An aerial photograph of a residential neighborhood. The scene is dominated by lush green trees. A road with a roundabout is visible in the lower right, and another road with a roundabout is in the upper left. Houses with brown roofs are scattered throughout the area.

HEAT AND BUILDINGS STRATEGY SUMMARY BRIEFING

October 2021



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Overview

Ahead of COP26, the long-awaited [Heat and Buildings Strategy](#) has been published, alongside the Government's Net Zero Strategy. The Heat and Buildings Strategy sets out details of a £3.9 billion package of support to decarbonise heat for buildings.

In order to meet net zero, virtually all heat in buildings across the UK will need to be decarbonised. Ultimately, net zero will mean completely moving away from burning fossil fuels for heating. This is a challenge of monumental proportion, fraught with challenge and risk, however it is recognised that the buildings transition also presents huge opportunities for jobs, growth and levelling up.

Ilias Vazaios – Director of Low Carbon:

The publication of the Heat and Buildings strategy advances decisively the debate on heat decarbonisation policy as we get closer to COP26. Along with the strategy, the Government has launched an array of policies and market interventions that aspire to reduce the cost of technologies such as heat pumps by up to 50% to bring them closer to condensing boilers. As the Government does not want to force consumers to remove their existing boilers, the capacity of policy to make low carbon heating markets more attractive during this decade is the key to the decarbonisation of heat.

The Government has put fairness and affordability at the heart of their approach, adopting five core principles to guide action over the next decade:

1. A whole-buildings and whole-system approach is required to minimise the costs associated with decarbonisation.
2. Innovation is essential to driving down costs, improving options and informing future decision making.
3. There is a need to accelerate 'no- and low-regrets' action now.
4. Government will look to balance certainty and flexibility to provide stability for investment whilst creating an enabling environment to allow different approaches to be taken for different buildings.
5. Support will be targeted towards those most in need.



FINANCIAL MECHANISMS

Rob Honeyman – Head of Analysis:

Who pays for the transition? This strategy suggests that Government through upfront grants, heating system manufacturers through new obligations to sell renewable systems, landlords via minimum energy efficiency standards, and ultimately households will all be liable to shoulder some of the net costs of the transition. Whilst Government funding through grant and support schemes has been secured, and is hoped to drive down technology costs, it remains to be seen how private lenders (via green mortgages for example), landlords and consumers will react to the new targets and incentives. This is important, as committed Government spend falls far short of deployment targets. Compare for instance the scale of expected heat pump deployment under the Boiler Upgrade Scheme (90,000 over 3 years) and the 2028 target of 600,000 installed per year. Will the private sector fill the gap?

This briefing provides an overview of the key highlights of the Heat and Buildings Strategy divided into three sections:

1. Fabric Efficiency
2. Low Carbon Heat
3. Supporting the Transition

Fabric Efficiency

Sam Crichton – Head of Policy Insight and Engagement:

It's great to see the Strategy emphasise the need for a fabric first approach. The additional funding for social housing decarbonisation scheme, public sector decarbonisation scheme and the home upgrade grant will be welcomed by industry. The Strategy quite rightly identifies the need to address the shortage of skilled trades people. However, it is disappointing that there is not a clear strategy to encourage action for able to pay households.

The Strategy has a core principle entitled **'The journey to Net Zero buildings starts with better energy performance'**. Within this pillar the Government reaffirms commitment to a **'fabric first'** approach. Priorities are set out as follows:

- Improving buildings with low energy performance and high-carbon emissions
- Futureproofing new-builds to avoid the need for later retrofitting,
- Adopting a fabric-first approach to improve building thermal efficiency,
- Increase the performance of products and appliances, ensuring climate change resilience by mitigating risks of overheating and poor air quality,
- Building the market by developing our technical expertise and expanding the UK's manufacturing capacity and capability.



Low income and vulnerable households will be supported with the cost of installing energy efficiency via schemes such as the Social Housing Decarbonisation Fund (SHDF) and Home Upgrade Grant (HUG). Of the £3.9 billion new funding proposed for decarbonising heat and buildings over 2022-2025,

- Home Upgrade Grant (HUG) will benefit from £950 million over 2022/23 to 2024/25
- Social Housing Decarbonisation Fund (SHDF) will benefit from £800 million over financial years 2022/23 to 2024/25.
- Public Sector Decarbonisation Scheme which will benefit from £1.425 billion of additional funding over 2022/23 to 2024/25 bringing the scheme value to £1 billion
- The next iteration of ECO will run from 2022 to 2026 with an increase in value from £640 million to £1 billion per year. ECO will primarily focus on improving the worst quality homes across Great Britain, helping as many to achieve EPC band C as is cost effective and suitable for the property.
- Local Authority Delivery (LAD) scheme provides funding to local authorities across England, supporting low-income households in all English regions.

New build

The Future Homes Standard will be introduced for England by 2025. As a stepping-stone to the Future Homes Standard, there will be an interim uplift in standards for England, **effective from June 2022**, that will result in a 31% reduction in carbon emissions from new homes compared to current standards.

Low Carbon Heat

OVERVIEW

The Strategy places a significant focus on plans to drive down the cost of clean heat and incentivise consumers to install low carbon heating systems in a simple, fair and cheap way. Proposals to support low carbon heat are set out in line with the Government's new target for all new heating systems by 2035 to either be using low carbon technologies, such as heat pumps or low carbon ready technologies such as hydrogen ready boilers where the Government are confident that they can supply clean, green fuel.

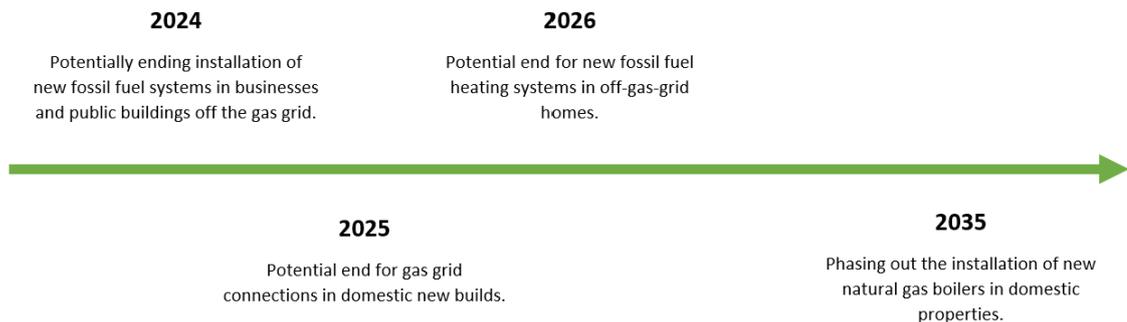
The Strategy takes a 'no or low regrets' approach, focusing on building the market for proven, scalable solutions such as heat pumps and heat networks now which will play a role in all net zero scenarios, whilst continuing to invest in research and innovation on future heating systems, including hydrogen.



A number of consultations have been published alongside the strategy, seeking views on how progress in different segments of the market can be encouraged. The key consultations include:

- Ending the installation of high carbon fossil fuels to heat homes that are not connected to the gas grid in England from 2026 and non-domestic buildings not connected to the gas grid from 2024 (see [here](#) and [here](#)).
- A new market-based regulation on manufacturers to phase out fossil fuel boiler installation (see [here](#)).
- There have also been some important updates regarding the Boiler Upgrade Grant (previously termed the Clean Heat Grant), see [here](#). The below sections provide further detail regarding support for specific technologies.

Fossil Fuel Policy Timeline



HEAT PUMPS

Rory Mathews - Senior Economic Analyst:

Today's announcements are a welcome start for the heat pump industry and a step in the right direction. There is a clear signal from government in support of heat pumps and ending fossil fuel use in heating. Although, to reach net zero, further ambition will be required through a combination of increasing funding levels and providing certainty with phase out dates for fossil fuel heating. The proposed phase-out date for off-grid fossil fuel use in 2026 will be a big boost to the heat pump market as an area where heat pumps are more cost-effective. The consultation on the market-based framework will also be of key interest and debate over the coming months.

Highlights for heat pumps include an increase in funding under the Clean Heat Grant, now being dubbed the Boiler Upgrade Scheme, and wider proposals to support cost reductions for heat pumps. The Clean Heat Grant



will provide an upfront sum of £5,000 for Air Source Heat Pumps £6,000 for Ground Source Heat Pumps to encourage homeowners to install low carbon heating systems, with the total funding pot increased to £450 million, over three years. It is hoped that the increased level of grant from the £4,000 originally proposed will drive uptake and support efforts to achieve cost parity between heat pumps installed under the scheme and traditional gas boilers.

The Government have published their Response to the Clean Heat Grant Consultation. Some of the key highlights to note regarding the Boiler Upgrade Scheme (previously called the Clean Heat Grant) have been outlined below:

- Ofgem confirmed as the scheme administrator, with day-to-day running responsibility.
- Domestic custom builds will be eligible, but not new builds and social housing.
- The scheme will support systems up to a capacity limit of 45 kWth.
- With the exception of custom-build properties, heat pumps will only be eligible where they replace existing fossil fuel systems or direct electric systems and must have a minimum SCOP of 2.8.
- All installers participating in the scheme must be MCS certified.
- There will be a voucher-based delivery mechanism led by the installer for grant application and redemption.
- To minimise non-compliance, fraud, and gaming on the scheme, robust upfront checks will be conducted before vouchers are issued and grants paid out.

The strategy outlines an expectation that significant cost reductions of between 25-50% will occur by 2025 as the market expands. There are several key proposals to supporting cost reductions alongside the market scaling anticipated by the Clean Heat Grant (Boiler Upgrade Scheme):

- Options to reduce the price of electricity by shifting levies from electricity to gas e.g. via an expansion of carbon pricing and removal of costs from electricity bills. Decisions are expected to be made in 2022, following a Fairness and Affordability Call for Evidence.
- A £60 million Heat Pump Ready innovation programme will be launched to drive technology innovation to make the systems smaller, easier to install and cheaper to run. For further details on the innovation programme, see [here](#).
- Aim for a 30-fold increase in heat pumps manufactured and sold within the UK by 2028 to increase the rate of installation, grow exports, and create more than 10,000 manufacturing-related UK jobs.
- Consulting on ending the installation of high carbon fossil fuels to heat homes that are not connected to the gas grid in England from 2026 and non-domestic buildings not connected to the gas grid from 2024.



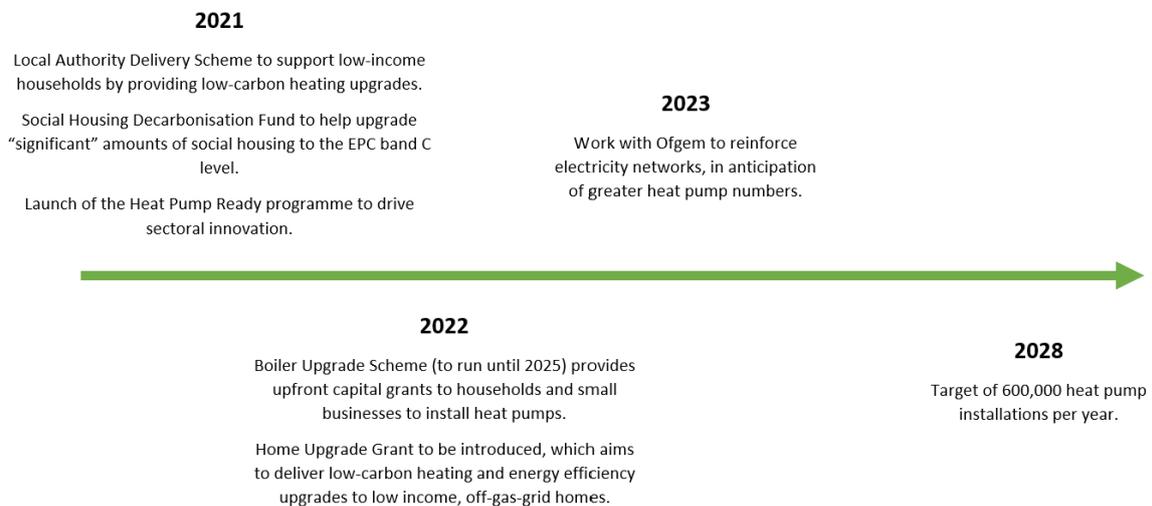
Domestic Properties

- The assumption off the gas grid is ‘heat pump first’, with regulation ensuring the installer chooses a low temperature heat pump unless certain key criteria cannot be met. It is expected that this criteria would consider factors such as heat loss, potential to upgrade energy efficiency, if necessary, availability of appropriate space, and any legal constraints.
- It is proposed that if the criteria is not met, financial assistance could be considered and following this, high temperature heat pumps or biomass can be considered, though biomass would need to meet very strict criteria.

Non – Domestic Properties

- Phased approach with the largest buildings first (from 2024 at the earliest), followed by smaller buildings (from 2026). Under the proposals, technology would be replaced at end of life and due to the diverse nature of these buildings the solutions will not be simple, with perhaps a wider use of biomass, bio-fuels, energy networks and hybrid systems.

Heat Pump Policy Timeline





HYDROGEN

Clare Jackson – Head of Innovation:

The Heat and Buildings Strategy does not announce anything new in the area of hydrogen heating. This is unsurprising given that the UK Hydrogen Strategy, which included its plans for hydrogen heat, was published less than two months ago. Nevertheless, industry will be encouraged to see the continued commitment to hydrogen trials which are now developing at pace. Upcoming consultations on hydrogen ready boilers as well as decisions on blending will be key milestones to look out for over the next 12 months.

As outlined in the recent Hydrogen Strategy, the Strategy outlines Government commitment to continue investing in ongoing trials and other research and innovation on future hydrogen heating systems. With plans for thorough assessment of the feasibility, consumer experience, other costs and benefits of hydrogen heating, the Government aims to conduct their first-of-a-kind 100% hydrogen heating trials. This includes a Neighbourhood trial (H100 project) by 2023 (phase one), Village trial by 2025 (phase two), and hydrogen town plans by 2025 subject to strategic decisions in 2026 (phase three).

The strategy highlights various projects that are planned and their targets for the hydrogen-ready pathway:

- As noted in the Hydrogen Strategy, the Government plans to engage with industry and regulators to assess the blending of up to 20% hydrogen (by volume) into the existing gas network. This is considered to have the potential to deliver up to 7% emissions reductions from the grid as well as supporting the UK hydrogen economy.
- The indicative assessment of blending's value for money is to be provided by autumn 2022 with a final policy decision in 2028.
- The Government aims to consult on the case of 'hydrogen-ready' by 2026.
- The contribution of hydrogen, if proven to be feasible for heating will not mitigate the need for 600,000 hydronic heat pump installations per year. The strategy notes that this is the minimum number that would be required by 2028 to be on track for Net Zero.
- Currently assessing application for the £60 million Low Carbon Hydrogen Supply 2 competition.



Hydrogen Policy Timeline



James Higgins – Partner:

For Heat Networks, the Strategy confirms previously announced funding through the Heat Networks Transformation Program so in one sense there is little that is new. However, practitioners will be pleased to see the central role that heat networks have been allocated within the wider heat decarbonisation effort. Market transformation depends on more than just funding for new networks and it is pleasing to see support to improve existing networks and to develop skills which will complement planned regulatory changes in customer protection and heat network zoning.

The Strategy targets growth of the heat network market via the Heat Network Transformation Programme which will receive £338 million of the £3.9 billion new funding proposed between 2022 to 2025 to scale up low carbon heat network deployment.

The second half looks to develop regulations and market mechanisms to support the increased deployment of heat networks. These are namely regulations surrounding standards, statutory rights, and carbon emission caps on the market. The programme is believed to increase recruitment pool and capability of the workforce, creating between 20,000 and 35,000 direct additional jobs by 2050.

The fund from the Heat Network Transformation Programme also enables the development of a heat network zoning approach to be deployed in England by 2025. This aims to identify the areas of lowest cost low carbon heat solution.

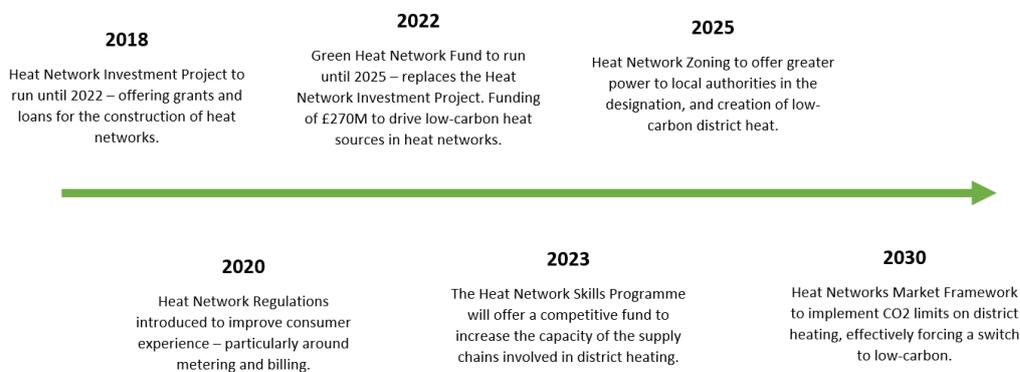
- Heat network often being suitable in high density areas.



- The Government is currently piloting the practicalities of zoning through their City Decarbonisation Delivery Programme.
- It is expected that zoning can also provide flexibility in timings up to 2050 which could support buildings to delay their low carbon heating transition if needed.

The Government is also launching the Heat Network Efficiency Scheme (HNES) demonstrator programme which will support existing heat network projects to ensure they are running at optimal efficiency levels to maximise both carbon savings and heating services.

Heat Network Policy Timeline



BIOFUELS

Rob Honeyman – Head of Analysis:

The publication of the Heat and Buildings Strategy proceeds the release of an updated Bioenergy Strategy in 2022, a process which will involve reviewing the availability of sustainable fuel and potential for bioenergy heating. For this reason, the HBS understandably poses several questions which have yet to be answered, regarding the availability, sustainability and use of limited biofuel resources.

The strategy does reaffirm the current position held by the CCC and several commentators that biofuel heating should play an important supporting role, providing a solution for hard-to-treat properties – particularly in hybrid heat pump systems. It also confirms that the Government sees biomethane injection into the gas grid as an important near-term solution for reducing emissions from the gas grid.

The strategy outlines proposals to increase the proportion of biomethane in the gas grid. It is proposed that the Green Gas Support Scheme (GGSS) will be delivered to support the injection of biomethane from AD (expected to deliver 2.8TWh of renewable heat per year in 2030/31). In the long term, the Government will explore the development of commercial-scale gasification and a potential biomethane support scheme to replace the GGSS after 2025. More info is available [here](#) in the response to the Green Gas Levy consultation.



Biomass boilers will also be eligible for £5,000 grants through the £450 million Boiler Upgrade Scheme. However, they will only be supported in rural areas and where they replace existing fossil fuel systems, where that system is not fuelled by mains gas, or direct electric systems.

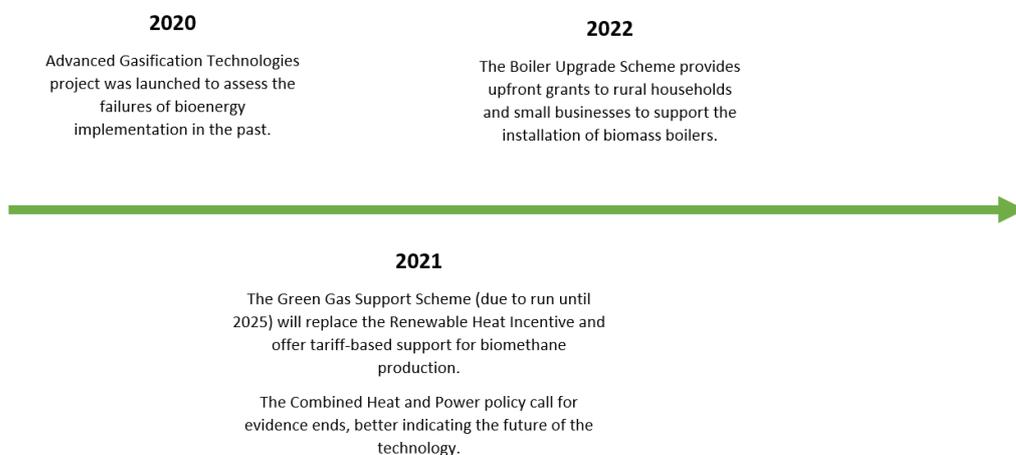
Future role of biofuels in off-grid-buildings:

- The use of biofuels for domestic / non-domestic heating has a focus on off-grid properties where hydrogen is not a feasible option.
- Biofuels expected to be used in around 20% of off grid homes which are harder to treat homes and energy efficiency improvements are less feasible.
- The strategy recognises one potential constraint of biofuels being their dependency on the availability of sustainable biomass feedstocks. It points towards hybrid heating systems, (biofuel boiler + air source heat pump) as a sensible heating system option to mitigate the potential biofuel resource risk.

Future role of biofuels in on-grid-buildings:

- Whilst the role of biofuels is reserved for only the minority of off-grid-buildings, they have a key additional role in helping to ‘kick-start’ the decarbonisation of the gas grid through biomethane injections from anaerobic digestion.
- Biomethane injection is currently supported via the Non-Domestic Renewable Heat Incentive. Continued support through the Green Gas Support Scheme (GGSS) is expected to take over in November 2021 for 4 years for new applicates. The Government will explore the development of commercial-scale gasification and a potential biomethane support scheme to replace the GGSS after 2025.

Waste and Bioenergy Policy Timeline





Supporting the Transition

PEOPLE

The Government's approach will mean that consumers will have to make voluntary choices in order for Net Zero to be achieved, and therefore public engagement is key.

Aims for public engagement include:

- the use of public consultation and advisory groups,
- increasing awareness, acceptance and understanding of the need to transition heating for Net Zero and the changes involved,
- providing information about required changes in good time to the public and industry, and
- providing advice and information to allow informed decisions and effective behaviours.

Low current levels of public awareness and understanding of the need to transition heating for Net Zero are recognised, with this strategy considered to be a step to improving this. Lack of advice has been noted as a main barrier to the installation of heat pumps.

SKILLS

Ellie Burkill – Policy and Insight Analyst

It is brilliant to see a section of the Heat and Buildings Strategy dedicated to skills. The transition to low carbon buildings presents a fantastic opportunity to create long and fulfilling careers for young people. However, it is critical that fossil fuel installers are not left behind in the transition. We are therefore pleased to see the Government setting out how they will support both new entrants and existing installers, as well as recognising the important work already done in this space by organisations such as the HPA.

The strategy builds upon the Prime Minister's 10 Point Plan which outlined that decarbonising households and workplaces could support up to 240,000 jobs across the UK by 2035, with many thousands more beyond this date in areas including manufacturing, developing, and installing low carbon technologies. Job creation opportunities are evidenced through examples of current schemes, including the Local Authority Delivery Scheme and Public Sector Decarbonisation Scheme.

It is predicted that the need for current fossil fuel installers will reduce, and as such, the importance of reskilling this workforce is noted alongside the need for low carbon heating skills from entry-level. The independent Green Jobs Taskforce will be used to inform an action plan of the specific skills and timeframes required for the Net Zero transition. Current schemes and funding for retraining and skills include the National Retraining Scheme (alongside the National Skills Fund), Skills Bootcamps, the Skills Training Competition (launched alongside the Green Homes Grant Voucher Scheme) and the Public Sector Low Carbon Skills Fund.



The need for entry-level skill is also seen as an opportunity to increase diversity of this workforce. To attract entry-level skill, the apprenticeship framework for heating and plumbing is being reviewed and a Heat Network Skills Programme developed. A sustainability advisory group is intended to encourage and highlight green apprenticeships. The Lifetime Skills Guarantee provides a route for adults without an A-level equivalent qualification to attend a free college course.

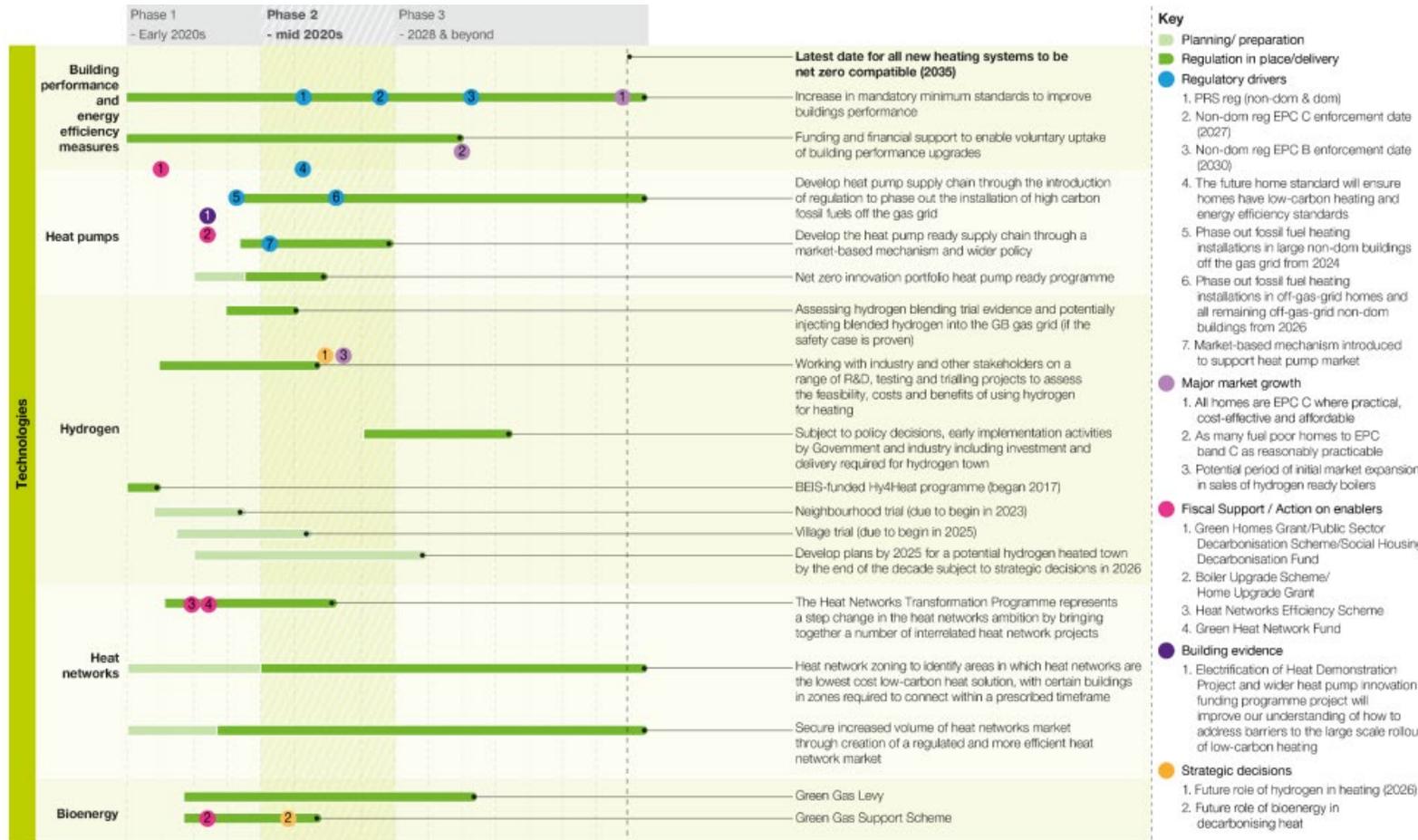
STANDARDS

Standards protect consumers through both requiring quality of products and/or installations, and good customer practices. Implemented standards include the TrustMark scheme for energy efficiency measure installations (the new scheme includes the newest version of Publicly Available Specification (PAS) standards), the Microgeneration Certification Scheme (MCS) for small-scale renewable products and installations, and Building Regulations for all heating system installations. For installers to participate in government installation schemes, they are required to comply with relevant standards.

There is currently a gap in standards like MCS for larger (over 45kW) heating systems and installations, and uncertainty around standards for hydrogen heating, should that be deployed on a large scale. Heat network regulation has been consulted on, as have changes to Building Regulations on heat pump installations.



Timeline of key policy decisions





USEFUL LINKS

- [Government Response to Clean Heat Grant Proposals, Setting Out a Boiler Upgrade Scheme](#)
- [Heat Pump Ready Innovation Programme](#)
- [Consultation on introduction of a Market Based Mechanism to Support Investment and Innovation in Transforming the Consumer Proposition on Heat Pumps](#)
- [Consultation On Phasing Out the Installation of New Fossil Fuel Heating In Domestic Properties Off the Gas Grid, With a Heat Pump First Approach to Replacing Those Heating Systems](#)
- [Consultation on Phasing Out the Installation of Fossil Fuel Heating Systems in Businesses and Public Buildings Off the Gas Grid](#)
- [List of all Public Sector Organisations Which Signed Up to the Voluntary Emissions Reduction Pledge](#)

To find out more please contact:

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