

Written evidence submitted by Durham Heat Hub (PEG0303)

Introduction:

Durham Heat Hub is a joint project between Durham Energy Institute and Durham County Council. The project aims to bring together regional partners and stakeholders to accelerate heat decarbonisation using research, demonstrators and exemplars which can be replicated more broadly.

Heating and Cooling in the UK contributes to a third of our entire Greenhouse Gas Emissions and is thus a major area for focus and investment in order to achieve Netzero by 2050. The Country has made real progress decarbonising its energy networks and it is remarkable that we have this year experience our longest period of electricity generation without coal since records began, this has been achieved with support from Government to subsidise and reward emerging technology markets, innovation and research. The same support must now be provided to our Heating and Cooling demand.

Most of the heating in our Homes, buildings and industries continues to be delivered by fossil fuels; natural gas remains the predominant source of heating for the vast majority of customers connected to the grid. The prevalence of the gas grid presents a particular challenge to the UK in enabling the necessary shift to low carbon heat and the vast majority of our housing stock will still exist in 2050, meaning that we must prioritise improved energy efficiency, affordable retrofitting of fabric improvements and low carbon heating technologies and ensure that those who are most fuel vulnerable are not left behind by the shift to decarbonisation.

Strong policies and investment are required to ensure that the UK is able to level up, that communities already devastated by the loss of fossil fuel industry are not further disadvantaged, that low carbon technologies are incentivised appropriately and that we also have the workforce skills to meet this transition.

Whichever approaches are taken, the way heating is supplied to nearly 24 million homes, businesses and industrial users connected to the gas grid will need to change. Durham Heat Hub welcomes this consultation and provides the following response compiled through collaboration with Durham University, Durham County Council, North East Federation of Small Business, the Institution of Civil Engineers, the North East Local Enterprise Partnership and National Energy Action.

Our four key recommendations are that Government prioritise:

- *Long term netzero energy policy, which is technology agnostic, regionally appropriate and designed to level up and lead to a closing of the energy poverty gap*
- *Support for renewable heating projects over the longer term (10 years+)*
- *A focus on providing training and reskilling for those areas hardest hit by the transition from fossil fuel based energy*
- *Investment and support for research and innovation in low carbon technologies, services and manufacturing to expand our global markets*

Responses to the questions asked:

- What core/guiding principles should the Government adopt/prioritise in its recovery package, and why?

The Government should ensure that the drive towards decarbonisation is equitable across domestic markets, and that those most vulnerable to fuel poverty are advantaged in access to energy efficient materials, products and services. The Government should also support and incentivise the development of green business, skills and products. Government can lead in this through its own procurement framework and guidance, such as the Green Book.

The Government should prioritise investment in housing retrofit, infrastructure and funding support that will actively achieve carbon and GHG reduction in domestic and non-domestic markets. The government could seek to withdraw funding from those projects and sectors which are not meeting netzero targets.

- How can the Government borrow and/or invest to help the UK deliver on these principles?

The Government has done much to support households and businesses throughout the pandemic. However, in order to “bounce forward” to a greener economy, a long term source of green investment will be required. A national Green Investment Bank could provide a source of support for large projects which can demonstrate carbon reduction benefits as well as social justice benefit. This is better administered through the public sector with clear social benefit priorities for investment and with lower than market interest rates.

The Energy Company Obligation should be reviewed and extended to further subsidise and support domestic insulation and fabric improvements.

Currently ECO levels of funding fall well below actual install costs leaving a shortfall for households to find.

‘Local Energy Markets’ should be supported which allow whole communities and neighbourhoods to generate and trade energy with surplus’s being directed to fabric improvements (Orkney Model)

Greater use of carbon taxes and ‘bonds’ can support the public finances and strengthen incentives to reduce emissions. They are particularly attractive when global oil prices, and therefore consumers' energy costs, are low, as they are now. Particular attention is needed to where the costs and benefits of action fall, given the uneven effects of the COVID-19 crisis.

Better use of Local Authority Home Improvement Agencies and Financial Assistance Policies could be made to support local authorities to provide grants and low cost loans households wishing to undertake retrofit improvements and renewable heating upgrades.

- What measures and support will businesses need to rebuild consumer confidence and stimulate growth that is sustainable, both economically and environmentally?

Investors and consumers require longer term confidence in national energy strategy. A long term strategy should be developed to identify a clear direction of travel and engage with long term green investment, this should ensure that all renewable heat technologies are recognised and demonstrated at scale.

Retrofitting of energy efficiency technologies and products in our housing and building asset is a major area for investment and will create a significant number of new green jobs. A range of proven insulation and renewable heating technologies already exist which could be rolled out at scale using existing local supply chains. The development of the PAS 2035 retrofit standard

though welcome must be further refined not to preclude existing proven insulation methods and the existing supply chain of delivery. The current PAS standard will add unnecessary costs, disincentivise uptake and reduce the scale of delivery.

Durham Energy Institute and Durham County Council have undertaken considerable research into public attitudes to the adoption of these technologies and can help to accelerate this transition (see www.SWlproject.co.uk)

With the new £40m Clean Growth Fund even more innovative low carbon start-ups and businesses should be supported to help us reduce our carbon emissions. The Durham County Council BEEP (Business Energy Efficiency project) has been funded by the EU and has been extremely successful in providing this support

. It is estimated that across the North East and Humber £31M a day is required to address domestic retrofit to bring all homes to only a 'C' rating. Current funding levels of 2bn from the proposed HUG fund will not be sufficient. Much more is needed.

- Whether the government should give a higher priority to environmental goals in future support?

The Committee on Climate Change has warned that the UK is not on course to meet the fourth and fifth carbon budgets. These carbon budgets were set on the basis of the previous 80% target, and will therefore need to be outperformed to achieve net zero by 2050.

Given this situation, it is paramount that a higher priority is given to environmental goals throughout Government operations and policies, including redefining its own assessment of investment to recognise environmental benefit over commercial benefit in achieving a carbon budget. This approach should be taken across all Government departments, ensuring a joined up approach across all, recognising that carbon emissions arise, not only through energy processes, but also through Transport, Farming and Schools policy. The role of digitisation should also be reviewed to ensure that this investment is appropriately directed to facilitate lowered carbon emissions. Our Telecommunications currently responsible for around 10% of total emissions

The National Infrastructure Strategy, due to set a vision for infrastructure development over the next 30 years consistent with Net Zero, has been delayed from Budget 2020. It should prioritise early funding for areas needing public finance that will support the recovery and prepare for Net Zero and require that all new investments should assess and plan for the impacts of climate change. Important priorities include: energy efficiency and avoiding overheating in buildings; electric vehicle charging infrastructure; hydrogen production and carbon storage infrastructure; 5G and fibre broadband; and risk management for flooding and coastal erosion.

A recent Durham County Council survey indicated universal support for a green recovery. The summary of the comments can be found on the Durham Energy Institute website.

<https://www.dur.ac.uk/dei/>

- Whether the Government should prioritise certain sectors within its recovery package, and if so, what criteria should it use when making such decisions? What conditions, if any, should it attach to future support?

As above, the Government should assure that netzero policies are embedded across all Departments and decisionmaking and government investment decision processes should be revised to ensure that environmental and social benefits are a valued and levelised consideration within the package.

Domestic Housing retrofit should be a priority using the existing supply chain and fabric/renewable heating technologies. Investment in this sector will have immediate economic benefit through

employment and building improvement. Investment can quickly be directed to fuel poor households and communities through an established supply chain using proven existing technologies. Fuel poor homes will have increased disposable income due to energy bill savings with income and jobs being generated locally in an established and developing supply chain. In Durham for example we have 57,000 solid wall homes in fuel poor communities that require insulation insulating these over a ten year period would create hundreds of jobs save £11.4M annually in fuel bills and meet Durham's carbon reduction target ahead of schedule.

The Buildings and Heat Strategy, due later this year, must ensure low-carbon heating from is the dominant form of new heating installation by the early-2030s. It should be supported by a national effort to educate consumers, provide support to energy users, and assure safety and comfort as the climate warms. As more people work from home, ensuring energy efficiency within the home becomes an increased priority.

Nationally, there are variations in sector strengths across Enterprise Areas, and these should be recognised when developing support and funding proposals to ensure that the Government aim of "levelling up" is achieved. The Green Transition should also reverse years of north-south disparity and the regional strengths are well aligned to achieve this with proportionate funding.

- How can the Government best retain key skills and reskill and upskill the UK workforce to support the recovery and sustainable growth?

Local Authorities and Housing Associations with direct labour organisations (DLO's) should be incentivised to upskill their own workforce to deliver domestic energy retrofit and renewable heating installations (see for example Nottingham City Council) Many retrofit fabric and heating technologies are technically straight forward and within the skill set of current local authority DLO's. In the medium to long term with guaranteed funding Local Authorities could deliver a significant proportion of the retrofit required.

The IPPR Report "Green and Decent Jobs – Identifying the case for local action" stated Green jobs are often heralded as the solution to the twin challenges of lowering our greenhouse gas emissions and bringing down unemployment. However, very little has been said about what new green jobs might look like - who will be doing them, how much might they pay and where will they be?

Unequal access to jobs, low pay and a lack of progression routes are endemic problems in some parts of the UK labour market. Training and reskilling should form a key part of the National Infrastructure Strategy

*To make the revolution a reality, we make the case for greater action at the **local** level, and by a greater range of individuals and organisations.*

A recent Local Government Association report states that nearly 700,000 direct jobs could be created in the low-carbon and renewable energy economy by 2030, rising to more than 1.18 million by 2050.¹ The report stresses that the input of local councils and Local Enterprise Partnerships will be key. We need regional strategies to deliver this and national support to enable this investment.

Future national and regional strategy needs to fully identify the opportunity for green jobs and skills and ensure that educational establishments, training and standards are in place to support this development. The use of the Apprenticeship Levy to support green jobs and skills development can provide a bridge to higher level Green skills and training, where Universities can work with local businesses to provide the skills and training required. The Chancellors recent announcement regarding new jobs support should also align with netzero aims.

The shift to home working throughout the pandemic has also identified the need for digital skills and infrastructure. Much of this shift has resulted in lowering carbon emissions. Further education

¹ Local Governments Association: Local green jobs – accelerating a sustainable economic recovery (https://www.ecuity.com/wp-content/uploads/2020/06/Local-green-jobs-accelerating-a-sustainable-economic-recovery_final.pdf)

and infrastructure support to the green digital economy is also required and can be provided through University partnerships.

- Is the Industrial Strategy still a relevant and appropriate vehicle through which to deliver post pandemic growth?
 - How should regional and local government in England, (including the role of powerhouses, LEPs and growth hubs, mayoralities, and councils) be reformed and better equipped to deliver growth locally?

The Industrial Strategy provides a clear statement of intention, however, was based on an 80% carbon reduction target and not netzero. The Strategy should be reviewed to ensure that it remains fit for purpose and that netzero policies and an understanding of the broad range of renewable heat and energy efficiency technologies are embedded across all investment and research and innovation funding.
Further consideration could be given to devolution deals for local authority / LEP areas willing to commit to achieving and exceeding netzero carbon reduction levels in exchange.

- What opportunities does this provide to reset the economy to drive forward progress on broader Government priorities, including (but not limited to) Net Zero, the UK outside of the EU and the 'levelling up' agenda?

Following the pandemic, recovery and future resilience, have become a focus for all industries. The green recovery should utilise the emerging online shift to encourage greener behaviours, procuring sustainably and enabling a growing home manufacturing base. The Government's announcement of additional funding for new homes and energy efficiency support is very welcome, however, there is little assessment of whether the sum announced will meet the netzero aims. A robust assessment of the impact of this funding is required, across regions, together with an estimate of additional funding, if required, to ensure that future strategies are appropriately funded and directed towards those regions most in need.

At present, much of the low carbon technology and products required to achieve netzero is imported and the costs of these are likely to increase following Brexit. Encouragement to British Universities and Industry to develop new products and retain country manufacturing in support the "Build, Build, Build" programme, should also be supported, identifying the risks and threat to resilience in relying on overseas supply. University partnerships are well placed to provide incubators for innovation and support demonstrators on a larger scale.

The Covid has demonstrated the limits of NHS ability to manage a surge in admittance. Any newer developments should be constructed with sustainability first. Current heat networks projects that would link well with hospitals have stalled because of NHS red tape and multi layered procurement processes. These contracts need to change to allow flexibility in connection and equip this major institution for a greener future and ability to link with the surrounding neighbourhood energy networks.

- What should the Government do to ensure that delivering on these priorities does not exacerbate the vulnerability of businesses, consumers and communities/workers that have been impacted by COVID-19?

*Businesses, consumers and communities, **need long term strategy** (past the parliamentary term) both nationally and regionally and substantial ringfenced investment to allow stability and long term establishment. The withdrawal of the Renewable Heat Incentive has stalled many renewable heat schemes, these green investment incentive schemes should be extended over a period of several years to allow these projects to be delivered, recognising that projects of this nature can take 2-3 years to develop before construction commences.*

Government also need to ensure that the skills are available within the marketplace, allowing

migration where necessary and supporting training and reskilling of workforce. We do not lead the world in our netzero infrastructure and should work with international partners to ensure that good learning is transferred and adopted quickly. International research and exchange projects towards a green recovery should be supported, prioritising those that are easily replicated, as they have much to offer in accelerating our transition.

- What lessons should the Government learn from the pandemic about actions required to improve the UK's resilience to future external shocks (including – but not limited to – health, financial, domestic and global supply chains and climate crises)?

Covid has demonstrated that work and office, shopping and transport patterns can change substantially, and that the British people can respond to clear messaging and can act in the national interest when asked to do so collectively. This is hugely encouraging when applied to the urgent need to address Climate Change.

The Government must ensure that clear messages are developed around its netzero strategy, the need for regional and individual action and the benefits to the community as a whole to this national effort to reach netzero.

It has also demonstrated the need for the need to assure food, digital networks, access to healthcare and education and exposed the vulnerabilities of those not able to access these.

National Energy Action estimates that over the last five winters the number of excess winter deaths due to living in a cold home is estimated at approximately 10,000 per year. The number of excess winter deaths (EWDs) across England and Wales exceeded 50,000, the highest recorded for over 40 yearsⁱ. The resulting impact on health services is acute; costing the NHS between £1.4bn and £2bn every year, in England aloneⁱⁱ and creating huge needless strain on our stretched health and social care services.

These vulnerabilities would have been exacerbated had this pandemic occurred during winter, where fuel poverty would also have played a part. We need to assure that all of our citizens have access to clean, green heating and cooling regardless of their geography and must have a strategy in place to deliver this within the next 10 years.

- What opportunities exist for the UK economy post Brexit and the pandemic for export growth?

The Heating and Cooling Industry relies heavily on imported products to construct and maintain the infrastructure required to keep Britain warm and cool. Further investment is required to support the research and innovation in developing newer netzero technologies and policies, such as Hydrogen, Thermochemical storage and geothermal, areas where we still lead the world with projects as [Integrel](#) and DEI's solar storage [project](#). This expertise should be promoted, supported and leveraged to develop our Engineering, services and manufacturing base. Low grade heat is available and national and regional planning policies and industry structures should align to favour investment in this technology

The promised growth in Research funding and innovation should be safeguarded and further enhanced with focussed funding to deliver the green and resilient future economy.

- What role might Government play as a shareholder or investor in businesses post-pandemic and how this should be governed, actioned and held to account?

There will be no quick fix, no new North Sea and Oil and Gas to meet the netzero target will require a mix of green solutions, each appropriate to the region and resources available.

For the most part, the funding and financing mechanisms required to support infrastructure's transition to net zero already exist. The key will be adapting and iterating existing mechanisms so they can be deployed where appropriate and are tailored to netzero outcomes. In many instances, this work is already underway within government, including a review of the Regulated Asset Base model and amendments to Contracts for Difference. These mechanisms could also be considered for the deployment of carbon capture and storage technologies, hydrogen infrastructure and other sources of renewable energy, such as geothermal. Energy storage and other emerging technologies should receive enhanced government support, drawing on the successful impact of Contracts for Difference on the renewable energy market.

Long term planning at a regional level is required to assure the levelling up intention. These regional strategies should ensure they benefit from excellent science and aspiration for all, reviewed for environmental and social benefit.

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ⁱ Office for National Statistics, November 2018, see:

<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/2017to2018provisionaland2016to2017final>

ⁱⁱ In 2016 BRE released its revised Cost of Poor Housing (COPH) report, which estimated the cost of poor housing to the NHS based on EHS and NHS treatment costs from 2011 and includes treatment and care costs beyond the first year. It also includes additional societal costs including the impact on educational and employment attainment. Finally, it provides information in terms of QALYs (Quality adjusted life years) as well as cost benefits, and to compare with other health impacts. The report estimates that the overall cost of poor housing is £2bn, with up to 40% of the total cost to society of treating HHSRS Category 1 hazards falling on the NHS. Overall, the cost to the NHS from injuries and illness directly attributed to sub-standard homes was estimated at £1.4billion, and the total costs to society as £18.6 billion.