

Heating our homes

About Us

The Centre for Sustainable Energy is a charity (298740) supporting people and organisations across the UK to tackle the climate emergency and end the suffering caused by cold homes. We do this by sharing our knowledge, practical experience and policy insights. For over 40 years, we've supported people to take effective action on energy in their homes. We help communities and local councils to understand energy issues, set priorities, and put plans into action. Our research and analysis focus on making the energy system greener, smarter and fairer. Through our advice line, home visits and one to one support, we support around 15,000 people a year to reduce their bills and make their homes more energy efficient.

We have direct experience of:

- Delivering retrofit programmes – We administer ECO Flex for seven councils and deliver the Home Upgrade Grant (HUG) for four councils. We supported the installation of 1,845 measures in 2022/23.
- Supporting communities to help others act to improve their homes – We are the lead partner for the customer journey and community engagement as part of the Bristol Heat Pump ready programme.
- Conducting strategic policy analysis for government – For example, we are currently working with ADE to examine the rate of energy efficiency deployment for the Climate Change Committee.

1. What policy changes are needed to deliver energy efficient homes across the UK?

Homes are responsible for half of carbon emissions from the built environment¹, which makes improving their fabric performance critical to delivering on the UK's net zero commitments. Currently 85% of homes are heated by gas which is forecast to remain expensive due to the ongoing war in Ukraine. Since Russia invaded in February 2022, every unit of gas is 85% higher today than it was in winter 2021/22 and the gas standing charge is 11% higher. Improving the efficiency of our homes is therefore critical to tackling both climate change and fuel poverty targets.

The biggest change would be consistent long-term policy signalling that goes beyond election cycles. Ideally there would be a ten-year programme (five as a minimum) which targeted people in fuel poverty and those who are struggling but can't afford to upgrade the energy efficiency of their homes (the middle majority). But we need both sticks and carrots if we are to deliver the necessary step change in retrofitting our homes.

Grant funding

- The UK needs a nationwide programme to both tackle fuel poverty and offer heavily subsidised measures to the middle majority. Both Wales and Scotland have existing schemes. We would therefore recommend a new England-based programme, Warm Front 2.0. This programme needs to run for ten years (and tackle one million homes every year) and should support measures where the supply chain is constrained i.e. solid wall insulation. As a major contractor for solid wall insulation, the provider would be able to invest in skills

¹ <https://ukgbc.org/policy-advocacy/domestic-retrofit/>

through apprentice programmes and training schemes. It could also compliment HUG and SHDF by providing capacity if local schemes are unable to find contractors to do the work (a common issue).

- Local authorities need support and capacity building to better target, market and deliver effective and efficient area-based schemes.
- Building on the Boiler Upgrade Scheme, targeted financial support and advice is essential for lower income and fuel poor households to transition to clean electric heating, ensuring we deliver more affordable energy bills at the same time as decarbonising.

Other fiscal measures

- Previous analysis has shown that Stamp Duty Land Taxation (SDLT) could be used to drive improvements in energy efficiency while also being cost neutral to HM Treasury². By lowering SDLT for properties with an EPC of C or above and raising it for homes of EPC E and below, we would be creating an incentive to improve the home either before the point of sale or after it, depending on the design of the policy.
- The government should reintroduce the Landlord's Energy Savings Allowance (LESA). The was introduced in 2004 to encourage landlords to undertake energy efficiency measures in their properties, with up to £1,500 per property available to claim against tax each year. Due to low levels of take-up, the policy was scrapped and replaced by Minimum Energy Efficiency Standards to regulate improvements. The LESA should be reintroduced at a higher rate to compliment the MEES regulations.
- Department for Energy Security and Net Zero (DESNZ) has recently appointed the Discovery Phase of the Green Home Finance Accelerator (GHFA) programme. The programme generated significant interest and awarded a total of £4.2m funding to 26 projects across Great Britain. Providing householders with accessible high-quality advice and information that's impartial needs to be an essential component when households are accessing finance for complex home retrofit projects.

Regulation

- The consultation on improved Minimum Energy Efficiency Standards for the private rented sector closed on 8 January 2021. We are still awaiting the response. The following recommendations should be implemented in full:
 - Raising the energy performance standard to Energy Performance Certificate (EPC) energy efficiency rating Band C.
 - A phased trajectory for achieving the improvements for new tenancies from 2025 and all tenancies from 2028.
 - Increasing the maximum investment amount, resulting in an average per-property spend of £4,700 under a £10,000 cap.
 - Introducing a 'fabric first' approach to energy performance improvements.
- The Department for Communities and Local Government (DCLG) published a Consultation on Part L of the Building Regulations, dealing with energy efficiency in 2013. As part of the consultation, the government proposed to amend some measures that apply to existing domestic buildings. As part of a drive to improve home insulation standards the government

² Croft D and Preston I, Taxing carrots and sticks: Incentivising efficiency through property taxes, eceee, 2013

³ <https://www.gov.uk/government/consultations/building-regulations-conservation-of-fuel-and-power>

could introduce consequential improvements i.e. energy efficiency improvements that are required by Building Regulations and are triggered by certain controlled works being carried out in a home.

Support and information for householders

- **Local energy advice** – Despite the UK facing the highest energy prices for decades while at the same time needing to take urgent steps to achieve net zero, there is no source of high-quality impartial advice for households on reducing their energy use. From the 1990s to 2008 the EST funded a network of 52 local energy efficiency advice centres (EEACs) later reduced to 21 regional centres by 2011. Given the growing and desperate need for high quality impartial advice that's embedded in the local community, we recommend that a national network of EEACs is re-established.
- **A national communications programme** – In view of the vast increase in the number of heat pumps installed in homes that our carbon target requires, a government-backed campaign is needed to increase awareness and uptake. Similar campaigns were run in the 1970s for the switch to natural gas, and between 2007 and 2012 for the switchover from analogue to digital TV. = There's a considerable amount of misinformation about heat pumps in the media and a trusted source of information that is widely disseminated is critical.
- **Building passports** – Energy Performance Certificates do not provide sufficient information for householders, and they can't be used to track long term improvements in energy efficiency. Building passports need to be developed which take information from the EPC input data and combine this with energy data, and other relevant information such as location, occupancy and ownership. The passport can then be used to track a building's renovation plan and provide evidence of its progress to decarbonisation through fabric and water efficiency improvements.

Skills and training

- We urgently need a national skills strategy to tackle one of the biggest challenges we face, namely a lack of skilled trades people to deliver the work (see Q2 below). An additional 500,000 trade positions are needed to meet even a minimum EPC C target for all homes by 2030. This is more than double the existing workforce, as doesn't include the 50,000 retrofit coordinators also required⁴.

2. What are the key factors contributing to the under-delivery of the UK's government-backed retrofit schemes?

A lack of skilled, competent and qualified people is the major factor limiting our ability to accelerate retrofit. The Green Homes Grant has shown that consumer demand can rapidly outstrip industry capacity. To increase the number of homes we are retrofitting we need a 'retrofit army', and the Construction Leadership Council (CLC) have called for a strategy to create this. This will need to account for the variety of pathways in the construction industry, both skilled and unskilled, and the range of employment opportunities that are available. Developing this strategy and recruitment campaign would be a function for a new dedicated Retrofit Delivery Agency.

The Agency would work strategically with Skills Advisory Panels (SAPs) led by local authorities. These are local partnerships that bring together employers and training providers, including colleges and

⁴ Construction Leadership Council, National retrofit strategy, 2023

universities, to determine the action needed address local skills needs. This will be informed by the government's Green Jobs Taskforce and the CITB's report, Building Skills for Net Zero, as well as the CITB's forthcoming assessment of the skills and qualifications needed to deliver the a national retrofit strategy.

Merely offering support to individuals to be trained will not be enough. Additional measures will be needed including developing the skills of Building Control professionals to ensure that the work of those delivering retrofit projects is of an acceptable standard.

We also need:

- **Long term commitment.** Warm Front 2.0 would create a significant employer, or group of employers depending on the delivery model. The ten-year programme of solid wall insulation we are calling for would give these employers the confidence to invest.
- **Apprenticeship subsidy.** Working with the existing CITB and UK Apprenticeship Levy system, firms must be supported to take on new apprentices. Colleges must be engaged in new local retrofit partnerships and be responsive to the skills demands of industry.
- **'Route to Work' for trainees.** Ideally this would be cost-neutral for the recently unemployed. The new apprenticeship standards launched in August 2020 allow programmes to be adapted to suit new circumstances and can be aligned with incentives for firms to commit to taking on apprentices.
- **Investing in further education.** While some colleges are showing interest in expanding their construction courses to cover retrofit and running new courses for measures such as heat pumps, others are reluctant to commit until they know that such courses are attractive to students. Central funding to encourage colleges to run courses is therefore needed.
- **Developing trainers** . Training to support effective retrofit activity is not a classroom activity, although full involvement of Further Education colleges will be important for local delivering programmes. Training and continuous development to match continuous improvement will need to be integrated into everyday site activities. Place-based networks of site-based learning would drive individual commitment, based on evidence that construction trades like to work 'on the job'^{5,6}.
- **Upskilling.** It will also be important to upskill the existing workforce so that they are equipped with the knowledge and the latest techniques they need to deliver retrofit. This includes an understanding of building physics and whole-building design. Employers should be able to access funding for CPD for people working in retrofit.

3. Which standards and assessment frameworks are needed to deliver a reliable, skilled workforce capable of transitioning UK homes to modern heating solutions?

It's important that we recognise that majority of activity to retrofit our homes and improve energy efficiency extends beyond the existing frameworks i.e. Trustmark and MCS. Most of the work that's done to improve our homes through the repair, maintenance and improvement (RMI) sector is largely unregulated. Those trade bodies that do exist do not have extensive qualification and quality

⁵ Simpson K, Janda KB, Owen A. 2020. Preparing 'middle actors' to deliver zero-carbon building transitions. Buildings and Cities. 1(1), pp. 610-624

⁶ Simpson K, Owen A. 2020. Reflections From Engaging a Network of Local Stakeholders in Discussing Training Needs for Sustainable Renovation. Frontiers in Built Environment.

assurance requirements. We need to create an industry culture that ensures all jobs are done to the set standards. We therefore need to see both the following:

- An increase in general standards across all builders and trades. We'd suggest building on Trustmark Licence Plus Scheme to increase the number of registered businesses alongside basic training requirements for members.
- An expansion of the role for PAS 2035 in retrofit compliance. For example, any significant retrofit activity (particularly solid wall insulation) should be covered by PAS regardless of grant funding.

4. How might the government support innovation in delivering local solutions?

Access to detailed information about the low voltage network from DNOs like National Grid Electricity Distribution is limited. To support the local deployment of heat pumps and flexibility services information on the low voltage network, constraints (such as looping) and transformer head room should be made available to local delivery partners.

5. What role should customer choice play in the future planning of energy networks for home heating?

Heat network zoning provides an opportunity to strategically identify where it's most economically favourable to develop heat networks. DESNZ is working with CSE to develop the model that will help us map where heat networks are the lowest cost low-carbon solution to decarbonise building heating.

Once the heat network zones have been established, we would advocate a collaborative approach to decision making. CSE has created Future Energy Landscapes (FEL)⁷, an open-source approach to community engagement. FEL is a way of involving local communities in how and where renewable energy development gets developed around them. It considers the type and scale of renewable energy that communities might find acceptable, the potential landscape impacts they might accept, and the benefits they can derive. It has been remarkably successful in building support for expanding renewable energy generation, including onshore wind. For example, 9 out of 10 recent FEL consultations the community identified the potential to meet their total annual electricity demand entirely from local renewable sources. A similar approach could be taken to engaging the local community in the roll-out of heat networks.

Unless mandated to connect to a heat network, consumers will make their own choice and may opt for a non-network alternative such as a heat pump. They are more likely to choose to connect to a network if they regard the offer as both trustworthy and fair. Significantly, both DESNZ and Ofgem are currently consulting on heat networks regulation⁸ with the aim of ensuring that consumers receive a fair price, a reliable supply of heat, and transparency of information. Getting these consumer protections in place is essential both to increase the numbers of consumer's choosing to

⁷ Future Energy Landscapes Methodology – CSE - www.cse.org.uk/my-community/community-projects/future-energy-landscapes-community-consultation-method/

⁸ <https://www.gov.uk/government/consultations/heat-networks-regulation-consumer-protection>

join a heat network and to building consumer trust if connecting to a network should ever be mandatory.

6. Does the current state of consumer protections for low-carbon home technologies represent a barrier to uptake of these products?

MCS have recently consulted on scheme redevelopment. One key area for improvement is an increase in the number of audited installations from one per registered contractor. This needs to move to a system that's proportionate to activity.

7. How will the public be able to afford the switch to decarbonised heating?

See answers to Q1 around grant funding and finance. In addition to this we need to see significant reforms to energy pricing. There are two key ideas that need to be explored further:

1. Reducing the cost differential between gas and electricity. Based on a SCOP of 3.5, a heat pump is currently comparable in cost with gas. By moving some policy costs associated with renewable energy such as the Feed in Tariff from electricity bills to gas bills, the cost of gas would increase which would increase the financial benefit of a heat pump and so drive further demand.
2. Locational Marginal Pricing (LMP, also known as 'nodal' pricing). There is potential to reduce electricity costs by using pricing that reflects the cost of generation at different locations on the grid. This means that the price of electricity varies depending on where it is produced and consumed, as well as the time of day.

Prior to implementing these changes more work needs to be done to understand the distributional impacts to UK energy consumers.

8. How will decarbonisation plans be drawn up in each area?

Local Area Energy Plans (LAEP)

Local Area Energy Plans can help local authorities, local actors (such as advice agencies) and distribution network operators co-ordinate both the deployment of retrofit measures and critical investment in the electricity grid. They can help stakeholders understand better the likely pace and location of planned retrofit activity which can help inform their decisions on consumer engagement. And LAEPs can also provide local planning authorities with robust data to underpin their policies and strategies, to set realistic but challenging deployment targets and to understand where the grid has capacity to support further deployment.

Distribution network operators (DNOs) carry out distribution future energy scenarios⁹ (a methodology developed by Regen) to guide their planning of the networks. These already integrate

⁹ <https://www.regen.co.uk/area/distribution-future-energy-scenarios/>

local authority plans, where available, into their scenarios, though most areas do not have LAEPs or equivalents. If the government supported and funded all local planning authorities to carry out LAEPs this would enable a much clearer link from local energy planning to energy infrastructure planning. The introduction of a regional system planner could then further build on this collaboration between DNOs and local authorities.

9. Do the current EPC frameworks help consumers make informed decisions on transition?

See our suggestion under question 1 to implement Building Passports.

10. Do standards need to differ for different types of housing?

No.

11. What is the role of different levels of government in developing, funding and implementing schemes?

As noted in this response, there are clear roles for a number of teams within local authorities. However, the companies that deliver retrofit often work at a sub-regional level across several local authorities. We therefore feel that there is an additional role to help coordinate the supply chain development, particularly business development, which lends itself to the Net Zero Hubs.

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