create extra financing opportunities to support the Boiler Upgrade Scheme. For example, there is potential for lenders to offer additional borrowing to top up grants.

Partner with industry and trade unions to create jobs and training pathways

The Government is working with industry and trade unions to ensure that appropriate high-quality training is available, both for new entrants to the sector and existing heating installers who do not have heat pump experience. The implementation of the Green Jobs Delivery Group, a commitment in the Net Zero Strategy, will bring together industry and other key stakeholders to ensure the UK has the workforce needed to deliver a green industrial revolution. The Group will include Ministerial representation and will be co-chaired by an industry representative.

Focusing more specifically on heat pumps, BEIS also convenes the Electrification of Heat Task Group, a joint initiative between Government, industry and civil society organisations. This Task Group has developed a skills action plan and BEIS will continue to work with industry and trade unions to deliver the actions it sets out. In August 2021, the Heat Pump Association launched a new upskilling course for existing heating engineers which can be completed in under a week.

In September 2020, the Government spent £6 million on a skills training competition which provided nearly 7000 training opportunities for the energy efficiency and low carbon heating supply chains.

Industry has capacity to upskill over 7000 heating installers per year to install heat pumps. This is sufficient to ensure there are enough installers to meet our 2028 deployment target, if training is taken up. Industry is also investing in additional training capacity. For example, Octopus Energy is investing £10 million in a new training centre in Slough and Ideal Energy have announced a new £1 million training centre will open near Hull in Spring 2022.

The Government is updating the existing apprenticeship framework for heating and plumbing to ensure this offers the right skills to deliver Net Zero. This includes ensuring that all heating apprentices have the core skills needed for low carbon heating, and that young people are able to access the high-paid, high-skilled jobs that will set us on a pathway to Net Zero.

Ensure the scheme lasts for at least a decade instead of merely a few years

The 2021 Spending Review confirmed £450 million funding for the Boiler Upgrade Scheme over three years (2022 to 2025). Any funding beyond this date will be a matter for future fiscal events. The scheme is part of a wider package of support and policies outlined in the Heat and Buildings Strategy, which will increase deployment and supply chain growth while driving down costs ahead of the planned introduction of regulations and market-based mechanisms later in the decade. This will support the Government's ambition to reach 600000 heat pump installations per year by 2028. BEIS will continue to consider the future role of government subsidy in supporting the transition away from fossil fuel heating.

21. ***We recommend that the Government reapportions environmental levies to improve the financial attractiveness of electrified heat and to encourage the uptake of electrified low carbon heating systems incrementally over several years. The levies should reflect the relative carbon emissions of gas and electricity. We further recommend that this reapportioning must be accompanied by mitigating negative impacts on the fuel poor and vulnerable consumers, for example through targeted financial support programmes focusing on fuel poor households.*** (Paragraph 124)

Government recognises that current pricing of electricity and gas does not incentivise consumers to make green choices, such as switching from gas boilers to electric heat pumps. We are committed to keeping costs fair and affordable for industry and consumers, and working to identify how costs can be allocated in a way which incentivises consumers to make green choices.

As set out in the Heat and Buildings Strategy, we want to reduce electricity costs and are looking at options to shift or rebalance energy levies and obligations (such as the Renewables Obligation, Feed-in-Tariffs and Energy Company Obligation) away from electricity over this decade. This will include looking at options to expand carbon pricing and remove costs from electricity bills.

As set out in the Energy Security Strategy we will publish our proposals on how to do so in 2022, considering overall system impacts and limiting the impact on bills, particularly for low-income consumers. Financial support is currently available to low income and vulnerable households through the Warm Home Discount, Winter Fuel Payment and Cold Weather Payment. We continue to review additional costs and how best to support fuel poor households during the transition to Net Zero. In addition to these targeted

schemes, the Chancellor recently announced a £9.1 billion package of support to help over 28 million households with the costs of rising energy bills. To help spread the cost of this year's energy price shock over time, from October 2022 the Energy Bills Support Scheme will reduce all domestic electricity customers' bills by £200. This will subsequently be recouped through energy bills over five years from 2023/24.

22. ***We call on Ministers to mandate the Committee on Fuel Poverty to monitor and report annually on the transition costs on fuel poor households.*** (Paragraph 125)

The Committee on Fuel Poverty is an advisory non-departmental public body. As an arm's length body, sponsored by the Department for Business, Energy & Industrial Strategy, it is not directed by the Government and provides independent advice on the effectiveness of policies aimed at reducing fuel poverty. Ministers cannot mandate the actions of the Committee but will continue to work closely with them.

23. ***The Government should establish a national consumer awareness campaign that, as a minimum, informs the public on why the decarbonisation of heat is needed, what low carbon heating solutions are available and the changes that consumers may have to make in their homes to install low carbon heating. The Government should require energy suppliers to send this information to households alongside their energy bills.*** (Paragraph 141)

The Government agrees with the Committee's recognition that further action is needed to increase consumer awareness in this area, the key technologies and interventions involved, and the priority actions to take through a blend of Government-led and industry-led advice.

Strengthening Net Zero communications and increasing awareness will help all sections of UK society to make greener choices. Progress has already been made to raise public awareness and interest – according to a recent survey, a significant proportion of people are concerned about climate change (85% of respondents to BEIS' Public Attitudes Tracker – Autumn 2021). This has been supported by the 'Together for our Planet' campaign to build green momentum in the lead-up to COP26 alongside recent publications, strategies and media coverage. Work is underway to develop and test a strategy for climate change communications post-COP26.

The Government is looking to enhance our communication channels to ensure that the public has access to the information and advice they need to make decisions that are right for them. Increased investment into the digital service, Simple Energy Advice, will help provide consumers with information and advice on home energy performance and low carbon heating. Energy suppliers currently provide the telephone number of the Simple Energy Advice phoneline to households on their energy bills.

Supplier requirements can help consumers to see the interaction between their energy source and carbon emissions, and how changing energy use can drive down costs. For example, the fuel mix disclosure Standard Licence Condition on information for consumers requires suppliers to include data relating to a tariff's fuel mix and its environmental impact on at least one bill for every financial year, and on all promotional materials sent to customers. Additionally, suppliers are obliged to offer an In-Home Display to all domestic consumers as part of the smart meter roll out. These displays offer real time updates on energy usage and costs.

24. ***To protect consumers, a robust framework of protections must be brought in for the heating sector to ensure that standards are maintained and that, where failures take place, consumers have options for recourse. We also recommend that the Government should give Ofgem the responsibility to regulate companies and providers in the heating sector, as well as the powers and resources it will need to introduce and enforce robust consumer protections. The Government should also establish an ombudsman process to manage individual complaints.*** (Paragraph 149)

Ofgem is the independent regulator for gas and electricity markets in Great Britain. As such, they already have a significant role regulating companies in the heating sector.

The Government is committed to legislating within this parliament to regulate the heat networks sector, and in December 2021 announced that Ofgem will take on the role of regulator. Under this regulatory framework, the BEIS Secretary of State will be given powers to introduce a price cap to the market in the future to protect consumers.

In addition, legislation will give Ofgem powers to investigate and intervene where prices for heat network consumers appear to be disproportionate compared with systems with similar characteristics, or if prices are significantly higher than those consumers would expect to pay if they were served by an alternative heating system. Ofgem will also have powers to set rules requiring heat networks to publicly disclose sufficient information for the consumer to understand how much they are paying, including but not limited to, their fixed charges, tariffs, and unit rates, and provide clear explanations about how prices are set and how heat network consumers are billed.

Under this regulatory framework, the Energy Ombudsman and Citizens Advice will be the frontline organisations to handle escalated consumer complaints and offer advisory services and support to consumers, including those in vulnerable circumstances. This gives consumers options for recourse when things go wrong, while Ofgem will have equivalent enforcement powers to in gas and electricity to deal with systemic issues.

As is the case for all home utilities, regulatory authority covers supply up to the property. However, the Government also remains committed to protecting consumers where work is undertaken within the home to install a low carbon heating system. All new heating installations are expected to comply with Building Regulations (2010) and, where applicable, the Gas Safety Regulations (1998).

The Government has strengthened consumer rights through the Consumer Rights Act 2015 (CRA). Under the CRA certain standards apply to every transaction for the sale and supply of goods to consumers, which must be of a satisfactory quality, be fit for a particular purpose, match the description, sample or model and be installed correctly. This includes home installations of energy efficiency and low carbon heating.

The Consumer Protection from Unfair Trading Regulations 2008 also protect consumers from the mis-selling of goods and services and prohibit unfair commercial practices by businesses against consumers. Consumers can seek free advice on their rights through the Citizens Advice Consumer Service.

Government recently consulted on a range of proposals to enhance consumer rights, and ensure those rights are robustly enforced. An important part of this is to support consumers and traders to resolve more disputes independently by improving access to arbitration and mediation services, thus avoiding the need to go to court. The Government is considering the responses received and will publish its response in due course.

Contractors delivering energy efficiency or whole house retrofit works within Government schemes must be TrustMark registered, and heat pump installers must be certified by the Microgeneration Certification Scheme or equivalent. Both schemes take steps to ensure that installers demonstrate technical competence, good trading practices and good customer service, including offering a dispute resolution process in cases where things go wrong. These requirements are being kept under review and further consumer protection measures will be considered if necessary.

25. ***We recommend that in the Spending Review, the Government considers what additional resources may be needed by local and regional governments in England to deliver this crucial part of the Government's overall strategy to deliver net zero by 2050.*** (Paragraph 158)

Local and regional governments play a vital role in driving local climate action, especially in key areas such as energy, housing, and transport.

We understand that the Government has a crucial role to play in supporting local areas to deliver national Net Zero ambitions. As the Net Zero Strategy sets out, our commitments to enable local areas to deliver Net Zero include the setting of clearer expectations on how central and local Government interact. This will be facilitated through the introduction of a Local Net Zero Forum, bringing together officials from national and local government to discuss policy and delivery options. The continuation of the Local Net Zero Programme will further support local areas with their capability and capacity to meet climate goals.

Through the current Spending Review settlement, we are boosting funding across a number of building decarbonisation schemes, all of which will be delivered in partnership with local authorities:

- £800 million into the Social Housing Decarbonisation Fund
- £950 million into the Home Upgrade Grant
- £1425 million into the Public Sector Decarbonisation Scheme
- £338 million into the Heat Network Transformation Programme

LAs will continue to play a key role in the drive to decarbonise our buildings and Government will consider this as part of future spending reviews. The Local Government Finance Settlement for 2022/23 also makes available an additional £3.7 billion to councils, including funding for adult social care reform. This is an increase in local authority funding for 2022/23 of over 4.5% in real terms, which will ensure councils across the country have the resources they need to deliver key services. In total, we expect core spending power to rise from £50.4 billion in 2021/22 to up to £54.1 billion in 2022/23. The majority of this funding is not ring-fenced in recognition of local authorities being best placed to understand local priorities, including delivering on Net Zero.

26. ***Further to our recommendation to establish a heat decarbonisation sector deal, we recommend that Ministers engage local and regional government representatives in this sector deal.*** (Paragraph 163)

The Government has been working closely with regional government representatives to attract investment within the supply chain. This has included facilitating discussions with heating appliance manufacturers interested in increasing their manufacturing capacity and training capability in the UK.

The Government has also been providing funding through schemes like the National Skills Fund to create opportunities for new local training initiatives in low carbon sectors. Furthermore, the recent announcement of a new £2.6 billion Shared Prosperity Fund will enable local partners to invest in training and research and will support SMEs to innovate and grow their businesses, with a particular focus on energy efficient and low carbon technologies.

Finally, through the Net Zero Innovation Programme BEIS has been engaging and supporting local governments, for example, the £60 million Heat Pump Ready Innovation Programme will have a strong focus on coordinating local actors in the roll out of heat pumps.

27. ***The Department for Levelling Up, Housing and Communities should give higher priority to the decarbonisation of homes and the support it offers to local and regional government in England, and should, in partnership with the Department for Business, Energy and Industrial Strategy, publish joint milestones and metrics setting out which department is accountable for which aspects of the decarbonisation of heating in homes.*** (Paragraph 169)

The Government recognises that local authorities play an essential role in driving local climate action, including on the decarbonisation of homes. We are committed to working closely with local and regional governments to help them deliver on their ambitions, including through the devolution framework announced in the Levelling Up White Paper.

The Heat and Buildings Strategy (HBS) and Net Zero Strategy (NZS) were published in October 2021 and set out milestones jointly owned between DLUHC and BEIS that will be delivered during the 2020s to decarbonise heating in homes. Delivery of these Strategies is a priority for both departments. The two departments are working in collaboration to ensure these milestones are delivered, and committed in the NZS to publicly report on progress annually against the following metrics:

- Achieve a minimum market capacity of 600000 heat pumps per year by 2028.
- Enable as many homes to reach EPC Band C as possible by 2035, where practical, cost-effective, and affordable.
- Ensure as many fuel-poor homes as reasonably practicable reach EPC Band C by 2030.

A high-level strategy for the two departments to decarbonise homes and contribute to delivering on the UK's Net Zero commitments is set out in the BEIS Outcome Delivery Plan which is published annually. This plan identifies the key programmes critical to delivery and sets out an evaluation plan to monitor and assess progress.

28. ***We call on the COP26 President, the Rt Hon Alok Sharma MP, in his capacity as chair of the Cabinet Office Climate Adaptation and Implementation Committee to take ministerial responsibility for improved coordination between Departments and to present an annual report to Parliament on progress in the delivery of cross departmental net zero policies.*** (Paragraph 170)

Improved coordination

Placing climate at the centre of Government decision-making is vital to ensure the UK remains on track to achieving net zero emissions. Our governance is a critical way that we understand the links across Net Zero, and between Net Zero and other priorities.

Net Zero and adaptation are at the heart of Government decision-making, and this is driven, first and foremost, by the Prime Minister. The Prime Minister chairs the Climate Action Strategy Committee (CASC) which considers matters relating to the delivery of the UK's domestic and international climate strategy. The COP26 President chairs the Climate Action Implementation Committee which considers matters relating to the delivery of COP26, Net Zero and building the UK's resilience to climate impacts.

The Climate Action Committees and supporting governance structures help to drive progress by creating multiple forums empowered to identify and address interdependencies both within Net Zero and with other Governmental priorities.

These committees are supported by well-established and robust governance at official level – including a cross-government Director General group that was established in 2019 to ensure a whole-of-government approach to climate policy, with oversight at the most senior levels. Chaired by the BEIS Director General for Net Zero Strategy and International, this group brings together officials from across Government to support the delivery of significant climate announcements, including those contained in the Net Zero Strategy (NZS).

Good policymaking requires strong management of trade-offs and interdependencies across different priorities. In the past few years, the Government has gone further than ever before to ensure the climate is at the heart of our decision-making

Alongside the establishment of the CASC and associated governance structures, additional steps are being taken to further improve coordination across Government, these include:

- The introduction of new approaches to embed Net Zero in spending decisions, including requiring departments to include the greenhouse gas emissions of their spending review bids, and their impact on legally binding emissions targets.
- The announcement, through the Integrated Review of Security, Defence, Development and Foreign Policy, that tackling climate change and biodiversity loss will be the Government's number one international priority
- The adoption, via the Environment Bill, of a requirement that the Government reflects environmental issues in national policymaking.

Publishing annual report

The Government already comprehensively reports the UK's historic emissions since 1990 and publishes projections of future emissions. The UK's 'Energy and Emissions Projections' (EEP) is a world-leading approach to projecting the UK's annual emissions, by sector, according to United Nations Framework Convention on Climate Change guidelines.

Alongside this, the Government responds annually to the Climate Change Committee's (CCC) Progress Report on Mitigation, including a comprehensive set of answers to the 'Joint Recommendations' that we are given each year.

As well as the EEP and the annual response to the CCC, the Government has committed in the NZS to provide a public update every year, from 2022, on progress against the delivery pathway to Net Zero set out in the Strategy. This will include:

- Progress against a set of at least 24 clear ambitions and targets across different sectors of the economy – a list that will build over time to incorporate additional Government targets and wider non-Government indicators of progress.
- Commentary on contextual changes that might affect the exact pathway to meeting our decarbonisation commitments.
- A summary of key areas of progress made against the overall package of policies and proposals in the Strategy.

This public update will be combined with our response to the CCC's Annual Progress Report on Mitigation.