EUA Manifesto 2017


The UK needs an affordable, sustainable and secure energy strategy now and for the future.

Foreword from the CEO

Elections provide a great opportunity to discuss policies with those seeking office. These discussions should take place up and down the country, with politicians of all persuasions. I hope our manifesto provides the material that can form the basis of discussions around energy policy – in particular around heating and transport.

Energy and Utilities Alliance (EUA) works with political parties across the UK, representing our members and advising on many of the key issues facing our country today – providing affordable, secure and low-carbon energy in the 21st century.

Across the energy sector, we work to try and establish a political consensus that can help deliver the long-term policy framework essential to provide the solution to the energy trilemma in decades to come. We stand ready to meet with and discuss any aspect of this manifesto with those seeking office in June 2017 and those advising politicians.

I hope you find our manifesto thought-provoking and useful.

Yours,

Mike Foster
Chief Executive, Energy and Utilities Alliance

Table of contents

About EUA

The Energy and Utilities Alliance (EUA) is a not-for-profit trade association which provides a leading industry voice helping shape the future policy direction within the sector.

Using its wealth of expertise and over 100 years of experience, it acts to further the best interests of its members and the wider community in working towards a sustainable, energy secure and efficient future.

EUA has six organisational divisions: Utility Networks, the Heating and Hotwater Industry Council (HHIC), the Industrial & Commercial Energy Association (ICOM), the Hot Water Association (HWA), the Manufacturers' Association of Radiators and Convectors (MARC) and the Natural Gas Vehicles Network (NGV Network).

6 Divisions

Executive Summary

Energy policy in the UK has lurched from one silver bullet to the next and EUA are calling on the next Government to commit to a market led, no-regrets process that allows products and companies to find the best, most cost-effective and consumer friendly ways of meeting our carbon reduction goals. We firmly believe that the 80% reduction in carbon by 2050 can be met, but only if government stops picking winners and stops placing artificial barriers that favour one technology or energy source over another, regardless of its ability to meet our carbon reduction goals.

In order to facilitate this EUA believes that there are 5 priority areas that should be acted on:

1. Committing to the future of gas

2. Ambitious policies on domestic heating

3. Carbon reduction from transport, particularly HGVs

4. Better understanding the links between heat and health

5. Building better homes and enforcing standards

Carbon reduction and economic growth can go hand in hand with sensible policies, which is why we are calling on the next Government to listen to the people who work every day to ensure homes can be heated, gas supplies are kept safe and new innovative solutions reach the market. Only by successfully engaging with the industry will our carbon goals be met.

The Future of Gas

Decarbonising heat can be singled out as one of the key challenges facing UK energy policy in the coming decades. Whilst significant progress has been made on promoting low carbon sources of electricity and displacing coal, the decarbonisation of heat and transport has not been met with the same level of success.

The EU's 2020 renewable heat and transport targets specified that 15% of the UK's energy should come from renewable sources, with sources of heat expected to be 12% renewable. This target has been seen as deflecting attention from the focus of achieving *low carbon* heat and it is anticipated that the UK will fall far short of its renewable heat target given that ambitions to meet it have effectively been abandoned.

This section explores the unique position that gas holds in providing the vast majority of the UK's heat demand and how new opportunities for a future of low carbon gas can be realised.

Natural Gas and the UK

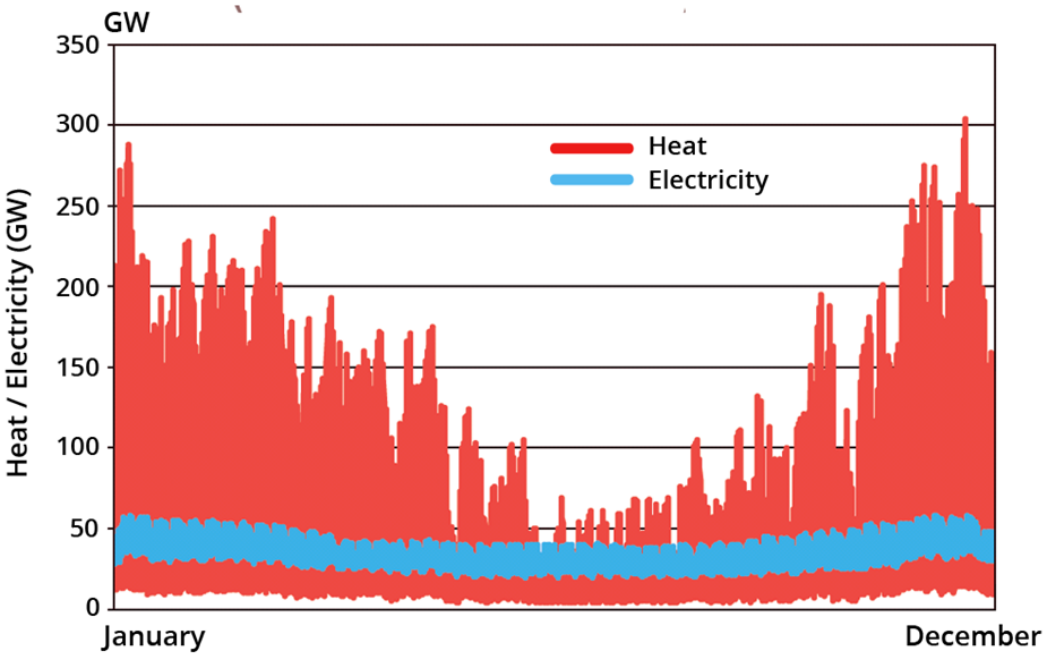
As a result of natural gas abundance, the UK has the world's leading gas grid infrastructure already in place, directly supplying the energy to heat 85 per cent of UK homes. It would be a travesty not to use this existing infrastructure as part of the solution to the trilemma (right), and EUA believes that "green" gas could be the key.

Gas has for the past two hundred years been a fuel that has offered the UK flexibility, be it for street lighting, industrial processes, power generation or heat demand.

Gas currently accounts nearly 50 per cent of UK primary energy needs, for power generation and heat. It also offers the flexibility to back up renewables (wind and solar) when our weather patterns dictate and can be used as baseload too if nuclear becomes unaffordable. However, the undeniable environmental cost is that gas accounts for 40 per cent of the UK's greenhouse gas emissions. This needs to change and therefore green gas must be central to the UK's future energy mix.

Gas and Heat Demand

When it comes to heat, gas is the UK's fuel of choice, and for good reason. The much-used graph (below) by Robert Sansom of Imperial College, demonstrates the challenge. Heat demand is seasonal, but its peaks during the winter either need to be met by supply or people will go cold. So having the energy, in whatever shape, available at short notice to meet peak demand, whilst not having supply sitting idle for much of the year, has to be the energy outcome of choice. In 2010, DECC suggested heat demand could be met by switching from gas to an all-electric solution; this would clearly raise many questions for electricity generation and supply given the extreme variances in demand across the year.

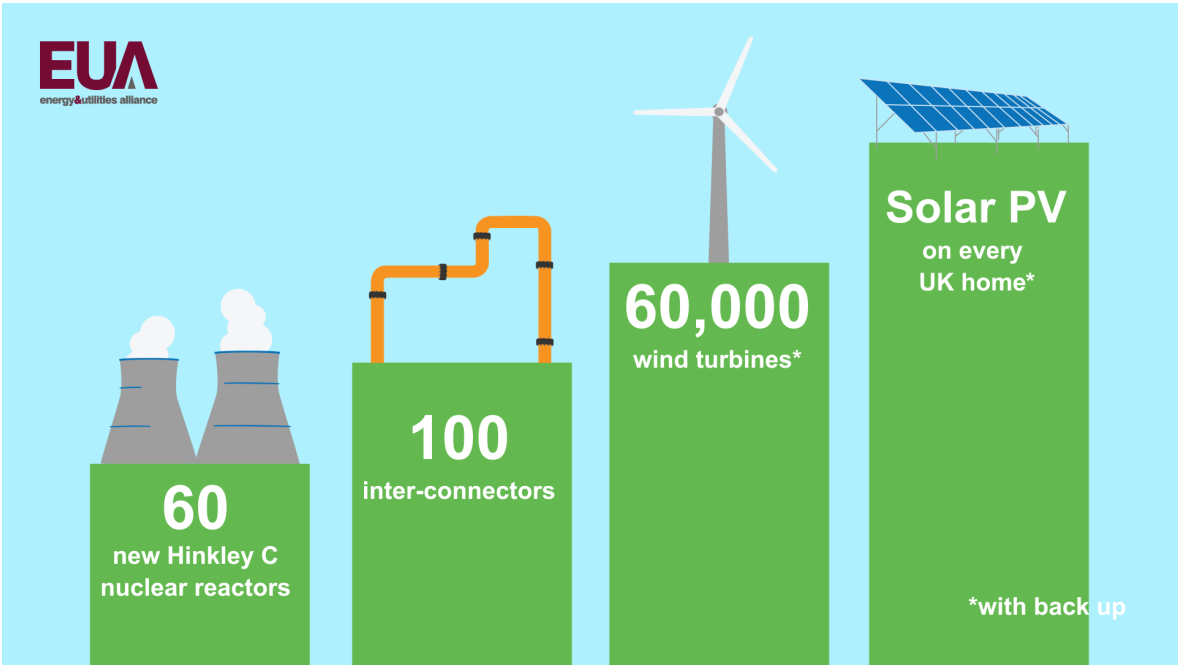


Source: DECC courtesy of Imperial College.

So whilst baseload power generation, either through nuclear or renewables (with gas backup) can cater for the UK's electricity demand, building additional generating capacity to deal with heat demand as well, is simply unaffordable.

Infrastructure: The Full Picture

As shown in the image below, taken from EUA's video on green gas, even after a major energy efficiency retrofit in 26 million homes and businesses, it is estimated that meeting peak heat demand would require the equivalent of 60 new Hinckley Point C sized nuclear reactors, or 100 additional inter-connectors, 60,000 additional wind turbines (with backup) or every UK home to have solar PV (again with back up). On top of that, the UK's current distribution networks could not cope with such extra demands on them.



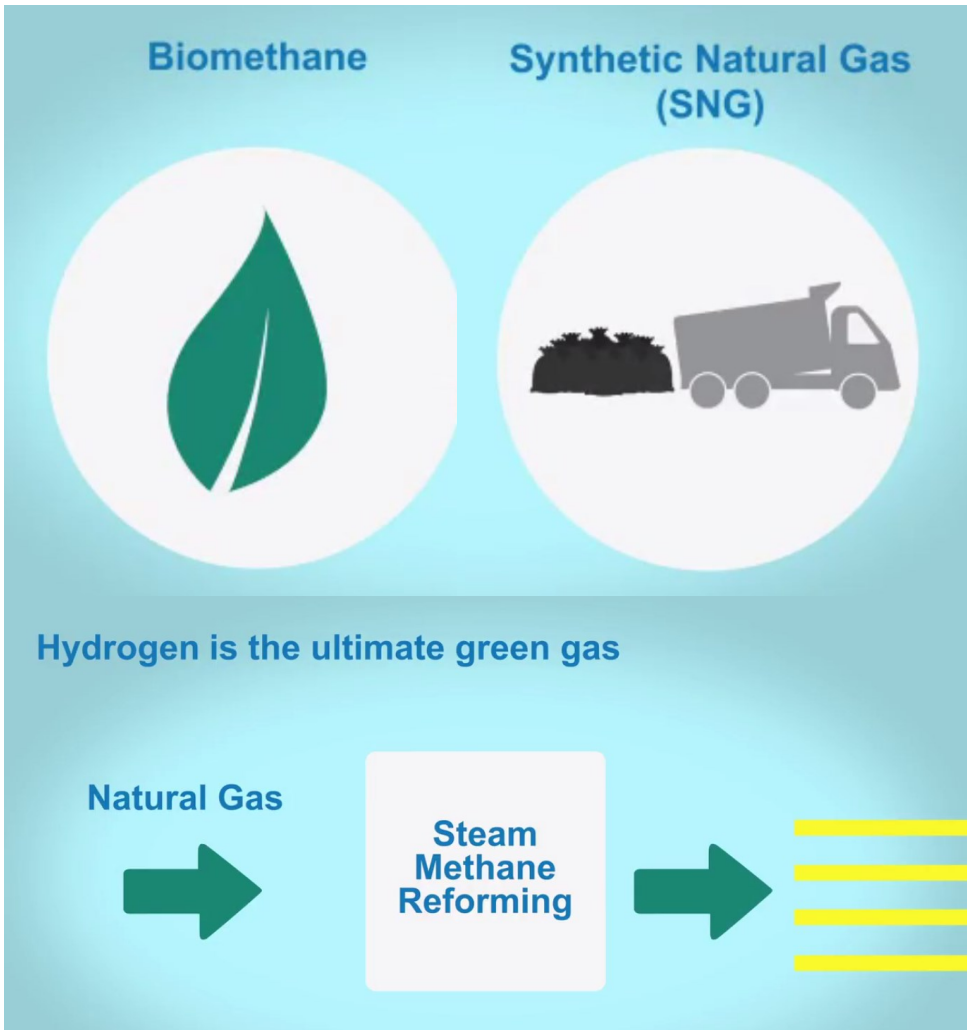
A switch from gas to electric requires householders to fit an entirely new alternative heating system. These are costly changes that the vast majority of consumers can ill-afford. The UK would also need to be entirely re-wired, from power stations to the home in order to keep people warm and meet the climate change obligations which the UK has recently recommitted to. The cost of this huge infrastructure upgrade, equivalent to more than doubling the current electricity grid, would also inevitably be borne by the consumer.

All the time, underground and becoming redundant in an all-electric scenario, sits the UK's gas distribution grid. Developed over two hundred years, and more recently updated with PPE (the yellow plastic pipes) rather than iron pipework, the all-electric scenario renders this hugely valuable piece of UK infrastructure obsolete. That is despite the fact that it currently meets the heating needs of 85 per cent of UK homes. The gas grid would need to be fully decommissioned in order to ensure safety, a process with costs that would run into the billions.

The "Green" Alternative

So if gas can be supplied to the vast majority of homes, meeting peak heat demands, in a cost effective manner then surely it makes sense to see how this source of energy can become "green".

A number of "green" gases are being trialled by industry including biomethane, biopropane, bio-SNG which is produced from black bag waste, and hydrogen. Hydrogen is an exciting long term solution that could eradicate carbon emissions from heating.



EUA would like the next Government to commit to:

Developing a Green Gas Journey

The new Government should commit to developing a plan on how to green the UK's gas supply. This will need to involve multiple departments, linking waste, energy production and supply in order to develop a robust framework. EUA would like to see a clear commitment from the new Government to decarbonising gas.

Increase connections to the gas grid for fuel poor homes

Connecting homes to the gas grid is one of the best ways to take homes out of fuel poverty. EUA would like the new Government to offer greater support to the Gas Distribution Networks who wish to connect more fuel poor homes to the gas grid. We also want greater support for first time central heating systems, especially in rural locations.

Develop framework for Carbon Capture and Storage (CCS)

CCS is essential for the majority of low carbon and renewable energy projects to operate effectively. We would urge the new Government to reverse the previous Government's decision to axe the £1bn CCS competition. We believe more resources should be dedicated to ensuring CCS becomes a commercial reality in the UK by 2030.

Ambitious Heat Policy

The heat decarbonisation policies of the UK Government in the last ten years have had only a limited impact on the vast majority of households. Expensive policies targeted at encouraging the public to switch to a renewable heating source or boost their EPC rating, such as the Renewable Heat Incentive and the Green Deal, have markedly failed to make a meaningful impact on the millions of heating systems installed in the UK.

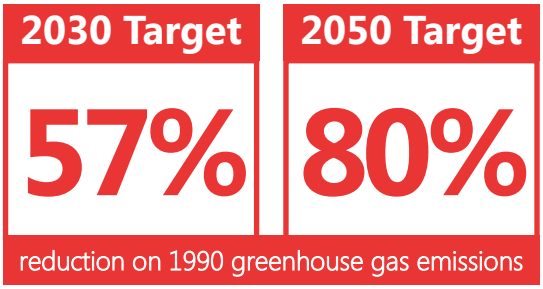
Meanwhile, policies which are simple and focussed on affordability, such as the Mayor of London's Boiler Scrappage Scheme, have been met with a far more positive response.

The new Government will have a significant opportunity to implement ambitious and far-reaching policies on heating which will genuinely appeal to the average household which has so far not been swayed by current measures.

This section details our proposals for a variety of steps which could be taken to help the UK meet its 2050 emissions targets.

Decarbonising Heat in the UK

According to modelling undertaken by the former Department of Energy and Climate Change (DECC), heat related activities account for nearly a third of all greenhouse gas emissions in the UK. Consequently, the decarbonisation of heat is a vital issue that must be addressed if the UK is to meet its 2030 and 2050 emissions targets.



From April 2005, government building regulations meant that all new domestic gas boiler installations should be using a condensing boiler. Arguably this was one of the most successful government interventions into the energy market. Today 99% of all new boilers sold are condensing and there are over 14 million installed in UK homes.

However, since 2005, the Government and the heating industry have been searching for the next 'condensing boiler' equivalent. To date, there have not been any suitable products that could be mandated to save energy. The problem is often unit cost or complexity of installation. In some circumstances, product development has not materialised as expected. The result is that twelve years after the mandating of condensing boilers, the Government has not been able to introduce further legislation to increase the efficiency of the vast majority of heating installations.

Government Action

EUA believes that the next Government should commit to:

Mandating 'Boiler Plus' technologies

In the last few years, manufacturers have started to bring to market many innovative products to help reduce the gas used by boilers to heat a home. These controls don't just turn the heat on and off, instead they manage heat production in the boiler and reduce energy consumption. We define these systems as 'Boiler Plus'. Many new products are classed as 'smart controls' which form part of the next phase of advanced home control technologies sometimes referred to as the 'internet of things'. These controls enable a far greater and more intuitive level of control which enables consumers to fully tailor their heating system to their households' needs.

EUA's paper 'Boiler Plus: The next step in boiler regulations' showed how mandating a step change in heating efficiency could save approximately 1 MtCO2e of avoided emissions at no net additional cost to homeowners. It would also help reduce carbon in line with the UK's 2050 carbon objectives at no additional cost to the UK Government. This why we are asking the next Government to commit to introducing 'Boiler Plus' as soon as possible.

Implementing a heating appliance scrappage scheme

The English and Scottish Boiler Scrappage schemes have been the most successful energy saving initiative in the last ten years, not including those mandated by changes in legislation. They gave vouchers worth up to £400 to households who replaced their old inefficient 'Band G' boiler with a new 'A-rated' heating appliance.

In only two months, during the English scheme, 889,635 tonnes of CO_2 were saved and all with the full support and backing of the English public. It was so successful that the Scottish, Welsh and Northern Irish Governments ran, and continue to run, similar schemes. In Scotland, over 4,000 households have claimed the vouchers, saving around 30,000 tonnes of CO_2. More recently, the Mayor of London also ran a similar boiler scrappage scheme.

EUA are asking the next Government to introduce a scheme to replace the old and inefficient boilers in UK homes. Around 4 million homes have particularly old heating systems we call 'zombie boilers'. These are simple to repair and expensive to replace, often being 'back-boilers'. However, they are extremely inefficient. These systems are not being replaced and therefore the scheme needs to target these 'zombie boilers'. The scheme should also not be restricted to residential homes. There are thousands of commercial properties with old inefficient heating systems.

Recognising the importance of hot water storage

The Government also needs to recognise the importance of hot water storage. Over 80 per cent of new heating systems will be installed without any form of storage. Yet renewables partnered with hot water storage is the only practical solution for turning the renewable energy produced into something useful, and banking it for when it needs to be used.

Hot water storage tanks are the perfect companion for renewable energy sources, which can be inflexible in terms of their energy supply. Hot water tanks can heat the water when the renewable source is generating energy; store it, for use when it is needed. If the Government is serious about supporting energy storage then they need to look at incentivising the installation of hot water tanks rather than more expensive and experimental battery technology.


Waitrose
SCANIA
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safe

Sustainable Transport

There is no doubt that transport-related emissions, and the poor air quality that they can produce, has rightly been rising rapidly up the political agenda. However, concern amongst politicians and Government has so far been largely focussed on electric cars. Whilst personal vehicles make up the bulk of transport emissions, heavy goods vehicles have been overlooked, despite contributing a disproportionate amount to the nation's air quality issues.

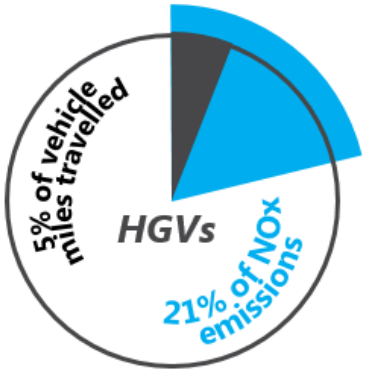
Diesel engines have been singled out as the worst offenders because of their high concentrations of nitrous oxide and particulate emissions, thought to be particularly harmful to respiratory and cardiovascular health.

There are currently no viable all-electric alternatives to large vehicles like HGVs and buses which is why gas-powered vehicles provide a cleaner and practical solution.

Urgent action is needed to support the deployment of gas-powered vehicles and to lower the high concentrations of harmful pollutants in our towns and cities.

HGV Emissions

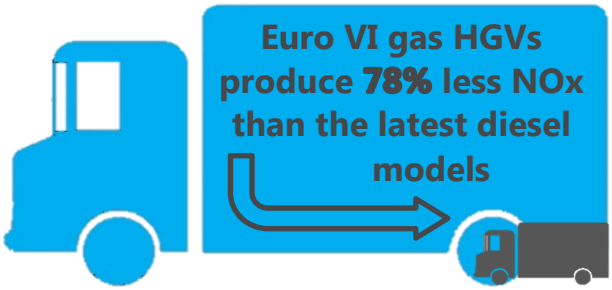
There are around 35 million vehicles operating on UK roads. Over 40 per cent of our road transport CO_2 emissions, along with nearly half the nitrogen oxide (NOx) and a substantial amount of particulate matter is produced by just 11% of these vehicles, comprising light commercial vehicles (LCV), heavy goods vehicles (HGV), buses and coaches. But a staggering 20% of the total transport sector greenhouse gas emissions, however, come from the UK's 208,000 HGVs.



If just one per cent of vehicles (in the four classes above) were replaced by natural gas-powered equivalents, the UK would benefit from a CO_2 saving of over 64,000 tonnes per annum and a reduction in NOx emissions of some 13 tonnes. Unsurprisingly, the emission implications for each of these vehicle classes is disproportionately higher the heavier the vehicle.

The Cleaner Gas Alternative

Recent testing from one leading vehicle manufacturer reveals that new Euro VI gas HGVs can deliver an impressive reduction of 96 per cent less carbon particulate emissions and 78 per cent less NOx emissions, along with a yearly CO_2 emissions cut of up to 19 tonnes per vehicle, compared to the Euro VI emission standard. It also shows that CO_2 emissions would be cut by as much as 100 tonnes per vehicle if biomethane is used. It is clear that in order to reduce emissions from haulage transport the government should be supporting natural gas vehicles.



Action for Cleaner Air

The Government's proposals for Clean Air Zones in five major cities have shown that the model implemented, and currently being expanded, in London can and should be rolled out across the country. However, as the recent defeat in the High Court has proven, more needs to be done and a greater level of ambition from Government is needed if the air in Britain's towns and cities is to be brought up to an acceptable level.

EUA believes that Clean Air Zones need to be defined using the same criteria as that used by London's Ultra Low Emission Zone, including the exemption for gas-powered vehicles which perform far better on the specified pollutants being targeted. The offer enabling local authorities to set up these zones needs to be backed up with funding enabling them to carry out feasibility studies and fund the necessary infrastructure to properly set up and maintain the zones. Mandating certain cities to introduce tough new rules on air quality will only work with proper support from central government. This ought to be viewed as an issue that transcends all parts of Government such as transport, health, education, local authorities, etc. which means that a joined up approach, without one part of Government passing the buck to another, is clearly needed.

In order to support the deployment of gas vehicles, the new Government should:

Maintain petrol-diesel price differential for HGVs

The price differential is essential for maintaining the status of gas as a cheaper and more efficient transport fuel, particularly from the point of view of fleet operators.

More support for Clean Air Zones in areas of high pollution

Local authorities should lead the design and implementation of Clean Air Zones given that they know their areas best. However, given the financial constraints already weighing on local authorities, the next Government must be prepared to offer funding in order to make this vital action to clean up our air a reality.

Dedicated infrastructure support for new gas fuelling stations

Any major change in transport fuel necessitates investment in alternative infrastructure to support uptake. Just as charging points for electric vehicles have received ample funding from the Government, strategic investment should be made available for gas filling stations, primarily to serve HGVs. These filling stations will be the backbone of the rollout of cleaner HGVs and so they must be viewed as a long term strategic investment.

Reduce the cost of connecting filling stations to local transmission systems

Scrap road fund licence for dedicated Euro VI gas HGVs

This currently costs about £1500 per vehicle but nevertheless acts as a barrier to the take-up of gas HGVs, particularly for businesses running large fleets. Given the number of Euro VI gas HGVs compared with more polluting diesel models, this would not be a costly measure for the Government to implement but would provide an added incentive for purchasing cleaner models.

Support diesel scrappage of Euro V or earlier HGVs

This policy would cost around £5000 a unit and would only be awarded if dedicated Euro VI gas model was purchased in its place. As outlined on the previous page, this would deliver very large emissions reductions but would be a familiar format for consumers given that similar schemes have previously been implemented by the Government.

Healthy and Warm Homes

Fuel poverty is an issue which is frequently raised by politicians, charities and public sector bodies. However, very little is understood, or communicated, about the link between warm homes and good health.

Studies have shown that many chronic illnesses, particularly respiratory ones, are made far worse by living in a cold home. This means that being unable to adequately heat a house adds unnecessarily to the poor health of sufferers.

In an age of restricted government spending, getting the best value for public money is essential. This is why preventative measures to stop worsening health is vital to public services, particularly in the healthcare sector.

This section looks at the ways in which the Government could deliver better health outcomes, better standards of living and better value for the taxpayer through innovative energy policies.

Heat and Health

Cold weather is estimated to cost the NHS £1.5 billion a year as it causes, and exacerbates many chronic illnesses, particularly ones that are respiratory. This problem is made far worse when people cannot afford to adequately heat their home. According to DECC's Annual Fuel Poverty Statistics Report 2015, there are an estimated 2.35 million households in fuel poverty in England, 845,000 in Scotland and 386,000 in Wales. The depth of fuel poverty increases with age. On top of that, there are approximately nine million homes that have an old and inefficient boiler.

Equally as worrying is the evidence that living in a cold home can affect a child's life chances from birth. A baby and living in cold housing is also almost three times more likely to suffer from coughing, wheezing and respiratory illness. Studies have also shown that infants living in cold conditions have a 30 per cent greater risk of admission to hospital or primary care facilities. This poor start in life can go to affect children as they enter school where they fall behind their peers who are not suffering from poor health due to fuel poverty.

EUA is calling on the next Government to take the innovative step of marrying up energy policy with health policy in order to deliver better health outcomes and better value for public money:

Roll out boilers on prescription UK wide

EUA is asking that the NHS directly funds the energy efficiency improvement of the homes of families that GPs identify as being at risk, particularly ones with illnesses made worse by living in a cold home. This would reduce the burden on GPs, hospitals and help improve the wellbeing of millions of families.

It would, of course, also reduce their bills and carbon footprint; families in a pilot of this scheme run by the Gentoo Housing Association Group saved an average of £30 a month on their bills once the improvements had been made. As the Gentoo Sunderland project shows, Boilers on Prescription would save the NHS time and money and, more importantly, can genuinely help families with chronic conditions.

Pay the Winter Fuel Allowance in the summer

Bringing forward the payment of the Winter Fuel Allowance into the summer months would offer a cost neutral way to help alleviate fuel poverty for those consumers currently living off the gas grid network. Purchasing heating oil or LPG during the summer months could enable consumers to benefit from lower prices and allow central heating systems to be serviced at a quieter time for installers, improving efficiency and reducing energy consumption.

Efficient, Low Carbon Buildings

Britain has some of the worst housing stock in Europe, as well as some of its coldest winters. Yet Government schemes aimed at increasing the number of energy efficiency measures installed have not met their stated goals.

EPC ratings enable us to identify the location and causes of homes with low levels of energy efficiency. However, there is still a lack of appealing Government incentives that would overcome consumers' unwillingness to commit to high upfront costs and long payback times.

Improving the energy efficiency of Britain's homes will be a vital string in the bow of an effective energy policy. Any new policies must be able to demonstrate the value of greater efficiency to a wide range of consumers.

Some of most inefficient homes can be found in the private rented sector, so this should be an area of interest for any Government wishing to tackle both energy wastage and high energy bills.

This section explores some suggested policies in this area.

Efficiency in Buildings

The UK has some of the oldest homes in Europe and some of the leakiest; we are also not building enough of them. It is widely recognised that we need to be building around 200,000 new homes a year yet current numbers are significantly below these.

EUA would like the new Government to tackle both these issues in a sensible and pragmatic manner, ensuring new homes are thermally efficient and have low carbon appliances installed.

A loan scheme for energy efficiency

The Green Deal was a significant policy failure. However, this does not mean that the concept of loans to pay for energy efficiency measures is doomed to fail. One of the most common complaints of the Green Deal was that the interest rate was too high.

Other European countries, as well as Scotland, have a Government backed Green Bank which uses the Government's backing to lend money to applicants at below market rates. This does not carry a direct cost to the Government and would allow a Green Central Bank to lend money to households wanting to undertake energy efficiency renovation works at very low interest rates.

EUA is asking that the new Government back loan cost loans for anyone wishing to carry out energy efficiency work on their home. There should be no more red tape and minimal paperwork to access the money, otherwise such a scheme would fail like the Green Deal.

Keep the focus on low carbon not renewable

EUA is asking the new Government to not sign up to any 'renewable target'. Instead, the focus must be on reducing carbon in line with our commitment to reduce carbon emissions by 80% by 2050.

Reducing carbon emissions is vital. However, the mechanism for achieving this is irrelevant, provided it is sustainable and has few negative side effects. The increased use of biomass for electricity and heat generation arguably do not meet these criteria. To put it plainly, a singular focus on a short term goal could actually increase carbon emissions and prove detrimental to the UK's ability to meet its more meaningful longer term targets. The new Government must let the market determine the most cost effective route.

Improve the efficiency of rented homes

Legislate so that privately rented homes have at least a condensing boiler, cavity and loft insulation. The table below from the Fuel Poverty Statistics shows that households in privately rented homes are the most likely to be in fuel poverty. The following table and graph from the English Housing Survey shows that privately owned and rented households are far more likely to have a non-condensing boiler.

Figure 3.22: Fuel poverty by tenure, 2003-2014

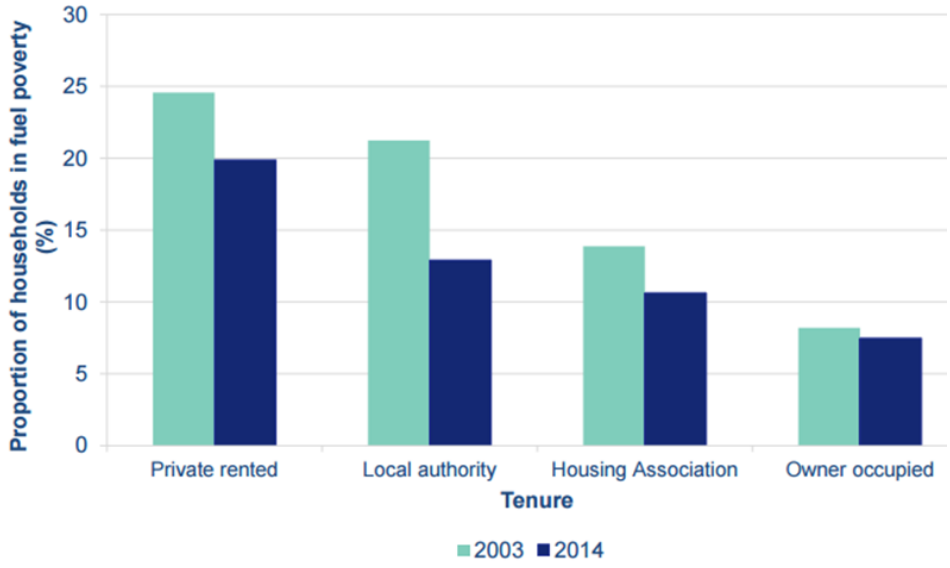


Table DA6101 (SST6.1): Heating - dwellings, 2014

all dwellings

	type of boiler					
	standard	back boiler	combination	condensing	condensing -combi	no boiler
				percentage of dwellings within group		
tenure						
owner occupied	24.1	3.5	12.6	17.3	35.9	6.4
private rented	15.3	2.3	16.3	7.2	41.1	17.9
local authority	10.9	3.8	9.1	12.1	49.9	14.1
housing association	10.3	2.2	10.0	12.5	46.3	18.8

In order to help those households that are in fuel poverty and living in privately rented accommodation, EUA is asking the next Government to legislate to require all privately rented homes to have at least a condensing boiler and cavity and loft insulation (where appropriate). This will elevate thousands from fuel poverty and will not put undue financial pressure on landlords.

Fund proper policing of building standards and regulations

We are calling on the next Government to provide greater funding to the agencies that are currently tasked with policing standards and regulations. Local Building Control and Trading Standards offices need greater funding to be able to carry out their job properly. A well-functioning regulatory framework needs an effective policeman and in recent years that has not been the case. Industry has introduced schemes such as the Benchmark scheme for heating appliances to bring servicing and installation in line with existing regulations. However, greater Government support for these initiatives would be a much needed boost for the industry.

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