

Royal Institute of British Architects

Department for Business, Energy and Industrial Strategy:
Phasing out the installation of fossil fuel heating in homes off
the gas grid
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The Royal Institute of British Architects is a global professional membership body driving excellence in architecture. We serve our members and society in order to deliver better buildings and places, stronger communities and a sustainable environment. Being inclusive, ethical, environmentally aware and collaborative underpins all that we do.

The RIBA welcomes the opportunity to respond to the phasing out the installation of fossil fuel heating in homes off the gas grid consultation. On 29 June 2019 RIBA Council voted to join the global declaration of an environment and climate emergency, two days after the UK Government passed a law to require the UK to end its contribution to global warming by 2050 by bringing all greenhouse gas emissions to net zero.

The climate emergency demands urgent action and leadership by the Government, architects and the wider construction industry. The RIBA welcomes these proposals as reducing dependence on fossil fuels is key to getting on track for net zero. However, the proposals must be accompanied by a long-term policy and investment programme for upgrading the energy efficiency of England's housing stock, a National Retrofit Strategy. We believe that there is a need for greater ambition on behalf of the Government if we are to significantly improve the performance and reduce the environmental impacts of the built environment.

The RIBA recommends that the Government:

- Consider additional trigger points for the natural boiler replacement cycle such as point of sale, let or renovation.
- Implement a National Retrofit Strategy which includes substantial and sustained government funding and policy interventions for homeowners that provide low-cost finance options and incentives such as a sliding scale of Stamp Duty.
- Promote the use of “fabric first” and a “whole house” retrofit approaches through further funding to the Simple Energy Advise website.
- Consider embodied carbon targets to ensure the full carbon impact of a home is measured.

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1. Do you agree with the principle of working with the natural boiler replacement cycle as the key trigger to deploy low carbon heat? Please provide evidence to support your response.

Yes, we agree with the principle. However, it may not always be optimal for households to wait until their old heating system breaks to replace it with low carbon heating such as a heat pump, which may also require complementary energy efficiency measures to be installed. In addition, there are other trigger points that the Government should consider for new low carbon heat installations – for example, point of renovation and sale of a property. Incentives such as a sliding scale of Stamp Duty could also help encourage action at these points.

2. Would a 2026 end date for the installation of fossil fuel heating in homes off the gas grid give industry and consumers sufficient time to prepare for the regulations? Please provide evidence to support your response.

The RIBA agrees that 2026 should be the very latest end-date for the installation of fossil fuel heating systems in homes off the gas grid. With the right support, regulation, advice and incentives – this timeline should be sufficient for industry and consumers to prepare for these changes.

As pointed out in the consultation there are currently 1.1 million homes reliant on fossil fuel heating – many of these homeowners, given the high levels of rural poverty, will require financial and non-financial support from the Government. This will require a long-term policy and investment programme for upgrading the energy efficiency of our housing stock, a National Retrofit Strategy. The Strategy must involve substantial and sustained government funding and policy interventions for homeowners that provide low-cost finance options. The most vulnerable households, living in the least efficient rural homes, must have suitable access to support.

3. Do you agree with a heat pump first approach to replacement heating systems in fossil fuel heated homes off the gas grid that can reasonably practicably accommodate a heat pump? Please provide evidence to support your response.

Heat pumps are an effective way to reduce the carbon required to heat a home. The RIBA agrees that heat pumps should, at this time, be prioritised as replacement heating systems. However, as research and development continue, there may be new technologies and products that are low carbon and produce similar results to heat pumps, these should not be discounted.

A fabric first approach is key to ensuring that energy efficiency works actually improve the energy efficiency of a property and do not add additional costs to the building occupier. For example, it is important that heat pumps are installed in well-insulated homes. This is because the lower the flow temperature of the heat pump, the higher it's efficiency. In a home without adequate insulation, the heat pump will require a higher flow temperature, which will cost more to run and have higher carbon emissions.

It is important, therefore, that a “whole house” retrofit plan, which includes considered individual measures that are installed at the right time and work together, is undertaken for successful energy efficiency works.

4. Do you have any views on the design or content of guidance that will help households and installers determine whether it is reasonably practicable to install a heat pump? Please provide evidence to support your answer.

We welcomed the introduction of the Simple Energy Advice (SEA) website, which is the central information resource for energy efficiency advice in England. However, we believe there is a role for more tailored advice through an expanded information hub. This will require additional funding capacity be allocated for the SEA, including expanding the information hub to provide access to trained advisors who can give customers tailored and personalised support. The advice given by the SEA must encourage a “whole house” retrofit plan to homeowners to plan upgrades incrementally in a way that ensures they are improving the energy efficiency of their home. It is important that the homes falling under these proposals are provided with adequate guidance through the SEA.

The Government can support high-quality installations by aiding installers with training, skills and accreditation. Widespread heat pump deployment will require both upskilling of the current workforce and training the next generation of low-carbon heating installers. This will ensure that the quality of heat pump installations is high, the knowledge of the benefits that the technology can bring is commonplace, and there are enough installers to scale up deployment to the levels required.¹

5. Do you have any additional evidence on the size and characteristics of the cohort of homes off the gas grid that have the greatest deployment potential for ground source heat pumps?

Recent research by Energy System Catapult found there is no property type that is technically unsuitable for heat pumps, as long as there is the correct ecosystem of measures and support in place, including for complementary energy efficiency measures.ⁱⁱ

7. Do you agree that future use of solid biomass to decarbonise heat in homes off the gas grid should be limited to rural, off-gas grid areas where air quality can be better controlled, and in ‘hard to treat’ properties that are not suitable for other low carbon heating technologies? Please provide evidence to support your response.

The RIBA welcomes the Government’s proposal that alternative low carbon heating must also consider other metrics, such as indoor air quality. The RIBA believes that all buildings must be sustainable, safe and contribute to the health and happiness of the people that live in and use them. This is why the [RIBA 2030 Climate Challenge](#) calls on RIBA Chartered Practices to meet net zero whole life carbon by 2030 by setting targets for operational energy, embodied carbon, potable water usage and also includes health and wellbeing metrics such as indoor air quality. Prior to installation of new low carbon heating systems key wellbeing metrics, such as indoor air quality, should be considered.

8. Do you have any views on the development of heating fuels and systems which will be consistent with wider government objectives on net zero emissions, environmental sustainability and air quality, and offer a secure and affordable fuel supply to consumers, from 2026? Please provide evidence to support your answer.

The RIBA welcomes the Government’s proposal that alternative low carbon heating must align with net zero, indoor air quality and consumer experience. The RIBA believes that all homes must be sustainable,

safe and contribute to the health and happiness of the people that live in and use them; measuring the further factors suggested is a positive step to ensure this.

Prior to installation of new low carbon heating systems key wellbeing metrics, such as indoor air quality, should be considered. In addition, the current energy price crisis has highlighted the importance that any alternative low carbon heating system must have adequate energy supply to match the required demand to protect consumers from exorbitant costs.

9. Do you agree with an end date for the use of remaining fossil fuel heating in homes off the gas grid by the late 2030s? Please provide evidence to support your answer.

Yes, we agree it will be necessary to ensure an end-date for the use of remaining fossil fuel heating in homes off the gas grid by the late 2030s, or sooner. A clear timeline will provide confidence and clarity for industry and households to plan and invest. A hard backstop will be important to prevent potential loopholes, for example with people replacing various parts of existing high carbon heating systems, while stopping short of purchasing a new item.

However, a hard-stop end date will need to be accompanied by long-term financial and non-financial support, particularly for low-income households, given high rates of rural fuel poverty.

10. Do you have any views on measures the Government could introduce to ensure that fossil fuel heating will no longer be used in homes off the gas grid by the late 2030s? Please provide evidence to support your answer.

The Government needs to support a wider ecosystem of regulations, incentives, subsidies, and advice – to ensure that fossil fuel heating will no longer be used in homes off the gas grid by the late 2030s, as low carbon heat becomes the de facto.

11. Do you have any views on how best to ensure compliance with the proposed regulations laid out through this consultation? Please provide evidence to support your answer.

We believe it is appropriate for the Government to take a supportive, rather than punitive, approach to compliance in the first instance – given the particular challenges that rural households face, including higher levels of fuel poverty.

Possible avenues for ensuring compliance could include requirements at point of sale (with a potential role for estate agents/mortgage providers); requirements at point of major renovation; requirements through the planning system; revisions to Part L of the Building Regulations; energy company audits and inspections; and Local Authority trading standards for companies selling heat appliances. For enforcement to be successful, adequate funding and capacity for enforcement bodies will be required.

12. Do you have any views on what more could be done to address financial barriers to heat pump deployment? Please provide evidence to support your answer.

As mentioned above, the proposals in this consultation must form part of a National Retrofit Strategy – a long term policy and investment programme for upgrading the energy efficiency of our housing stock. The Strategy must also involve substantial and sustained government funding and policy interventions

for homeowners that provide low-cost finance options. This has been effective in other countries, such as Germany, and is important to help improve the energy efficiency of our housing stock.

In addition, other green financing options, such as green mortgages will be key to ensuring the uptake of energy efficiency measures. Lenders could offer lower interest rates when energy efficiency works are complete. The Government has an important role to play in ensuring that these products come to market so homeowners can invest in energy efficiency and are not locked into unsustainable debt.

The National Retrofit Strategy must also provide incentives for homeowners. The Government has many of the tools already, they just need to be utilised. Stamp Duty Land Tax, for example, could be altered to help embed energy efficiency in the housing market through a sliding scale of stamp duty payments, where the most efficient homes pay much less tax than the least.

The revised tax could be capped at £25,000 to avoid large and potentially punitive increases on expensive homes and could also have a time-limited rebate period, to encourage homeowners to make their own energy efficient improvements.

Evidence shows that people are more likely to pursue energy efficiency improvements at certain trigger points or moments of change, such as moving home, since they are already prepared for disruption at these times. In 2017-18, there were 1.1 million residential transactions, so reforming Stamp Duty Land Tax could be especially effective.

14. Do you have any views on what more could be done to galvanise supply chains for low carbon heating? Please provide evidence to support your answer.

Only a long-term policy and investment plan can provide businesses with the confidence to make substantial, sustained investments in skills and supply chains, drive innovation and lower the costs of technologies and installations in key markets.

Previous efforts to stimulate demand were characterised by stop-start funding that led to boom and-bust cycles, ultimately leaving the largely SME suppliers of construction for retrofit with unsustainable business models. If these poor outcomes are to be avoided moving forward, the Government will need to bring forward a plan to ensure that consumer demand is built up and is sustainable.

Recent lessons from the Green Homes Grant are timely and can ensure a successful new programme. The axing of the scheme may have resulted in industry losing further confidence in investing in the skills and supply chain needed to retrofit the UK's housing stock. It is essential, therefore, that future schemes are longer-term, if time-limited, and sufficiently capitalised to restore industry confidence.

High quality training ensures high quality installation – which will be essential for building trust among households. There is considerable evidence that poor standards of installation, including scams and low quality craftsmanship, has affected the market for energy efficiency improvements. The prevalence of such instances creates two problems that inhibit the ability for England to decarbonise its housing stock.

First, where poor installations have taken place, further energy efficiency improvements will need to be carried out on the retrofitted home. Second, they blight confidence in the energy efficiency improvement sector, and have likely contributed to the lack of demand.

Adequate training and education to ensure competence and skills within the supply chain are key to ensuring energy efficiency measures are installed in a safe and effective manner. The Government must provide support to ensure all installers are equipped with the skills and qualifications to deliver, and that the pool for PAS2035 accredited installers is increased.

Additionally, the Government has a key role to play in ensuring installations meet the highest standards, and that consumers are protected from making substandard alterations to their home. The announcement that the Green Homes Grant would only apply for tradespeople who are part of the TrustMark accreditation scheme was a positive development and we believe this should be extended to include other retrofit works, such as the proposals in this consultation. This will help to provide quality assurance standards when works are being delivered.

However, the Government must ensure that the TrustMark scheme is operating effectively to provide consumers with adequate protection, and it does not simply become a tick-box exercise. This is something that the Government should be aware of when reviewing the overall effectiveness of the TrustMark scheme.

15. Do you have any additional evidence on how groups protected under the Public Sector Equality Duty may be affected by our proposals to phase out high carbon fossil fuel heating in homes off the gas grid?

Each year tens of thousands of people die from extreme cold. The five-year moving average of excess winter deaths in Great Britain is 35,600 per year. Of these, over 10,000 were attributable to living in a cold home and one in ten excess winter deaths are directly linked to fuel poverty. Warmer homes provide a better environment and reduce health problems. Inadequate heating can exacerbate health problems such as pneumonia, asthma, and arthritis, and can even lead to premature deaths. Investing in energy efficiency can minimise risks to health and wellbeing, at the same time, reducing pressure on health services. In England alone, it is estimated that the cost to the NHS of health conditions made worse by poor housing is between £1.4 and £2.0 billion each year.

Rural areas off the gas grid, who typically pay more for heating fuel, have more to gain from a switch to low-carbon heating. Nonetheless, there are financial challenges that will face low income and vulnerable rural households.

16. Do you have any views on what more could be done to ensure households, and communities, affected by our proposals experience a smooth transition to clean heat? Please provide evidence to support your answer.

As mentioned above, a clear long-term investment programme for upgrading the energy efficiency of our housing stock, raising awareness and public engagement, providing trusted and tailored advice, consumer protections, and supporting supply chains through up-or-reskilling are imperative to help those affected by the proposals transition to clean heat.

17. Do you have any further comments to make on our proposals to phase out high carbon fossil fuel heating in homes off the gas grid? Please provide evidence to support your answer

To ensure that energy efficiency improvements receive adequate funding and long-term policies, the RIBA suggests that coordination across departments could be more effective through a HM Treasury led infrastructure approach.

The RIBA also suggests that improving the energy efficiency of England's building stock must become a national infrastructure priority. To date, buildings have not been seen as part of the nation's infrastructure and have therefore been on the receiving end of less funding on the basis that energy efficiency improvements have not been funded as part of the Government's infrastructure investments portfolio. Infrastructure projects by HM Treasury are valued more highly on the basis that they are deemed to have higher private sector multiplier effects, meaning they are seen to offer better returns on investment.

Previous Government policies, including the Green Deal, have not been successful at incentivising homeowners to improve their energy efficiency. This is for several reasons, including high interest rates and homeowners not being convinced to improve energy efficiency based on energy bill savings alone. The start-stop nature of funding for energy efficiency improvements, which has been the norm to date, has also not helped the situation.

We must understand how our buildings perform to identify the improvements that can be achieved. Measuring operational energy, pre- and post-retrofit, is a vital mechanism for comparison. This will allow for occupants to see the energy reductions and cost savings of the retrofitting improvements. This should be done through Post Occupancy Evaluation.

Finally, the importance of embodied carbon in retrofitting works has not been considered in the consultation. Embodied carbon refers to the carbon emitted from the processes associated with sourcing materials, fabricating them into products and systems, transporting them to site and assembling them into a building. It also includes the emissions due to maintenance, repair and replacement, as well as final demolition and disposal.

There is a risk that homeowners may prioritise low-cost retrofitting solutions which may result in choosing readily available products with high levels of embodied carbon. The Government should introduce embodied carbon targets to help ensure that the materials used are not inadvertently damaging the environment. Embodied carbon is critical when considering the carbon emitted from a building as a whole.

Considering embodied carbon will also increase the demand for low carbon materials. This will help stimulate growth in low-emission manufacturing of traditional materials, promote new low carbon products and will also encourage the use of local materials, driving the built environment to source products from the UK, where possible.

ⁱ https://www.citb.co.uk/media/kkpkwc42/building_skills_net_zero_full_report.pdf

ⁱⁱ <https://es.catapult.org.uk/news/electrification-of-heat-trial-finds-heat-pumps-suitable-for-all-housing-types/>