



Action for Warm Homes

National Energy Action (NEA) response to BEIS Green Paper: *Building our Industrial Strategy*

Introduction to NEA

NEA is a charity that seeks to end fuel poverty and tackle exclusion in the energy market locally and nationally¹. We undertake key research, advocacy and work collaboratively with partners from local and national government, industry and the third sector to deliver practical solutions to people living in cold homes. NEA has a network of offices throughout England and also has national offices in Cardiff and Belfast which also work to support deprived communities and low-income energy consumers in Wales and Northern Ireland respectively. NEA also works closely with our sister organisation Energy Action Scotland (EAS) to ensure we can collectively provide a genuine UK-wide reach.

In 2016 NEA announced that we would jointly fund the Big Energy Saving Network (BESN) along with the UK Government. The £1.7 million programme supports organisations to deliver a programme of outreach to vulnerable households and train frontline workers to tackle exclusion within the energy market and enable advisors to help vulnerable households make decisions about tariffs, switching, how to access the Priority Services Register and energy efficiency programmes². On the 15th January 2016, NEA also announced the first projects to be funded under a £26.2 million health and innovation programme which brings affordable warmth to over 6,000 low-income and vulnerable households in England, Wales and Scotland. The programme is split into three distinct funds; two programmes are being delivered by NEA – the Technical Innovation Fund and Warm and Healthy Homes Fund³ and the third is being delivered by NEA's subsidiary Warm Zones cic. The Technical Innovation Fund specifically aims to facilitate community-level trials of innovative solutions utilising measures not traditionally within the scope of current retrofit or energy efficiency programmes.

Grant recipients have installed a range of technologies⁴ and are now working with NEA to ensure that robust monitoring and evaluation takes place. Alongside our partners we hope we are providing low income and vulnerable groups the opportunity to be early adopters of the following innovative measures; hybrid and ground source heat pumps, new approaches to park home insulation, district heating, domestic CHP and biomass, new heating control systems; voltage performance optimisation units, heat stores, battery stores and heat recovery systems. There are also several projects trialling smaller complementary technologies with the potential to reduce energy consumption or improve comfort. NEA is committed to ensuring the findings of this work feed into national policy making and we recently responded to the National Infrastructure Commission (NIC)'s Technology Study call for evidence⁵ and a Smart, Flexible Energy System, the Department of Business, Energy and Industrial Strategy (BEIS)'s and Ofgem's call for evidence⁶. Both responses drew on early learnings from the aforementioned Technical Innovation Fund as well as evidence from other programmes and initiatives.

NEA also has a long-standing interest in smart meters and their roll-out in Great Britain, particularly with regard to their impact on vulnerable consumers. NEA has completed a number of research projects into smart meters, including *Smart for All* (Phases 1 and 2) which looked at consumer vulnerability during the experience of smart meter installation on behalf of the UK Government and *An Extra Help Scheme for Vulnerable Smart Meter Customers* which interviewed stakeholders to assess potential models for delivering additional assistance during the roll-out for Citizens Advice. More recently, to help directly overcome access, engagement and savings barriers NEA has become a consortium partner for the Smart Energy GB in Communities programme. The project aims to support vulnerable consumers and tackle potential exclusion in this national infrastructure programme throughout the roll-out of smart meters and In Home Displays (IHDs).

Finally, NEA's Business Supporters Group has been in existence for over 20 years and whilst the charity retains a strong independent voice, our relationships with the business community are very important to the charity. An active relationship with the business community is vital to ensure the fuel poor have the confidence to access current energy supplier schemes and have an equal opportunity to benefit from technological developments. Members of the Group are businesses with wide interests including energy supply companies, scheme managers, energy consultants, boiler manufacturers, insulation and central heating installers and component suppliers, land developers and manufacturers of low carbon and renewable technology products. In addition, NEA works closely with Escos, gas and electricity network operators as well as other key commercial actors. We hope this brief summary of some of our current activities demonstrates how we act collaboratively with a full range of local and national partners.

Background to this response

NEA welcomes the opportunity to respond to the BEIS green paper 'Building our Industrial Strategy'. We also welcome the Prime Minister recently highlighting energy is an essential service, energy prices are highest for those on low incomes and switching alone is not working⁷. We agree that affordability of energy for households and businesses must be a much higher priority across Government. Between 2004 and 2016 domestic electricity prices increased by more than 80% whilst gas prices have doubled, this resulted in the average proportion of a household's income spent on energy also doubling in that time.

Independent commentators such as the Institute for Fiscal Studies have also highlighted how these developments have had a significantly negative impact on the economy and low income households that pay a disproportionately higher percentage of their outgoings on fuel and are most impacted by these changes⁸. In 2004 the UK was also a net exporter of energy. By 2010, more than 25% of UK energy was imported and 40% was gas. Energy imports for gas account for approximately £30m per day (over £10bn per year) and by 2020 dependency on imports for fossil fuels will continue to negatively impact the UK's trade balance. The extent to which the UK can insulate itself from this import dependency (and reduce imports for other raw products such as steel to build new power stations or over headlines) will have a clear key impact on our competitiveness, productivity, security⁹ as well as on all types of energy consumers, particularly the most vulnerable.

In this response we also stress we are disappointed that whilst the green paper recognises the impact energy prices can have on the economy, currently it only investigates this in the context of businesses but not for households and in particular those low-income families struggling to keep their homes warm. NEA and a range of other possible partners would also welcome an enhanced determination to ensure action on energy efficiency continues to be recognised by the UK Government as the most efficient and sustainable way to meet existing statutory targets (carbon budgets, fuel poverty targets¹⁰ and minimum energy performance standards in the private rented sector¹¹) as well as helping to directly stimulate the wider economy. The UK Government's own analysis states¹²:

- ❖ Between 2000 and 2009, energy consumption per UK household fell by 17 per cent. This was mainly driven by a reduction in household consumption for space heating. Had no improvements been made in home insulation and more efficient heating systems since 1970, household energy consumption would have almost doubled.
- ❖ The average new home built in England requires about half as much energy per square meter as the average existing home and two thirds of the 2050 UK housing stock are expected to have been homes built before 2009.

Historic deployment of conventional energy efficiency measures is still benefiting the UK and the economy and in the future the UK Government estimated in their 2012 Energy Efficiency Strategy that cost effective investments in energy efficiency could save the UK 196TWh in 2020, equivalent to the output from 22 power stations¹³. However, despite this progress and the potential, the UK continues to have one of the highest rates of fuel poverty and one of the most energy inefficient housing stocks in Europe¹⁴. In addition, currently no public money is going to be spent this Parliament on improving energy efficiency levels in domestic properties in England - the only nation without a Government-funded energy efficiency programme for the first time in over 30 years, with delivery of home energy efficiency improvements slowing dramatically¹⁵.

Whilst the lack of focus on domestic energy prices or energy efficiency levels was a substantial disappointment, the green paper does rightly note the importance of upgrading our energy infrastructure. We illustrate in our response the wide and compelling evidence for domestic energy efficiency becoming a vital part of our national energy infrastructure. We highlight that by freeing up energy sector capacity to be used elsewhere in the economy this reduces the need to subsidise existing or new energy generation, reduced electricity reinforcement of local distribution networks and facilitates effective domestic energy storage. We illustrate the UK Government's own analysis on the potential to significantly reduce overall energy demand in a highly economic way which improves energy security and moves towards low carbon generation at the lowest cost – and hence limiting energy costs over the long term. Energy efficiency investments also provide public services by reducing energy bills, they decrease the exposure of consumers to volatile energy prices, and by enabling consumers to heat buildings more effectively they increase health and wellbeing. In turn we highlight how this then helps reduce other public costs and can help improve air quality.

NEA also highlights that there is a strong consensus on how the benefits of an enhanced focus on domestic energy efficiency can be facilitated. Last year the Climate Change Committee (CCC) highlighted the Scottish Government has announced that Scotland's Energy Efficiency Programme will be a National Infrastructure Priority. This move has since been emulated by the Welsh Government and the Infrastructure and Wales' Investment Plan aims to drive improvements in the energy performance of buildings and tackle fuel poverty¹⁶. Mirroring energy efficiency as an infrastructure priority consistently across the whole of the UK would help the Government meet its fuel poverty, private rental sector and carbon reductions commitments. According to Lord Deben (the Chair of the CCC) and Lord Stern (Chair of the Grantham Research Institute on Climate Change and the Environment at the London School of Economics) no other infrastructure investment can deliver so much¹⁷. We also highlight that NEA is part of the Energy Efficiency Infrastructure Group (EEIG) which is currently working with Frontier Economics to create an energy efficiency Delivery Vision report which will be finalised in spring 2017. As noted above, this approach has notable support:

Bright Blue 2016

“The economic benefits of incentivising home energy improvements should be viewed in the same way as infrastructure investment, as they comfortably meet the government criteria¹⁸”

Policy Exchange 2016

“Make energy efficiency a national infrastructure priority¹⁹”

Committee on Fuel Poverty 2016

“We believe that the benefits of designating energy efficiency as a national infrastructure priority should be assessed, thereby potentially helping to unlock access to public infrastructure funding²⁰”

ResPublica 2015

“Energy Efficiency should be made a national infrastructure priority²¹”

CBI 2015

“A new government must act swiftly to make energy efficiency a national infrastructure priority²²”

Beyond national leadership, fuel poverty is a large and growing problem in many large towns and cities across the UK. For example, in the capital cold homes affect over a million Londoners, including around 300,000 children. The number of households unable to afford to heat their homes increased by 26 per cent between 2012 and 2014 to more than 348,000 homes and this has prompted the Mayor of London to help Londoners struggling to afford to heat their homes with a fund to replace or repair inefficient or broken boilers. The new fund - called Better Boilers - is the first ever pan-London scheme and will help up to 500 fuel-poor home-owners in London to keep warm this winter by replacing or repairing inefficient or broken boilers with A-rated ultra-low emission appliances, and will reduce annual energy bills by an average of around £150 per household. It also aims to reduce cold-related ill health and winter deaths, lower NOx emissions to help improve air quality and save up to 310 tonnes of carbon emissions a year, contributing to the Mayor's aim for London to be a zero-carbon city by 2050 and help to avoid acute risks such as carbon monoxide poisoning. The Mayor has also committed to producing a Fuel Poverty Action Plan and to reducing bills through Energy for Londoners, his programme on energy and fuel poverty which aims to help Londoners get out of fuel poverty and put London on a path to zero carbon by 2050.

NEA hopes the UK Government will encourage other civic leaders and local authorities to take similar local action and will shortly publish a summary of the local authorities' required reporting under the Home Energy Conservation Act (1995). Monitoring and encouraging greater action in the Core Cities will be a key priority as collectively they account for 22% of the UK's energy demand and are responsible for 27% of England's carbon emissions. Within their Competitive Cities, Prosperous People: *A Core Cities Prospectus for Growth*²³ the Core Cities highlighted that in order to be successful for the long term, cities need to help the most vulnerable in society and tackle fuel poverty, become more self-sufficient in terms of energy production, and reduce energy demand. They went on to highlight that with the right incentives it would be possible to harness the huge purchasing power of cities to drive new solutions leading to increased and competitive local energy supply, lower energy usage and carbon emissions, reduced fuel poverty, huge savings to the public purse and a stronger local business infrastructure.

Finally, NEA calls on the UK Government to ensure the distributional impacts of different energy policies and the recent impact of Brexit on the energy market are investigated fully. In particular, NEA highlights the Government must seek to significantly reform the current structure of the policy exemptions framework as they currently discourage energy efficient behaviour and a similar suitable set of exemptions from energy policy costs should be introduced for those living in or at risk of fuel poverty. NEA also recommends that the ability of the UK to remain part of the EU Emissions Trading Scheme (EU-ETS) must result in the creation of an Energy Productivity Modernisation Fund (EPMF) to finance domestic and non-domestic actions which can improve the UK's national competitiveness and future-proof our economy.

Summary of our key recommendations

- I. The final Industrial Strategy must specifically consider and then address the differing needs of all types of energy consumers; domestic consumers as well as businesses and energy-intensive users
- II. We continue to urge the Government to assess and publish the quantum of the shortfall between domestic statutory targets (fuel poverty targets and minimum energy performance standards in the private rented sector), non-traded activity within carbon budgets alongside current energy efficiency delivery rates. This should prompt greater transparency by ministers and civil servants about what can be achieved via existing policies²⁴
- III. The aforementioned analysis should then be followed by a full Green Book analysis by BEIS, HM Treasury, the National Infrastructure Commission and other relevant non-departmental advisory groups and agencies such as the Homes and Communities Agency and Public Health bodies in England and the other UK nations so the full benefits of meeting these requirements in full is known
- IV. The Government should support the National Infrastructure Commission in making energy efficiency a key national infrastructure priority and its inclusion in the interim and final National Infrastructure Assessment
- V. The impact of Brexit on energy consumers must be investigated fully. Ofgem, NIAER and BEIS should run a call for evidence to clarify which elements of the *Energy Union* and related policies the UK should adopt in a UK context.
- VI. If the UK is to remain part of the EU Emissions Trading Scheme (EU-ETS) it must also create an Energy Productivity Modernisation Fund (EPMF) to finance domestic and non-domestic actions which improve the UK's national competitiveness and future-proof our economy
- VII. An immediate stimulus for the energy efficiency industry and supply chain can be generated if the Government stated clearly how the worst PRS properties in England and Wales will not be rented out from 2018-2020, in line with existing national statutory targets
- VIII. In order to monitor ongoing distributional impacts, the UK Government must recommit itself to report on the impact of policy cost on bills each year with a regular publication linked to the replacement for the Levy Control Framework (LCF)
- IX. The Government's own distributional analysis should include an estimate of how the overall gross contribution of any energy policies, paid for by energy consumer levies, increases the aggregate and average 'fuel poverty gap' for that year in England and work with the Devolved Nations to assess, and report on, how energy policy costs added to consumer bills impact on fuel poverty levels in NI, Wales and Scotland
- X. The burden of energy policy cost on bills should be better balanced between tax payers, electricity and gas customers. In particular, now the Government have continued to implement an exemption for Energy Intensive Users from the indirect costs of the Contracts for Difference (CfDs), Renewables Obligation (RO) and Feed in Tariffs (FiT) schemes these exemptions should be paid for via taxation. This is more progressive as the tax system accounts for differences in income
- XI. If this is not to occur, an immediate priority would be to provide additional relief for low-income energy customers that are reliant on electricity to heat and power their homes as they are hardest hit by policy cost on bills and also have the biggest fuel poverty gaps
- XII. BEIS should work with HMRC, Ofgem and HMT so that suppliers do not recover VAT that is currently applied on top of network and/or environmental charges
- XIII. To support first time gas heating systems in homes which are eligible for connection to the gas network through the Fuel Poor Network Extensions scheme, we ask Government to commit to a £25 million per annum non-gas fund to cover the 18-month ECO transition period
- XIV. Due to the capping of qualifying boiler replacements under ECO a new complementary programme should be introduced urgently. This could take the form of a national Better Boilers scheme
- XV. The UK Government should publish a summary of the local authorities' activity under the Home Energy Conservation Act

Domestic energy efficiency can reduce the UK's energy demand economically

An ambitious energy efficiency programme would capture substantial macro-economic benefits for the UK. The report “Building the Future: The economic and fiscal impacts of making homes energy efficient” produced by Cambridge Econometrics and Verco, noted an ambitious energy efficiency programme can:

- return £3 to the economy per £1 invested by central government;
- help create a 26% reduction in imports of natural gas by 2030;
- save domestic consumers over £8 billion per annum in total energy bill savings;
- increase relative GDP by 0.6% by 2030;
- increase employment by up to 108,000 net jobs; and
- help reduce carbon dioxide emissions by 23.6MtCO₂ per annum by 2030

As noted above, the UK Government estimated in their 2012 Energy Efficiency Strategy that cost-effective investments in energy efficiency could save the UK 196TWh in 2020, equivalent to the output from 22 power stations²⁵. The benefits of energy efficiency have also been illustrated in an international context. The International Energy Agency (IEA)’s report ‘Capturing the multiple benefits of energy efficiency’ demonstrated the potential for energy efficiency to deliver new jobs and economic growth, reduce pressure on health services, improve energy security and reduce carbon emissions (at the same time as providing a long-term, sustainable solution to unaffordable fuel bills for all consumers). The report also found that large scale energy efficiency programmes can lead to increases in GDP of up to 1.1% per year; can create significant employment (8–27 job years per €1million invested) and can have a benefit to cost ratio of 4:1²⁶.

As BEIS will be aware, the Government also determines cost-effectiveness using Marginal Abatement Cost Curves and this ranks specific household interventions (such as wall insulation) based on their cost-effectiveness for abating greenhouse gas emissions. The MACC allows decision makers to assess how much progress is already being made and subsequently consider what it would cost (or save) to make more (or less) progress from that point. The same approach to constructing MACCs for climate change or overall energy efficiency policy can also be applied to fuel poverty and BEIS have established FP-MACCs to assess, at different points in time, what the most cost-effective interventions are and how much progress these interventions could potentially make towards fuel poverty objectives²⁷. The measures included within the current FP- MAC curves highlight meeting fuel poverty targets can be done cost effectively and will generate positive savings for society.

There is also further evidence²⁸ that demand on the electricity network can be reduced through energy efficiency and can be implemented as an alternative to network reinforcement. Alternatives to reinforcement that may be appropriate could be encouraging a distribution network operator to help replace inefficient electrically heated systems; providing a contribution towards connecting a household to a modern efficient district heating or gas network; helping fund solid wall insulation; providing capital towards lighting improvements, low cost energy saving appliances or battery storage alongside microgeneration.

As well as stimulating the economy, improving energy efficiency can improve quality of life

Currently, low-income households living in the least energy efficient dwellings face extra costs to keep warm above those for typical households. In England this can be summed up for all fuel poor households, a so-called ‘aggregate fuel poverty gap’. The difficulties faced by individual households can also be calculated and currently fuel poor households living in the least efficient homes pay an extra £1,345 per year to keep warm compared to a typical household²⁹. These costs are largely outside the control of these households – given the capital investment that would be required to improve their energy efficiency - and instead people rely on trading off the temperatures at which they live against other necessities, exacerbating health-related issues

Currently these issues are so acute, the physical impacts of living in a cold, inefficient home causes unnecessary suffering and premature mortality³⁰ and is a bigger killer than smoking, lack of exercise and alcohol abuse³¹. Excess winter deaths in England and Wales alone were an estimated 24,300 in 2015/16³².

Over a five-year period, the average number of excess winter deaths in England and Wales is 28,218. Based on the World Health Organisation's estimate that a minimum of 30% of Excess Winter Deaths are due to people living in cold homes, an average of over 8,000 people die each winter because they cannot be kept warm at a reasonable cost³³.

Beyond the impacts on the frail and elderly, children living in damp and mouldy homes are particularly at risk; almost three times as likely to suffer from coughing, wheezing and respiratory illness³⁴. Existing evidence also highlights infants living in cold conditions have a 30% greater risk of admission to hospital or primary care facilities³⁵. This in turn impacts on educational attainment, either through increased school absence through illness or children unable to find a quiet, warm place to study in the home³⁶. Home energy improvements have been associated with an 80% decrease in the rate of sickness absence from school for children with asthma and recurrent respiratory infections³⁷. Financial stress about energy bills causes huge anxiety which can exacerbate mental health problems, leading to depression and potentially suicide³⁸. Currently, more than one in four adolescents living in cold housing are at risk of multiple mental health problems³⁹.

Problems such as unhealthily low temperatures and damp are also more likely depending on tenure. In particular, the least efficient privately rented homes (such as poorly converted flats and shared properties such as bedsits and hostels) are causing the greatest hardship and the most acute risks for their residents⁴⁰. Inner city areas have very high numbers and concentrations of Houses of Multiple Occupation (HMOs); 41% of England's shared housing stock is in the capital (195,000 homes)⁴¹. Astonishingly, HMO properties will not be fully covered by national standards for PRS⁴² despite a recent NEA survey which highlighted these worst rental properties have such inadequate heating and insulation that it is impossible to keep them warm and free from damp⁴³. There is also a pressing need to ensure social landlords maintain the historic improvements in this tenure and tackle the remaining stock not improved by the previous Decent Homes programme. This can be achieved by setting a clear aspiration to bring social housing into line with the aforementioned PRS target.

Finally, whilst it is a scandal that cold homes continue to kill thousands of vulnerable people each year, the associated cost of morbidity is equally stark. The current scale of these problems in England alone costs health services approximately £3.6 million per day and in the past four years alone over £5 billion of tax payers' money has been spent treating the symptoms of cold homes⁴⁴. As noted in the introduction, addressing these needless costs through further action on energy efficiency and capturing the full benefits of affordable warmth will help avoid the disastrous costs of inaction.

The impact of Brexit on energy consumers must be investigated fully

On 23 June 2016 the UK voted to leave the European Union. The immediate economic impacts of the UK referendum have already been felt by most UK consumers and can be explained loosely through the '4Ps'; Pound, Profits, Prices and People. The value of the pound has fallen c.20% against the dollar since the UK voted to leave the EU in June's referendum. Whilst the strength of the pound varies and is higher or lower at any one day compared with other currencies, long-term this creates rising import costs which in turn affect company profits. Depending on the extent to which service providers can pass these additional costs through as higher prices to consumers the current low value of the pound and increased inflation badly affects margins as well as people who struggle to afford these essential goods and services.

The impact of the '4Ps' is already particularly evident in relation to the price of energy. Final household energy bills in the UK include wholesale energy commodity costs, transmission and distribution network costs, metering and other supply costs, supplier margins, VAT and the impacts of social, energy and climate change mitigation policies. In recent years, wholesale commodity prices have been one of the main reasons for the extent of domestic price rises. This is the main component of the energy bill impacted by the current low value of sterling due to the extent of imported fuels.

For example, a number of energy suppliers have already increased prices, adding well over £100 a year to over a million fuel bills with increases blamed partly on the increased cost of buying energy in global

markets. The extent to which other energy suppliers will feel able to pass-through increased wholesale prices to protect profits will continue to define the scale of this impact on low income and vulnerable consumers⁴⁵. The UK Government and the regulator Ofgem have a key role in moderating UK households' exposure to market forces. However, for non-regulated energy sectors, consumers are uniquely exposed. For example, the wholesale price of heating oil has risen by 33% in the past year⁴⁶. This may well strengthen the case for providing some regulatory oversight in order to protect these customers.

As well as the direct impacts on energy consumers of higher prices, how much the UK pays for energy overall also has a clear macro impact. As noted in the introduction, as recently as 2004, the UK was a net exporter of energy, however by 2010, more than 25% of UK energy was imported and in five years the United Kingdom has moved from almost gas self-sufficient to 40% gas import in 2010. Dependency on imports for all fossil fuels also negatively impacts the UK's trade balance and energy imports for gas accounted for approximately £30m per day (over £10bn per year). The extent to which the UK can insulate itself from import dependency for fuels (and other raw products such as steel to build new power stations or overhead lines) will have a clear impact on the UK's trade balance. As well as tougher regulatory stances, the UK Government has the ability to insulate low-income consumers from these cost increases through other mitigating actions. NEA believes particular consideration should be given to enhancing investment in energy efficiency measures or other short-term options such as reducing VAT.

The greater opportunity to enhance national competitiveness by reducing energy demand has been highlighted above (and is also explored fully in the next section); however in reference to VAT, the UK Government raises circa £1.73bn every year from VAT on domestic electricity and gas bills. Now the UK will not be constrained by EU rules, HMT could reduce VAT on energy to reflect its status as an essential item in the everyday household budget. Equally, HMT could work with HMRC, Ofgem and the Department for Business, Energy and Industrial Strategy (BEIS) so that suppliers do not recover VAT that is currently applied on top of network and/or environmental charges.

In addition, EU countries have agreed to the following objectives to be met by 2030:

- A binding EU target of at least a 40% reduction in GHG emissions by 2030, compared to 1990
- A binding target of at least 27% of renewable energy in the EU
- An energy efficiency increase of at least 27%, to be reviewed by 2020 potentially raising the target to 30%, by 2030
- The completion of the internal energy market by reaching an electricity interconnection target of 15% between EU countries by 2030, and pushing forward other energy infrastructure projects

The aforementioned *2030 Energy Saving Target* was a key part of the Winter Package and the EU emphasised its commitment towards its new energy saving goal for 2030 and beyond and said this honoured the EU's commitment to put energy efficiency first. Commissioner for Climate Action and Energy Miguel Arias Cañete said: "*I'm particularly proud of the binding 30% energy efficiency target, as it will reduce our dependency on energy imports, create jobs and cut more emissions*". The proposal amends *Directive 2012/27/EU* on Energy Efficiency. The revised Directive amends existing Articles that are directly related to achieving the 2030 targets and whilst there are no national binding targets for the Member States, indicative national targets will be notified to the Commission, expressed as absolute levels of primary and final energy consumption in 2020 and contributions towards the Union's 2030 targets. The Commission's energy efficiency proposals also ask Member States to take fuel poverty (or energy poverty) into account when setting any energy efficiency obligations, by requiring energy efficiency measures to be implemented as a priority in households affected by energy poverty or in social housing. Member States' long-term building renovation strategies should also contribute to the alleviation of energy poverty. The revisions also introduce a few new Articles to extend consumer rights and increased access to smart metering tools, billing and consumption information. NEA believes the 2030 Energy Saving Target and related requirements should be transposed in the UK and the UK Government should enhance efforts to meet the UK's energy saving potential⁴⁷.

The EU has also recently revised the *EU Emissions Trading Scheme (EU-ETS)*. Previously under Article 30 and Article 10 of the EU ETS Directive the Commission stated that a proportion of revenues from auctioning (in phase 3 and beyond) should be earmarked for a range of measures. The Commission specifically listed addressing fuel/energy poverty as a key use of carbon tax revenue, potentially helping to mitigate any price impacts resulting from the policy for low-income households and invest in improving national competitiveness by reducing energy demand. Whilst many EU governments⁴⁸ channelled these resources back to consumers, future-proofing their economies and helping improving national competitiveness by reducing energy demand, the UK did not.

This is despite the UK having one of the highest rates of fuel poverty and one of the most energy-inefficient housing stocks in Europe⁴⁹. Currently no central government funding is going to be spent this Parliament on improving energy efficiency levels in domestic properties in England - the only nation without a Government-funded energy efficiency programme for the first time in over 30 years, with delivery of home energy efficiency improvements slowing dramatically as a result⁵⁰. Meanwhile domestic energy consumers are predicted to contribute an estimated £14 billion to the Treasury⁵¹ this Parliament, through carbon tax revenue and VAT receipts⁵² and without an intervention this additional burden will dramatically impact low-income consumers' ability to heat and power their homes and their life chances.

In July 2015, the Commission published its proposal for revision EU ETS for the period after 2020 and proposes to hypothecate some of the revenue from ETS permit sales and redistribute the proceeds to poorer EU countries. The revised ETS directive states that from 2021 onwards, the share of allowances to be auctioned by Member States shall be 57%. However the 2% of the total quantity of allowances between 2021 and 2030 shall be auctioned to establish a fund to improve energy efficiency and modernise the energy systems of certain Member States as set out in Article 10d of this Directive (*"the Modernisation Fund"*) intended to finance actions in EU countries which have GDPs below 60% of the EU average⁵³. The total remaining quantity of allowances to be auctioned by Member States shall be distributed for sectors or subsectors that are exposed to a genuine risk of carbon leakage. NEA believes all of the proceeds of ETS permits should be retained by the UK Government and used to invest in improving national competitiveness by reducing energy demand in the UK and future-proofing our economy in both the domestic and non-domestic sectors.

Distributional impacts on different segments of society must be considered

We agree that affordability of energy for households and businesses requires a higher priority but we are disappointed that the green paper discusses how to achieve this for businesses, but not for households and in particular those low-income families struggling to keep their homes warm. The Government's final industrial strategy must recognise the circumstances of low-income households leaves them particularly vulnerable to high energy prices, especially when income is exacerbated by other key factors. For example, some households are reliant on more expensive and inefficient sources of space and water heating. Others live in properties where thermal standards of their dwellings cannot easily be improved in a cost-effective manner. Currently off-gas customers need to pay far more than gas customers in a similar property. This is clearly illustrated in table 1, below.

Table 1: Typical space and water heating costs by fuel type Source: Sutherland Comparative Heating Costs, Northern England, January 2016, based on 3-bedroom semi-detached house.

Fuel type	Heating system	Tariff	Annual cost
House coal	Open fire with back boiler	-	£1,363
Electricity	Storage heating, electric radiators + immersion heater	Economy 7 DD	£1,680
Natural gas	Gas-fired condensing boiler, radiators + hot water cylinder	Single tier DD	£1,061
	Gas-fired boiler, radiators + hot water cylinder		£1,272
Liquid propane gas	LPG-fired condensing boiler, radiators + hot water cylinder	-	£1,560
	LPG-fired boiler, radiators + hot water cylinder		£1,893
Oil kerosene	Oil-fired condensing boiler, radiators + hot water cylinder	-	£729
	Oil-fired boiler, rads + DHW cylinder		£886

There is an emerging consensus that different policy solutions are required for urban off-gas consumers, many of whom live in flats and use electricity, and rural off-gas consumers, who generally live in houses and rely on heating oil, LPG and solid fuel. The impacts of policies on bills will be particularly acute for electricity-only customers. CSE's report for the Fuel Poverty Advisory Group (FPAG) and Consumer Focus 'The Hardest Hit: Going beyond the mean' highlighted that, in 2020, consumers with electric heating (11% of all consumers) will be most affected by the cost of Government policies, as well as tending to have lower incomes than those with other forms of heating. These consumers are projected to pay 19% of the total cost of energy policies yet will only receive 7% of the benefits. Currently, only 27% of consumers with electric heating receive some form of benefit from energy policies, compared to 40% of all consumers. The UK Government's own analysis also highlights that whilst policy costs currently represent c.7% (£89) of the household electricity and gas bill; this is set to double to 14% in 2020. The CCC also found that a further £55 would be added to average annual bills from 2013 to 2020, mainly to support investment in low-carbon electricity and a further £75 from 2020 to 2030 due to assumed increases in the carbon price⁵⁴. We are concerned that the Government has not investigated the impact of these policies on the 'fuel poverty gap'. However, the UK Government's most recent fuel poverty statistics do highlight the relationship between increased fuel poverty risk and living in an off-gas property. In particular:

- **The worst properties are more likely to be located off the gas grid:** 70% of F/G-rated fuel poor properties (the least energy efficient housing) are off-gas. Over 70% of F/G properties have expensive and hard-to-treat solid walls and, on average, fuel poor households in F/G properties face an annual fuel poverty gap (the excess amount a fuel poor household needs to spend to keep warm compared to a typical household) of £966 and £1,345 respectively. This is more than triple the average gap across A to D-rated properties
- **Off-gas households are more likely to be in severe fuel poverty:** because they heat their homes with more expensive fuels, fuel poor households off the gas grid experience, on average, excess fuel costs of £670 per year, more than double the average fuel poverty gap of the on-gas fuel poor (£302). Overall, the Energy and Utilities Alliance (EUA, 2017) estimates that households not connected to the gas grid are 1.5 times more likely to be in fuel poverty than those with a mains gas connection
- **Off-gas properties are more likely to be located in rural areas:** the extent of off-gas properties increases with increased settlement dispersal, with only around 5% of urban areas off-gas (Baker et al., 2008). Fuel poverty is more prevalent in rural locations than urban areas and rural households also face a number of other pressures, including declining service provision and reduced employment opportunities

In response, Ofgem has proposed that GDNs will connect 18% more households (91,203 households) to the gas network until 2021 compared to the original GD1 connections target. Whilst in the longer term, a further extension of the gas network may not be compatible with decarbonisation targets, Government should be assisting GDNs meet the targets out to 2021 but there is a funding gap which has detrimentally impacted the delivery of gas connections to fuel poor households. Specifically, households eligible for a gas connection under the Fuel Poverty Gas Network Extension Scheme (FPNES) are often not able to access funds that will cover the cost of the gas central heating system. This issue has been raised by GDNs and recognised by Ofgem. For example, the regulator noted stakeholder responses to an August 2014 consultation on the future of FPNES highlighted a 'clear disconnect between the current relevant energy efficiency schemes (ECO and Green Deal) and the Scheme [FPNES]'. Specifically, the move to ECO/Green Deal was seen to have had a detrimental impact on the accessibility of in-house funding, especially in England⁵⁵. These concerns are borne out in practice. Following an information request, the four GDNs supplied NEA with data on the number of fuel poor connections completed as part of their RII0-GD1 targets to date.

	2013/14	'14/15	'15/16	'16/17*	% of target completed
England	7,377	7,638	8,875	6,722	44
Wales	1,440	1,064	882	404	75
Scotland	4,983	3,699	2,616	1,535	75
Great Britain	13,800	12,401	12,373	8,661	52

*Data was collected in December, estimated figures for 2016/17 are up to end November 2016 *Source: NEA calculations based on data provided by GDNs*

The table above shows that, although GDNs are around halfway to meeting their April 2021 target of 91,203 connections, progress at the regional level is mixed. In particular, connections in Scotland are far ahead of the other nations. With four years remaining to the 2021 target, 75% of the Scottish sub-target of 17,130 connections has been achieved. By contrast, only 44% of connections targeted for England have been completed. NEA estimates a £43.5 million gap over the ECO transition period. Additional funds are urgently needed for private tenure homes in England and Wales where the majority of connections remain for completion. NEA therefore proposes a £25 million per annum non-gas fund and is pressing for this to be committed by the UK Government in its spring 2017 budget to cover the ECO transition period. These funds should be reserved for first time gas heating systems in non-gas homes which are eligible for connections through FPNES. NEA estimates a £37.5 million fund could support an estimated 9,375 households and deliver up to £142 million in lifetime bill savings. The fund administrator should encourage a whole-house approach to connections through pooling funding and delivery resources across GDNs, suppliers and local partners. Existing work highlights that potential exists for the impact of any new funding to be amplified via co-funded initiatives by either local government, private and social landlords, utility companies, electricity network operators as well as other key actors such health agencies, charities and community groups. The exact split of which funds would be available for each GDN area could be based on the current apportionment of the revised targets (see table 4, below) across each GDN area.

GDN	GDN areas								Total	
	England									
	East	London	North West	West Midlands	North East	South	South West	Wales	Scotland	
NGG	12,046	2,880	13,330	8,360						36,616
NGN					14,500					14,500
WWU							12,590			12,590
SGN						10,367			17,130	27,497

In addition, whilst NEA fully recognises the need to decarbonise and maintain the competitiveness of energy-intensive users, we are deeply concerned by the future impacts of exemptions for Energy Intensive Industries from the indirect costs of moving to low carbon energy infrastructure. Without adequately addressing these concerns, the actions proposed will result in a further erosion of the 'polluter pays principle'. These acute concerns are evident as a result of the UK Government moving away from funding compensation via general taxation. We highlight that financing any Energy Intensive Industry exemptions out of general taxation is significantly less regressive and without a reversal this new policy will cost fuel poor households in England somewhere between £115 to £185m over the lifetime of the policy and all domestic consumers (again just in England) broadly between £1.1 to £1.7bn. This additional hardship will put a strain on already stretched public resources and services.

In addition to the negative impacts the current approach to exemptions has on other energy consumers, the aforementioned approach also disincentivises investment in valuable opportunities to truly enhance the productivity and competitiveness of UK businesses. This is in sharp contrast to previous approaches that were negotiated under Climate Change Agreements and government actively encouraged specific energy efficiency improvements within different sectors of heavy industry in order for them to benefit from any form of relief from the Climate Change Levy.

Sources and further information

¹ Please visit www.nea.org.uk

² For more information visit: <https://www.gov.uk/government/publications/big-energy-saving-network-grant-offer-fund>.

³ In Scotland a Healthy Homes Fund is being delivered by Energy Action Scotland (EAS)

⁴ To view the Technical Innovation projects visit: <http://www.nea.org.uk/hip/projects/?s=&hipprogramme=technical-innovation&hiparea=&sortBy=>

⁵ Please click using this link: <http://www.nea.org.uk/resources/publications-and-resources/nea-response-national-infrastructure-commission-technology-study-call-evidence/>.

⁶ Please click here: <http://www.nea.org.uk/resources/publications-and-resources/nea-response-beis-ofgem-call-evidence-smart-flexible-energy-system/>.

⁷ The Prime Minister was speaking at the Conservative Party Spring Forum in Wales on the 17 March 2017

⁸ Household Energy Use in Britain: A Distributional Analysis, Institute for Fiscal Studies and University College London funded by the Esmée Fairbairn Foundation (reference 11-2886) and by the Economic and Social Research Council (ESRC) through the Centre for the Microeconomic Analysis of Public Policy.

⁹ The EU imports more than €300 billion of crude oil and oil products, of which one third comes from Russia. In March 2014, the European Council noted the extent to which this situation had prompted enhanced political concerns and the future of reliable Russian natural gas supplies to Europe can no longer be relied upon⁹.

¹⁰ In England, the statutory target is to ensure that as many fuel poor homes as is reasonably practicable achieve a minimum energy efficiency rating of Band C, by 2030. This is supported by interim milestones. For more information see Cutting the cost of keeping warm:

A fuel poverty strategy for England, UK Government, March 2015.

¹¹ From April 2018, landlords will not be able to rent out properties with energy efficiency ratings below EPC Band E (exemptions apply).

¹² Energy Efficiency Deployment Office Evidence Brief, DECC, 8 February 2012. The publication also noted that in 2010, 24 per cent of UK primary energy demand was lost through energy generation, transformation and distribution losses.

¹³ DECC Energy Efficiency Strategy: The Energy Efficiency Opportunity in the UK (November 2012)

¹⁴ Still the Cold Man of Europe – briefing, Association for the Conservation of Energy, October 2015

¹⁵ CCC, Meeting Carbon Budgets – 2016 Progress Report to Parliament, June 2016

¹⁶ CCC, Meeting Carbon Budgets – 2016 Progress Report to Parliament, June 2016.

¹⁷ Letter to the Times, Lord Deben and Lord Stern, 2nd April 2015.

¹⁸ Better Homes: Incentivising Home Energy Improvements, Hall and Caldecott 2016, p27.

¹⁹ Too Hot to Handle? How to decarbonise domestic heating, Howard and Bengherbi 2016, p.14.

²⁰ A report on initial positions, Committee on Fuel Poverty 2016, p4.

²¹ After the Green Deal: Empowering people and places to improve their homes, recommendation 5, Rosenow and Sagar 2015.

²² Effective Policy Efficient Homes, Confederation of British Industry (CBI) 2015, p2.

²³ Competitive Cities, Prosperous People: A Core Cities Prospectus for Growth, November 2013.

²⁴ The Committee on Fuel Poverty (CFP) have estimated the overall cost of meeting national fuel poverty commitments in England. Overall, an investment of £20bn is required to get all (current) fuel poor homes in England to at least an EPC C by 2030²⁴. According to the Committee on Fuel Poverty²⁴, the Climate Change Committee (CCC)²⁴ and think tanks such as Policy Exchange²⁴ current resources are less than half of what is required to meet these commitments.

²⁵ DECC Energy Efficiency Strategy: The Energy Efficiency Opportunity in the UK (November 2012)

²⁶ Capturing the multiple benefits of energy efficiency, International Energy Agency, 2014.

²⁷ Fuel Poverty: a Framework for Future Action – Analytical Annex (DECC, July 2013)

²⁸ NEA response to the National Infrastructure Commission consultation on the National Infrastructure Assessment, p7

<http://www.nea.org.uk/wp-content/uploads/2016/07/NEA-response-to-the-National-Infrastructure-Commission-consultation-on-the-National-Infrastructure-Assessment-FINAL.pdf>

²⁹ The Government's most recent fuel poverty statistics, "Annual Fuel Poverty Statistics Report 2016". Office of National Statistics

³⁰ Earlier this year the BBC's Panorama also highlighted people are still getting ill and 9,000 people died needlessly because of cold homes in England

³¹ Association for the Conservation of Energy (March 2015) Chilled to Death: The Human Cost of Cold Homes, page 2

³² Office of National Statistics, Excess winter mortality in England and Wales: 2015/16 (provisional) and 2014/15 (final) (ons.gov.uk)

³³ Further analysis on excess winter deaths are attributable to cold indoor temperatures was carried out by Sir John Marmot for Friends of the Earth : The Health Impacts of Cold Homes and Fuel Poverty, Marmot Review Team, 2011.

³⁴ Marmot Review Team (2011) The Health Impacts of Cold Homes and Fuel Poverty. Friends of the Earth and the Marmot Review Team, London.

³⁵ Child Health Impact Working Group (2006) Unhealthy Consequences: Energy Costs and Child Health. Boston, MA: CHIWG.

³⁶ NEA (2013) The Many Faces of Fuel Poverty. Page5.

³⁷ Somerville M et al. 2000. Housing and health: does installing heating in their homes improve

the health of children with asthma? Public Health; 114, 434-39.

³⁸ Christians Against Poverty (2015) The poor pay more: Prepayment meters and self-disconnection.

³⁹ NEA (2013) The Many Faces of Fuel Poverty. Page5.

⁴⁰ Fuel Poverty and Houses in Multiple Occupation, produced by Future Climate and National Energy Action, 2016.

⁴¹ Ibid

⁴² The regulations apply to the domestic private rented sector in England and Wales. This is defined in section 42 of the Energy Act 2011 as properties let under an assured tenancy for the purposes of the Housing Act 1988, or a tenancy which is a regulated tenancy for the purposes of the Rent Act 1977.

⁴³ Fuel Poverty and Houses in Multiple Occupation, produced by Future Climate and National Energy Action, 2016.

⁴⁴ NEA press release, Cold homes claiming needless lives and costing every local Health and Wellbeing Board in England over £27,000 each day, 26 February 2016

⁴⁵ The Institute for Fiscal Studies (IFS) has illustrated that the increases in energy prices have been (and are) disproportionately felt by low-income households. See: IFS Green Budget 2014, 05 February 2014

⁴⁶ Which? - Heating oil prices have risen by 33% in a year, 13 Feb 2017.

⁴⁷ UK Government estimated in their 2012 Energy Efficiency Strategy that cost effective investments in energy efficiency could save the UK 196TWh in 2020, equivalent to the output from 22 power stations⁴⁷.

⁴⁸ According to: The economic case for recycling carbon tax revenues into energy efficiency, Prashant Vaze and Louise Sunderland, February 2014: 13 countries in the EU have pledged to return part of the proceeds from the EU-ETS auctions to climate and energy efficiency programmes.

⁴⁹ Still the Cold Man of Europe – briefing, Association for the Conservation of Energy, October 2015.

⁵⁰ CCC, Meeting Carbon Budgets – 2016 Progress Report to Parliament, June 2016

⁵¹ We estimate that £11.82bn will be collected in England, £1.33bn in Scotland, £690m in Wales and £190m in Northern Ireland

⁵² This analysis of the revenues the Treasury receives from domestic consumers is based on Government sources to estimate how much expected revenue they will receive from a) the European Union Emission Trading Scheme (EU ETS), b) the Carbon Price Floor (CPF) and c) VAT on an average electricity bill. We have then combined this with expected VAT revenues from domestic gas bills. These estimates are all based on the Government's own assumptions regarding energy consumption and this includes an unfounded assumption that EU products policy will increase the domestic energy efficiency of electric appliances substantially

⁵³ Bulgaria 53% Czech Republic 31% Estonia 42% Greece 17% Spain 13% Cyprus 20% Latvia 56% Lithuania 46% Hungary 28% Malta 23% Poland 39% Portugal 16% Romania 53% Slovenia 20%

⁵⁴ Committee on Climate Change, 2014, Energy prices and bills – impacts of meeting carbon budgets

⁵⁵ The Findings of our Review of the Fuel Poor Network Extension Scheme, Ofgem 2015