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18 May 2021

Rt Hon Anne-Marie Trevelyan MP, Minister of State  
Department for Business, Energy and Industrial Strategy  
1 Victoria Street  
London, SW1H 0ET

**Re: Heat and Buildings Strategy**

**cc: David Capper, Director for Clean Heat, Department for Business, Energy and Industrial Strategy**

Dear Anne-Marie,

We are writing to you as a group of energy industry organisations to emphasise how critical the Heat and Buildings Strategy is for our industry, and to address the climate crisis. We have outlined six recommendations for vital policies that are needed in the Strategy to ensure heat decarbonisation can begin at scale and create future-proof green jobs.

Heat decarbonisation is one of the biggest challenges facing the UK and one which we have yet to tackle in earnest. We were pleased to see the strong commitments to heat decarbonisation in the 10 Point Plan and Energy White Paper, however the industry is now in urgent need of a clear plan which gives long-term confidence.

We welcome the government's commitment to reduce emissions by 78% by 2035, following the advice of the Climate Change Committee (CCC) in the sixth carbon budget. If we are to meet that target, the CCC estimates that low carbon heating and energy efficiency measures will need to be rolled out at pace. This would include scaling up heat pump deployment to 1 million/year by 2030, with 5.5 million heat pumps already installed and increasing loft insulation to 700,000 installations a year by 2025.

However, past government schemes have left the industry wary of central government initiatives and the Green Homes Grant in particular has harmed small businesses, many of whom are still awaiting payments through the voucher scheme and have suffered income and job losses as a result.

Unless the Heat and Buildings Strategy gives a clear, forward-looking plan, the industry will not seek to expand, create the necessary skills and jobs, or start to build a robust supply chain that can decarbonise heat at the scale needed.

Ahead of COP26, the Heat and Buildings Strategy is an opportunity to show global leadership in addressing one of the biggest challenges to decarbonisation and provide a roadmap that others can emulate.

Our recommendations are set out here, with detail provided in the annex below.

1. Implement a long-term, funded support scheme for energy efficiency and heat decarbonisation retrofit which avoids the 'boom and bust' cycles created by past initiatives and provides long-term support and confidence for the industry and consumers
2. Address the distortion of environmental levies being paid on low carbon electricity bills by implementing a carbon levy scheme based on the carbon intensity of heating fuels, which will also support consumer adoption of low carbon heating solutions

3. Give local authorities responsibility for planning for heat decarbonisation and energy efficiency, with control over funding (including ECO)
4. Continue support for whole house retrofit approaches through funding schemes and incentive mechanisms
5. Introduce support for shared ground arrays based on a utility finance model to enable the take up of ground source heat pumps
6. Ban new fossil fuel heating in off gas grid properties by 2026

We look forward to the publication of the Heat and Buildings Strategy and will continue to work with your officials in BEIS who have engaged with us regularly over the last few months and have been open and receptive to our views.

Yours sincerely,

### Signatories



**Chris Cook, managing director, Cooks Energy**



**Andy Extance, director, Exeter Community Energy**



**Roger Budgeon, director, Greenshop Solar**



**Simon Crowe, managing director, Low Carbon Alliance**



**Andy Slaney, managing director, Low Carbon Estates**



**Andrew Metcalf, director, New Generation Energy**



**Alistair Macpherson, chief executive, Plymouth Energy Community**



**Madeleine Greenhalgh, policy and advocacy manager, Regen**



**Stephen Barrett, managing director, Solarsense**



**Gabriel Wondrausch, director and founder, SunGift Solar**



**Mark Smith, director, ZLC Energy**

### **About Regen**

Regen is an independent, not-for-profit centre of expertise in sustainable energy with over 15 years' experience in transforming the energy system. Regen is also a membership organisation with 150 members from across the energy sector.

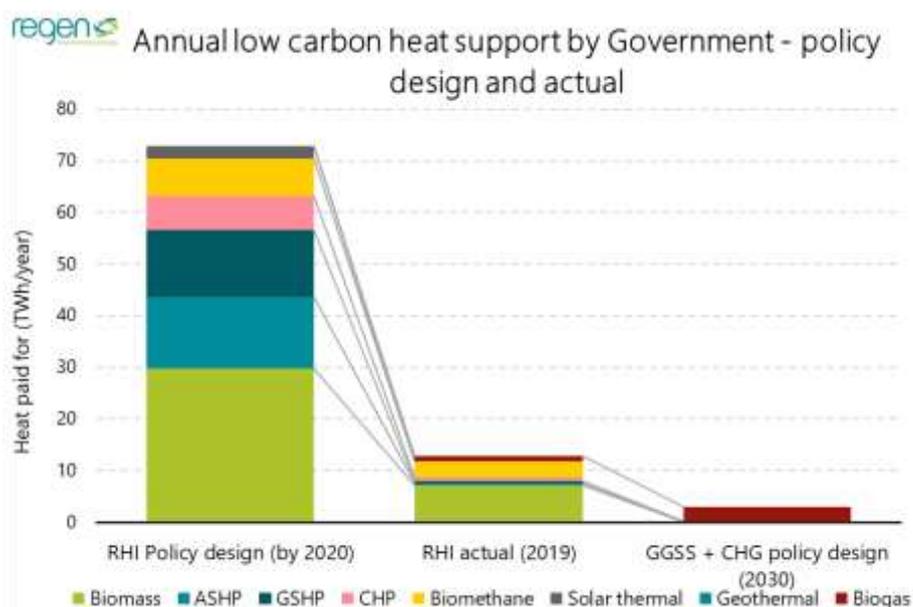
## Annex

### 1. Implement a long-term, funded support scheme for energy efficiency and heat decarbonisation retrofit which avoids the 'boom and bust' cycles created by past initiatives and provides long-term support and confidence for the industry and consumers

Heat decarbonisation is an expensive undertaking, particularly given the standard of housing in the UK, most of which will require energy efficiency upgrades to reduce demand and make the most efficient use of a zero carbon heating source. The Climate Change Committee (CCC) estimates that investment required in buildings to reach net zero will be on average £12bn/year to 2050, offset by reduction in operating costs of £5bn/year – for an average household, costs are around £10,000<sup>1</sup>. How these costs will be distributed and who will be responsible for paying is a question that the Heat and Buildings Strategy must address, but it is clear that government will need to provide at least some of this funding, whether through loans or grants.

Previous and existing schemes to fund heat decarbonisation and energy efficiency have had varying success. The Renewable Heat Incentive (RHI) and the Energy Company Obligation (ECO) schemes have been successful in providing well-run, long-term support, although they have not met the targets required (see chart below). The Green Deal and Green Homes Grant have been poorly executed and as a result have not come close to the targets required and caused damage to the industry to the extent that there is now a strong mistrust of any government scheme.

The RHI will close in 2022 and its suggested short-term replacement, the Clean Heat Grant, provides for only a tiny fraction of low carbon heat deployment committed to in the 10 Point Plan – as shown in the below chart.



GGSS = Green Gas Support Scheme | A/GSHP = air/ground source heat pump | CHP = combined heat and power | CHG = Clean Heat Grant

The heat and energy efficiency industry, much of which is made up of small, local companies, is now in desperate need of clear, stable plans which give them long-term confidence as to the direction of the industry and the government support available. Until that point, the industry will not seek to expand, will not create the necessary skills and jobs and will not start to build a robust supply chain that can decarbonise heat at the scale needed.

There is an opportunity at this early stage to create lasting, secure jobs in an industry which has a clear future in a zero carbon world. The Green Homes Grant has put those businesses and jobs at risk, but a clear strategy and funding for a wide variety of heat and energy efficiency solutions, from

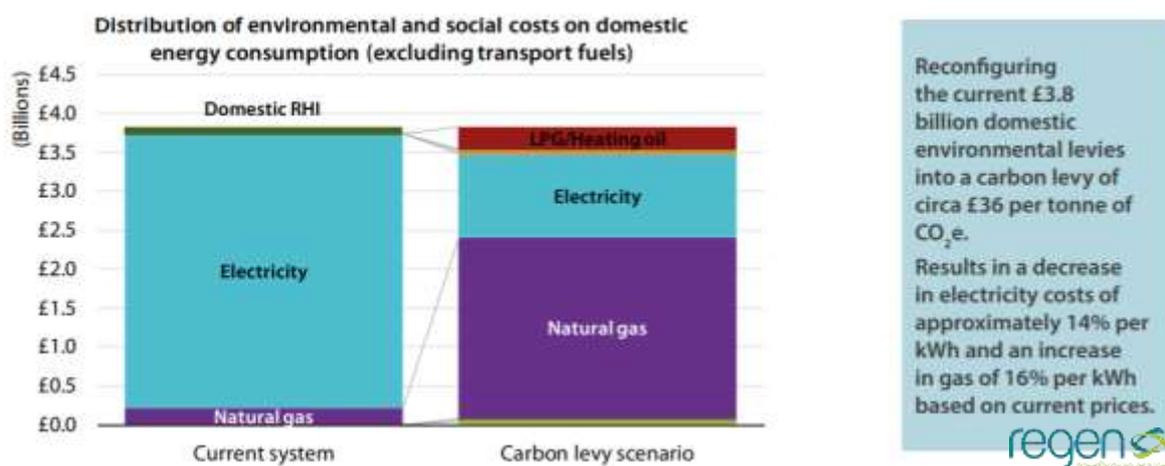
<sup>1</sup> <https://www.theccc.org.uk/wp-content/uploads/2020/12/Sector-summary-Buildings.pdf>

the government in the wake of its closure could help provide that confidence to build back up again and expand.

## 2. Address the distortion of environmental levies being paid on low carbon electricity bills by implementing a carbon levy scheme based on the carbon intensity of heating fuels, which will also support consumer adoption of low carbon heating solutions

Currently, environmental levies make up around 20% of the average domestic electricity bill, but only 1.6% of the average domestic gas bill, despite both having a similar carbon impact. This creates a significant price distortion that is dissuading consumers from switching to lower carbon electricity or green gas for heating, or adopting energy efficiency measures. Redistributing these costs would remove the fuel price distortion that favours fossil fuels and give a much stronger price signal in favour of low carbon solutions and energy efficiency. Regen explored this in more detail in our [Decarbonisation of Heat paper](#), with findings as follows:

- Regen’s analysis suggests that redistribution of the existing annual environmental levies of £3.8 billion into a carbon levy would result in a domestic carbon levy equal to £36 per tonne of CO<sub>2</sub>e (see chart below).
- Redistributing these costs would not increase the overall level of revenue raised, but it would help reset cost benefit analyses and give a much stronger price signal.
- Although revenue neutral redistribution would not have significant impact on the average dual-fuel consumer, it would send a strong ethical signal that carbon emissions have a wider cost. Communicating this, and engaging with consumers and energy suppliers, would be critical for the scheme’s success.
- This should not, however, hide the fact that a new carbon levy will have several distributional impacts, particularly for fuel poor customers. The carbon levy could itself be banded or weighted to mitigate impacts on the fuel poor. This could also be done using complementary measures to improve energy efficiency, address fuel poverty and provide, for example, targeted winter fuel allowances, using revenues from the carbon levy, earmarked for low income households.



## 3. Give local authorities responsibility for planning for heat decarbonisation and energy efficiency, with control over funding (including ECO)

As detailed in Regen’s recent paper, [Local Leadership to Transform our Energy System](#), local strategic planning developed by the local authority, in partnership with key local stakeholders including the

network operators, can deliver low carbon heating in the most efficient, place-based manner with the appropriate technology in the appropriate homes.

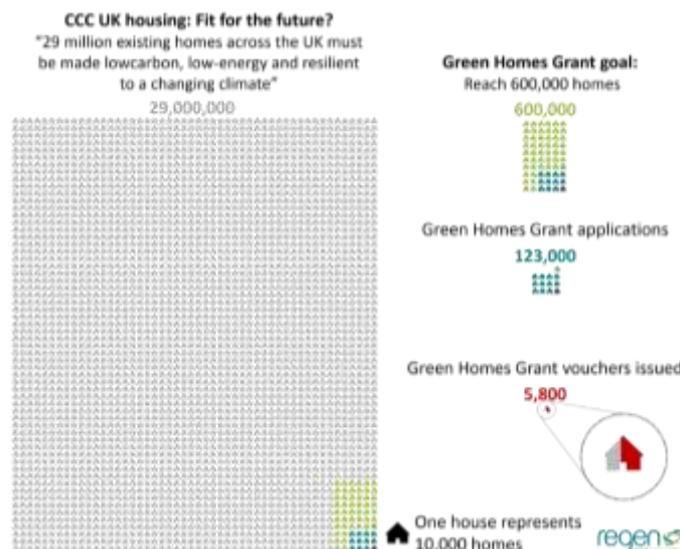
Our recommendations to achieve this are:

- Provide central guidance and funding to support a comprehensive programme of Local Area Heat and Energy Efficiency Planning. A national net zero strategy will be key to supporting local areas to understand the national policy context in which local technology choices are to be made.
- Establish a formal governance role for UK regions over the future of critical energy infrastructure, including delegated powers from the regulator, to guide the networks' investment planning, appraisal and delivery processes.
- We recommend such heat and energy efficiency planning is done on a street-by-street basis, as opposed to zoning, which covers too much of an area, or house-by-house, which is unnecessarily granular. Network operators need to make strategic investments in network capacity in line with the plans and priorities set out by local authorities, to enable heat decarbonisation.
- Government should adopt, through the Heat and Buildings Strategy, the use of energy and heat hierarchies. We have seen these hierarchies work successfully through work with Bristol City Council, who have included them in their Development Framework Core Strategy, for use with new developments.

#### 4. Continue support for whole house retrofit schemes to scale through funding schemes and incentive mechanisms

The UK has one of the least energy efficient housing stocks in Europe. Homes that are well insulated and energy efficient are not only easier to decarbonise, but they are also warm, comfortable and less expensive to heat. Decarbonising heat will not be an easy transition for residents – any additional benefits to the household through a warmer home, improved health and wellbeing and reduced costs, will help the transition to benefit everyone.

The government's approach to retrofitting homes to date has not been successful. The Green Deal, closing in 2015 after only two years, failed at great cost to achieve its aims and the Green Homes Grant has addressed only a tiny fraction of problem, whilst creating widespread discontent with the programme.



The Climate Change Committee has said that “Energy efficiency retrofit of the 29 million existing homes across the UK should now be a national infrastructure priority”. Part of the Committee’s argument for greater energy efficiency is the potential energy system cost savings which have been estimated at between £0.9 billion and £6.2 billion per year, with the highest savings for the electrification pathway.

Whole house retrofit of 29 million homes does not have a straightforward solution. The Heat and Buildings Strategy should put in place a number of options to increase the retrofit market:

- Provide VAT relief for all energy efficiency and low carbon technologies and services.
- Target property owners at key trigger points when owners are likely to consider or undertake works, e.g. renovation and purchase. An example would be a Stamp Duty Land Tax rebate if efficiency works are undertaken within six months of purchase.
- Tie the EPC more explicitly to a decarbonisation plan for the building (see Fig 3). The improved EPC could come with a set of building specific recommendations that the homeowner or business could then implement to obtain a higher ranked EPC, both to meet future regulatory standards and access to the market incentives.
- Rental bands and price controls could be changed to incentivise property owners to improve building fabric efficiencies to reduce energy bills.
- Lenders could be encouraged to allow more favourable mortgage terms to householders (or businesses) with lower emissions and greater efficiency, as laid out in the recent BEIS consultation.<sup>2</sup>
- Reflecting on households’ feedback on the Green Homes Grant, and the lack of guidance and advice, we recommend a two-stage process to any government-funded scheme:
  - First stage, offering a voucher to employ an impartial retrofit professional to do an assessment of the available options for one’s house.
  - Second stage, offering a voucher for households to employ a trusted, recommended contractor to carry out the desired measures.



Figure 1 Proposed reform of EPC.

## 5. Introduce support for ground arrays as a new utility to enable take up of ground source heat pumps

Recent research carried out on heat pump deployment in Regen’s paper [Rethinking Heat](#), found significant potential for efficiencies and cost savings if ground source heat pumps (GSHPs) were used as shared ground arrays supplying multiple properties.

Shared GSHP ground arrays are in many ways simpler than heat or gas networks, being almost entirely passive once built. This makes investment in shared ground arrays an attractive, long-term prospect that could open up a significantly larger market for GSHPs. Further, making GSHPs easier to install in some properties could also reduce heating costs for consumers who may not otherwise access the technology.

Since March 2018, GSHP systems that use shared ground arrays have qualified for non-domestic RHI support, stimulating a boost in installations. Industry intelligence suggests that approximately 4,000

<sup>2</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/936276/improving-home-energy-performance-through-lenders-consultation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/936276/improving-home-energy-performance-through-lenders-consultation.pdf)

GSHPs attached to a shared array have been installed under this support in the last two years, indicating market growth of at least 30%.

With the potential for a larger GSHP market and nationally significant benefits identified, business models that could unlock these benefits need to be developed. When installing a single GSHP the installation of the ground infrastructure is a high proportion of the overall system cost and is the principal reason that GSHPs are more expensive per unit when compared to ASHPs.

Our analysis suggests that replacing the up-front cost of the ground array with a standing charge, in combination with appliance price reductions, would bring the typical 30-year total cost of ASHP and GSHP ownership at least to parity. This would better enable the most appropriate type of heat pump solution to be installed in any given instance, opening up opportunities where either heat pump solution may have proven challenging.

## **6. Ban new fossil fuel heating in off gas grid properties by 2026**

The Energy White Paper in late 2020 agreed to consult on the phase out of fossil fuel heating in homes off the gas grid, however this consultation has not yet been published. The Climate Change Committee recommended in their recent Sixth Carbon Budget that fossil fuel boilers not connected to the gas grid be phased out by 2028, with replacement installations at end-of-life to be zero carbon.

Regen's modelling of Future Energy Scenarios finds that a net zero compliant pathway requires the rate of heat pump uptake by off-gas homes to peak in the mid-2020s. To achieve the Ten Point Plan target for 600,000 heat pumps a year to be installed by 2028, all new oil, LPG and solid fuel heating systems in off-gas grid properties need to be low carbon by the mid-2020s.

As acknowledged in recommendation one, the cost of decarbonising homes is significant and this is likely to be even more so for rural homes, 60% of which are off the gas grid and have additional challenges of hard-to-heat homes and constrained network connections. Whilst funding may be available for low income households and market mechanisms will nudge those with available funds to pay for decarbonisation, there exists a significant middle-ground of those without the necessary funds to upgrade to a low carbon heating system and energy efficiency measures. Any ban on fossil fuel systems must consider the impact on these households and the alternative measures available to assist them, whether through government funding, as set out in recommendation one, regulatory measures, as set out in recommendation two, and approaches that allow homeowners to leverage mortgages.