



Energy As A Common Wealth: A Plan For Cooperative Devolution To Create Green Jobs And Lower Energy Costs

Dr Peter Wood



Environment Commission Report

Executive Summary

The cost of energy is now so high that it challenges the foundations of the UK's economy. Given the need to address climate change and reduce greenhouse gas emissions to Net Zero, we need to face this crisis by rapidly reducing our energy demands. Yet this need not mean shivering in cold and dark homes, or watching workplaces draw their shutters for the last time. By working together we can improve our country, create warm homes, sustainable businesses, and good, green jobs.

We can bring down the cost of energy. Success will, however, take significant effort and coordination, across government, businesses and local communities. For the changes to be acceptable our actions must create greater equality, rather than entrench unfairness. In doing so, our union needs to demonstrate how it supports the diversity of each nation, whilst still promoting cooperation between communities whose bonds stretch across the UK. In other words, our union needs to demonstrate how it is flexible, how it remains up to date, and how it practically improves peoples' lives.

Setting out the scale of the challenge on the cost of energy and Net Zero, this report's first section shows why we can be optimistic. We can build on the firm foundations of the UK's successes in energy efficiency and in reducing greenhouse gas emissions. We can be proud that action on climate change already enjoys popular support or concern across 84% of the UK population, and that our businesses have a history of investing in carbon and energy-saving improvements. More people should know that we are the world's most energy and carbon efficient large economy, improving by over 50% since 1990. From this starting point, accelerating to Net Zero will now save billions of pounds – 0.5% of Gross Domestic Product - creating thousands of jobs that would not otherwise exist.

To take up the opportunities and avoid the costs requires rapid action. Independent analysis has found that most government policy needs to be set by the end of next year. Almost half (47%) of the actions required to reach Net Zero will need to combine effort by businesses, governments and consumers. Progress particularly needs to create a stable framework in which the our 5.5 million Small and Medium Enterprises (SMEs) can invest, UK-wide supply chains can lower prices, and citizens see the benefits of joining in.

The short-term opportunity is in finding ways to reduce the cost of heating space and water, which consumes over half (56%) the UK's energy. The vast majority of this energy comes from burning natural gas to heat homes, with most the rest heating offices, schools, and other public buildings. Perhaps unexpectedly, our immediate priority is not the energy used in blast furnaces and heavy manufacturing, but in catching up a decade of missed investment in

heat efficient homes and workplaces.

By aiming to reduce energy use by 25% we could save households and the country far more than a quarter off their bills. It would also save far more than money. Reducing demand for gas would help to eliminate the extreme price rises caused by our dependency on Russian gas, whilst strengthening Europe's collective defences and support for Ukraine. Reducing demand for electricity would allow us to turn off the more expensive power plants, bring the price down across the National Grid, and sell our surplus renewable energy to the European Union.

In terms of carbon, greater energy efficiency would bring down carbon emissions across residential, public and private buildings, from industry, along with areas of agriculture and waste management. This would address around 40% of our remaining greenhouse gas emissions.

For Scotland, the costs of inaction are particularly great. Whilst our nation's wealth is normal for the UK's nations and regions, our energy use is much larger, making us particularly vulnerable to energy price rises. Per person, our businesses use 40% more than the average, and our homes use 8.5% more. Even as an energy exporter, wasted energy is wasted money and the more we use ourselves the less we have left to sell.

Scotland's vulnerability to energy price rises is compounded by the slow growth of its businesses. We have the second smallest proportion of high growth businesses in the UK. Since the start of Covid we have had the largest proportion of businesses cease trading. To turn this around we need to find new ways to build upon our strengths. As 60% of Scotland's trade is with the rest of the UK, we need to find better ways to maximise the benefits of being in Britain's single market.

To build change that draws together communities, businesses and government, this paper calls for more cooperative forms of devolution. That includes cooperation between devolved nations and regions, and between local governments. Yet it also means empowering civil society groups to play new parts. We need to see trade unions and conservation trusts, cooperative societies and individual volunteers driving greater investment in buildings and businesses, clearing a path for the creation of sustainable jobs.

Our proposals are to establish:

An Energy Cost Council, to draw representatives together from all sides of politics, business and civil society, to negotiate stable agreements on our next

steps forwards. The Energy Cost Council's mission would be to reduce the cost of energy across the UK. Its methods would channel the UK public's popular support for change, accelerating the flow of investment into a new generation of low-carbon businesses and good green jobs.

The Council's rulebook would be set by mutual agreement between the four nations. This would be achieved through the 'Net Zero, Energy and Climate Change Inter-Ministerial Group' being given statutory powers to oversee the Council. The funds made available each year would be calculated relative to the financial benefits of achieving Net Zero, eliminating regional inequality, and reducing the amount of flowing out of the country through buying overseas energy. Given these combined aims, we would expect a budget three times the size of the Levelling Up fund or the European Union Structural Funds, at £3bn per year.

Local Energy and Climate Coalitions would be brought together in local authorities, to raise the baseline for action across the country. These networks would bring volunteers and experts together with local tradespeople and suppliers, to develop the shared expertise that is needed to deliver district-wide change at wholesale prices. They would be supported by experts to identify and popularise practical local solutions to problems, such as the Committee on Climate Change's recommendation that over 4 million heat pumps installed by 2030, with insulation fitted to as many homes as possible.

At a UK level, the government would empower grassroots mechanisms to encourage investment in productivity and energy saving. This should include creating statutory powers for Trade Union 'Energy Reps', giving them similar protections to existing Health and Safety representatives. They would be responsibilities for boosting their trade union branches' focus on accelerating the growth of green jobs. With a need to reduce Scottish carbon emissions by 78% by 2030, they would be empowered to negotiate re-training agreements for 10% of the workforce each year, creating a pipeline of skilled workers for the sustainable economy.

At a devolved level, Tenants and Renters Unions should be formalised, with positions equivalent to Trade Union Energy Reps given a protected voice in the planning and housing system. Empowering and training these groups would increase pressure for investment and energy efficiency in rental housing, benefitting both the climate and the national purse. The priority would be to increase standards in the 11% of households occupying private rental housing.

Sustainable Supply Chain Accelerators would be developed by regional representatives, such as Mayors, to anchor the larger investments that

are needed to achieve the biggest improvements. They would be tasked with identifying opportunities to scale up supply chains, coordinate workforce upskilling, and boost job clusters – creating the practical frameworks through which the annual £3bn funds distributed from the Energy Cost Council could leverage private investment and mass consumer sales. Businesses taking part would be able to access market stability, negotiate bulk purchases, and highlight their openness to investment. Community groups would be charged with representing consumers, citizens, their locally different needs and to develop new links of community solidarity. Cooperation between the Sustainable Supply Chain Accelerators would practically deepen the trade links between each part of the UK. It would build upon the UK's size to reduce the wholesale costs of making nationwide energy improvements.

Personal Energy and Carbon Reduction Accounts (PECRAs) would finally be set up for every one of the 40.4 million working age people in the UK. Initially PECRAs should be a set financial amount that can be drawn upon to fund home energy efficiency improvements, kickstart new businesses, or pay the cost of training and education. It would mean that people wanting to protect the country's wealth and the planet's health are not held back by access to personal finance. Through the Sustainable Supply Chain Accelerators, citizens could pool funds to support new business ideas and gain discounts on products, or to found a new generation of libraries, community spaces and other services that save energy through combined action.

We suggest an opening figure of £1000 per year, for the next three years. This would be focused on reducing the amount of money lost from the country through energy costs, by kick-starting a genuinely popular, mass uptake of Net Zero and energy efficient products. Redirecting spending equivalent to £5,375 per person – less than a year's energy bill for the average household under the worst predictions - would mobilise funding equivalent to the UK's entire Gross Operating Surplus. Consumers would not be encouraged to spend more money, but to redirect their spending at a scale to revolutionise the UK economy.

Devolved leaders would provide a leadership role, using their power to promote strategic opportunities. A 'Net Zero Furlough' could be provided for areas and industries experiencing rapid economic change, giving workers funded time away from work and able to undertake retraining. This would ensure that the economic damage caused by high energy prices does not scar local businesses, whilst helping workers out of declining jobs, and into careers with a brighter future. The Net Zero furlough should operate like the Covid furlough, providing up to £2,500 a month to replace lost earnings.

Putting devolution at the heart of a system of UK-wide cooperation, backed up by real funding, would maintain the best of our union whilst demonstrating that it remains flexible and able to change. For it is only by demonstrating that our union can improve peoples' lives will we rebuild popular support for it to continue. Creating new links across our islands, bringing down the cost of energy and accelerating towards Net Zero, can be the case for a 21st Century Union. We hope you will join us on the journey.

The Energy and Carbon Challenge

2022 has seen the cost of energy take centre stage, whether that is in political leadership contests, business forecasts, or around household kitchen tables. The height of the recent energy price increases has largely been caused by Russia's economic war with Europe, in support of the military war in Ukraine. Whilst prices did start to rise as the global economy bounced back from Covid, the intensity of the increase in Europe is down to Russia controlling a bottleneck in oil and gas supplies. Either way, the Office for Budgetary Responsibility expects natural gas to remain three to four times more expensive than the price before the invasion until 2027.¹

In the short term, reducing demand is an opportunity to save money by reducing how much fossil fuel we need to buy, and by reducing the competition and cost for the fuel still needed. Happily, this does not mean shivering in dark houses and shuttered offices. It means improving homes, accelerating business investment in energy efficiency, and growing businesses with good jobs in low-carbon industries.

In the long term, reaching Net Zero greenhouse gas emissions means increasing our supply of renewable energy. The next three decades will see us continue the shift away from fossil fuels. This means replacing electricity from oil and gas-fired power stations with electricity from wind and wave power, distributed through the National Grid. But it also means replacing fossil fuels in everyday life with electric or hydrogen alternatives – moving away from gas central heating and diesel cars. To effectively minimise the cost of this change, the UK and Scottish Governments' plans cover long timescales, maximising the opportunity for fossil fuels to be phased out as existing equipment reaches the end of its natural working life. Our shared efforts have been incredibly

successful.

In terms of carbon, greater energy efficiency would bring down carbon emissions across residential, public and private buildings, from industry, along with areas of agriculture and waste management. This would address the source of around 40% of our remaining greenhouse gas emissions.²

The UK has successfully achieved the fastest reductions in greenhouse gas emissions of any large economy – with Scotland's renewable energy leading the way. Our Scottish Future's previous environmental report analysed the performance of the UK and Scotland up to 2020, looking at each sector of carbon emissions and government action.³ New figures show that the UK's emissions in 2021 were 10% lower than they were before the pandemic, or 47% below the United Nations' 1990 baseline.⁴ In particular, Covid and the growth of remote working has led to significant investments in new technology, along with a reduction in transport emissions. Making the best of a bad situation, many of the changes in how we live have accelerated the UK's climate progress.

A common desire to prevent climate change is one of ties that binds Britain together. Action to prevent climate change is popularly supported.⁵ 84% of people surveyed in 2022 were concerned about climate change. Around 70% agree that if the 'Government does not act now to combat climate change, it will be failing the people of the UK'.

Businesses across the UK are making strong progress in reducing their carbon emissions. Progress by the UK's largest companies has been internationally leading, as the UK has the greatest share of companies in the Financial Times' 'Europe's

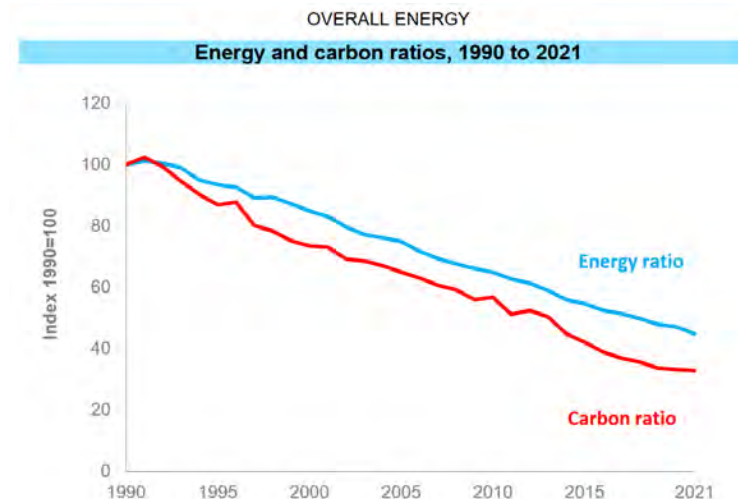
Climate Leaders' list.⁶ The list contains 401 companies with the greatest relative reduction in their carbon emissions, of which 120 – over a quarter of the European total - are based in the UK. The Global Green Finance Index ranks financial centres for the range and the quality of sustainable finance, with London topping the league in 2021. In high streets, business parks and workshops across the UK, two thirds of UK businesses took action to reduce their carbon emissions in the twelve months leading up to October 2021, with another quarter planning to take action in 2022.⁷

Yet the energy price crisis fundamentally changes the debate on climate change. It had been calculated that whilst reaching Net Zero would previously have cost 1% of Gross Domestic Product (GDP) in the short term, it should now save 0.5% of Gross Domestic Product (GDP).⁸ This estimate comes from the UK's independent advisor on greenhouse gas emissions, the Climate Change Committee (CCC). It was founded by the UK Labour Government in 2008 to provide non-political research on climate change, meeting standards of reliability specified by the United Nations. In other words, rigorous independent analysis has found that accelerating to Net Zero would keep billions of pounds in the UK economy, creating thousands of jobs that would not otherwise exist.

To reduce energy prices this winter and to meet Net Zero we need to update our strategy. We cannot build enough new renewable electricity generation to bring prices down this autumn, but we can quickly reduce energy use. And the timing is right. For both Scotland and the UK, the CCC has concluded that to achieve Net Zero by the middle of the century, and so prevent runaway climate change, all remaining policy gaps need to be closed before the end of next year.⁹

Progress to date

The UK has been improving the overall energy efficiency of its economy for many years, so new efforts will not come from a standing start. A key measure of progress is the energy ratio. This measures the amount of energy required to create a given amount of economic value. Similarly, the carbon ratio measures the amount of carbon emissions produced to create a given amount of economic value. Compared to 1990, it now takes less than half as much energy and carbon to produce the same amount of wealth – whether that is in the form of goods manufactured, shops and offices staffed, or health and social care given. The International Energy Agency has estimated that the UK has the lowest energy ratio in the G8, meaning that it is the most energy efficient large economy.¹⁰



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Our historic progress puts the UK in a good starting position to weather the energy crisis, but the scale of the price rise is still unprecedented. Unless the international wholesale costs of oil and gas fall, the overall costs of energy over the coming year are expected to reach around 16% of UK GDP.¹² Around half of this would be household spending. In comparison, research has previously suggested that when national spending on energy exceeds around 8% it causes significant, chaotic economic, behavioural and technological shifts.¹³ In other words, without government support to reduce energy bills, we would expect to see rapid, uncontrolled changes in industry and everyday life, with thousands of businesses shutting down and homes going unheated. However, unless we take action to reduce energy use, the government has effectively written a blank cheque to energy companies that is causing their profits to grow, government debt to increase, and interest rates to rise for everyone.

The next stage of bringing down energy use and carbon emissions will require greater amounts of cooperation and coordination between businesses, particularly smaller businesses, civil society and the general public. Almost half of the required reductions in carbon emissions require changes by both consumers and businesses (47%).¹⁴ For example, installing larger numbers of heat pumps requires that more homeowners and business managers request them, but also for more skilled installation workers to start working in the industry, and for the cost of equipment to reduce. Only 38% of carbon

reduction can be accomplished without consumers changing their behaviour, and much of this change has already taken place. For example, most coal fired power stations have already shut down and been replaced by renewables. A remaining 15% of actions need to be primarily taken by consumers, such as seeking out low-carbon goods, or reducing demand for aviation, or changing diet.

The focus of action will need to change, moving towards the local, to smaller businesses, and greater public involvement. So far, the UK's governments have not produced comprehensive strategies explaining how the different layers of central, devolved and local government will work together. Audits have found that for homes, plans for decarbonising new homes were found to have some risks, significant risks remained for low-carbon domestic heating, whilst energy efficiency (unless the residents are in fuel poverty) were found to be missing or inadequate.¹⁵ For businesses, significant risks remained for industrial resource efficiency, with industrial electrification plans also inadequate.¹⁶ There is an Emissions Trading Scheme (UK ETS) to reduce emissions from larger businesses and energy intensive industries, and for participating businesses it is more stringent than the previous EU trading scheme.¹⁷ However the scheme only covers the approximately 7,700 large companies in the UK with over 250 employees, and not the over 5.5 million smaller businesses that create 40% of emissions.¹⁸

Looking at the needs of Small and Medium Enterprises (SMEs) in more detail,¹⁹ they tend to have limited time and resources. This means government support needs to be 'consistent, joined-up and simple to access'.²⁰ SMEs are least likely to have set a 'Science Based Target' for greenhouse gas reduction, the standard for business commitments endorsed by the UN.²¹ Less than 0.1% of UK SMEs have set such a target, in comparison to 6% of large corporations and 60% of the FTSE100 largest companies. In contrast, smaller businesses' key drivers are 'legislation and government targets, high operational costs, and pressure from customers'.²² Unfortunately, public policy on SME decarbonisation is split across different layers of government, and the divisions between those governments mean there is 'limited coordination with national policy or sharing of learnings'. In this context, whilst the devolved administrations have tended to increase policy coordination within their own jurisdiction, there are few structures to support coordination or sharing between areas in different nations.

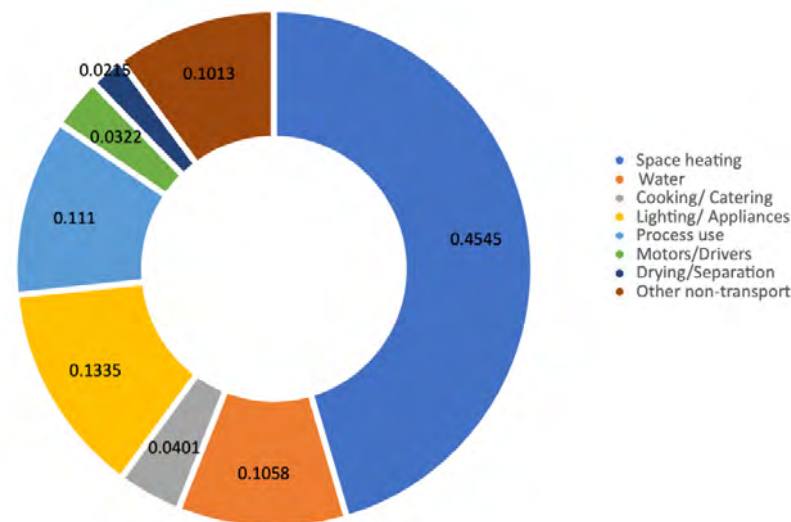
The future will require an increased focus upon actions requiring coordination between consumers and businesses, particularly small businesses. In doing this the government will need to provide a clear, stable regulatory and policy

framework. For businesses, policy aims need to be translated into clear, easy-to-understand targets like the energy or carbon ratio of a business, along with lower operational costs, such as a greater availability of trained workers, and more effective supply chains producing lower prices through greater economies of scale. For the public, individuals and communities need to go past moral support for government action, to more actively seek out low-carbon, low-energy goods and services. In turn, the ability to take up new opportunities is not based on individual moral dedication, but on society-at-large developing a better understanding of where savings can be made.

The costs and uses of energy

Effectively, and contrary to many expectations, reducing energy use and carbon emissions does not mean shutting down blast furnaces and ending heavy manufacturing. Almost half of energy use in homes and workplaces is on 'space heating' – keeping people warm. This dwarfs both the energy used in industrial processes, and the energy used in cooking, lighting, and heating water.

UK Energy End Use - Non-Transport (2020)

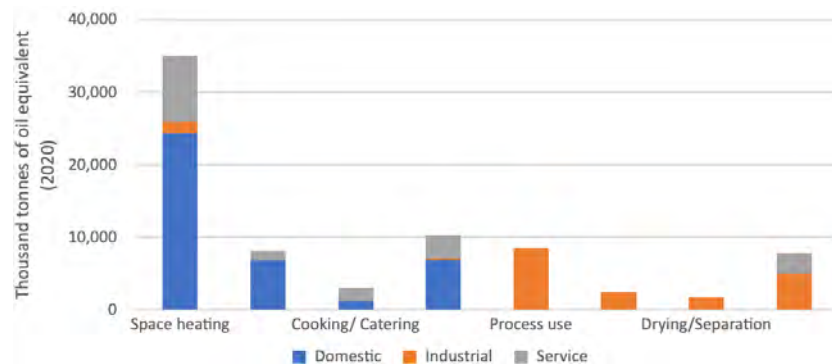


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Subdividing by type of use, over two thirds of space heating occurs in domestic

contexts; peoples' homes. Of this, 78% of homes are heated through gas central heating.²⁴ Most of the remaining energy used for heating is used by services, which are defined as: Community, arts and leisure; Education; Emergency Services; Health; Hospitality; Military; Offices; Retail; Storage.²⁵ Only a small amount is used for heating industrial workspaces. Similarly, lighting and hot water are largely domestic.

UK Energy End Use by Sector



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In the short term, improvements are a question of better insulating homes, shops and offices, or moving to better lighting. In the long term, there are further benefits to be gained from moving to more efficient forms of central heating, such as heat pumps. The Climate Change Committee recommends that 4 million heat pumps be installed by 2030, with as many homes as feasible insulated to the Energy Performance Certificate 'C' standard.²⁷

Our Scottish Future's previous report on transport identified a number of areas where carbon emissions and energy use can be reduced rapidly.²⁸ The short term suggestions were to reduce bus fares, increase the frequency and number of routes served by the bus network, and support the move to a hydrogen bus fleet. Buses are already popular and most able to achieve a like-for-like swap with car journeys in the short term. In the long term, increased rail travel, walking and cycling would further reduce energy use, but require greater levels of behaviour change and new infrastructure.

Returning to domestic energy use, the British public is ready and willing to save energy. Almost 90% of people were aware that reaching Net Zero would mean changing the way that homes are heated. Whilst a quarter of people pay 'a little'

or 'hardly any' attention to the amount of heat they use, most state that this is because their focus is on feeling comfortable.²⁹ As such, improving homes so that a comfortable temperature can be reached with less energy would reduce demand. Better insulation alone is expected to cut domestic gas bills by a fifth.³⁰

A variety of mechanisms will be required to achieve improvements in homes. For owner-occupiers, making up almost 70% of households, the main drivers are motivation and access to finance.³¹ For the 20% in social or public housing, government retains relatively clear abilities to make improvements. For the private renters that make up around 11% of households, new means of raising standards in the rental market may be needed.

Whilst increased energy costs mean greater incentives to make savings, the speed and size of the increase is reducing the ability of consumers and businesses to take independent action.³² Informal analysis by Oxford University's Professor Jan Rosenow has calculated that energy efficiency measures would now pay back around four times faster than they would have a year ago.³³ However, people now have a reduced ability to invest in insulation and energy-saving equipment, with payback over many years, because many are tied in to spending their savings on today's energy bills.³⁴

Some have suggested that a nation like Scotland, which is a net exporter of oil, gas and renewable electricity, should bring down the cost of energy by restricting exports, nationalising or capping the price charged by energy producers. However, energy use which could have been avoided for a lower cost, is energy that cannot be used elsewhere. It is funding that cannot be spent by the government on better things, such as education or healthcare, and energy that cannot be exported and sold to those other countries that would be willing to pay good money for it.

The potential for immediate savings are large enough that some other countries are making actions mandatory. For example, in Germany from the 1st of October: all households must perform heating audits to optimise their heating systems; companies with over 10 gigawatt hours of energy consumption are obliged to undertake an energy audit and must make the suggested investments in energy efficiency; shop doors cannot be left open; whilst lighting for commercial advertising and marketing (such as shopfronts and signs) is banned from 10pm-2pm.³⁵ In Spain, temperature limits have been set for air conditioning and heating systems, doors need to be closed, and after 10pm lights in shop windows must be turned off.³⁶ France has announced similar measures, although on a voluntary basis.³⁷

It may seem surprising that liberal European democracies are making interventions into the detail of whether shop doors are left open and whether families' boilers have been serviced. However, adding up the whole costs of energy, it becomes clear how high the stakes are.

Energy as wealth

The current cost of energy is enough to challenge the continued prosperity of the UK. One of the UK's strengths is the size of its assets and national wealth, built up over centuries of investment in our infrastructure, environment and people. The UK's total net worth was estimated at £10.7tn in 2020, according to the Office for National Statistics.³⁸ Against this, energy costs of £193bn would be around 1.8% of national wealth, either sent up chimneys or sent offshore to buy fuel.³⁹ This has significant consequences for government spending, household savings, and business success, and particular challenges for Scotland.

Government support on energy costs is set to become a huge increase in government spending. The Energy Price Guarantee – the support for households – was estimated to cost between £70-250bn over the next two years.⁴⁰ The Energy Bill Relief Scheme – the support for businesses – is expected to cost £25bn over the next six months, with unknown costs from March 2023.⁴¹ With both set to end in April 2023, the prices predicted under the energy price cap have reached highs of £6,552 per year for the average household.⁴² A leaked analysis from HM Treasury is reported to have calculated that gas producers and electricity generators are expected to profit by £170bn in the next two years.⁴³ These figures are more than the total UK public spending on education, of £100bn, and far more than the £49bn spend on defence.

Spending on energy support is far higher than spending to rebalance the UK's economic geography. The combined value of the Towns Fund and the Levelling Up Fund was £8.4bn up to June 2022.⁴⁴ The EU structural funds returned €10.8billion to the UK between 2014-2020.⁴⁵ Their replacement, the Shared Prosperity Fund, is £2.6bn over 2022-25.⁴⁶ Previous energy policies committed government funding for energy improvements and low-carbon heat in fuel poor homes at £8.2billion by 2026.⁴⁷ The Boiler Upgrade Scheme would be £450 million over three years.

This emergency spending comes after a decade's failure to invest. Had the Cameron government not reduced government funding for energy efficiency improvements in a bid to "cut the green crap", the additional savings would

have been £2.5bn by January 2022⁴⁸ and £13bn by August.⁴⁹ It would have reduced gas imports by 13%, saving £5bn last year alone.⁵⁰

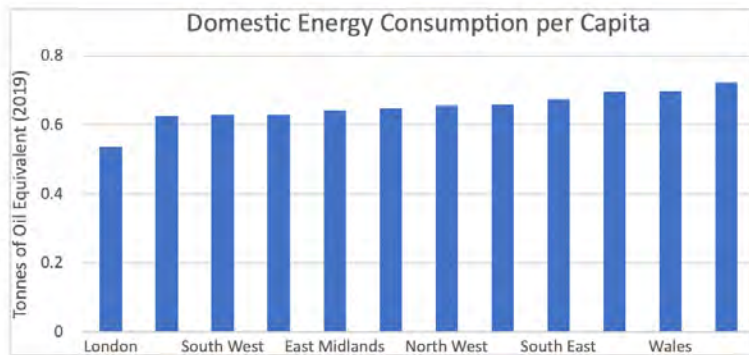
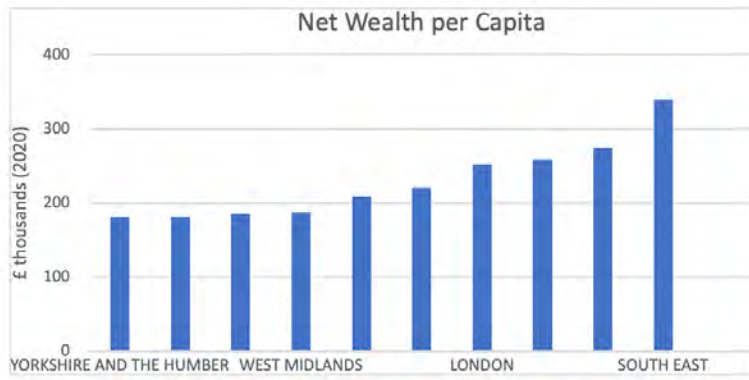
The investment required to reach Net Zero is not, however, expected to come from government alone. The Office of Budgetary Responsibility has estimated that it will take investment of £10bn per year.⁵¹ This is not a large amount when compared to the size of the economy, but it does require businesses and households to seek out their own opportunities to spend on emerging energy and carbon saving products, rather than waiting for a government grant or regulation.

Opportunities for households

Improving the UK's old and draughty housing stock by making it more energy efficient, and healthier to live in, could add significant sums to the UK's wealth. Retrofitting all 29 million of the UK's homes, at 2020 prices, has been estimated to cost £330bn. Doing so would create extra value of around £370bn, a net gain of £40bn.⁵² Cambridge Economics has calculated that a comprehensive program to fit heat pumps and insulation to residential buildings would produce around 150,000 full-time jobs by 2030.⁵³ Further benefits would be gained through a more wide ranging program of work. Analysis from IPPR estimates that a retrofitting programme of £7 billion per year in England alone would create over 400,000 direct jobs and 500,000 indirect jobs by 2030, with 1.2 million direct jobs and 1.5 indirect jobs by 2050.⁵⁴

The energy price cap will have significant effects for the UK's equality. Overall, reducing the cost of energy will have a relatively large impact on lower income households, as they tend to spend a larger proportion of their income on energy and live in homes that are harder to heat.⁵⁵ However, the flat rate of support reduces incentives for higher income households to reduce the amount of discretionary energy they use. It also means that households choosing to use more energy will receive a larger financial benefit.

Although Scotland sits in the middle of the UK's wealth distribution, its households use 8.5% more energy than the UK average, per person, so their exposure to increased energy costs is much higher. High energy prices mean that Scotland will experience a particularly high draining of wealth from local economies, but the energy price cap also means Scotland will receive a particularly high level of support from UK taxpayers.

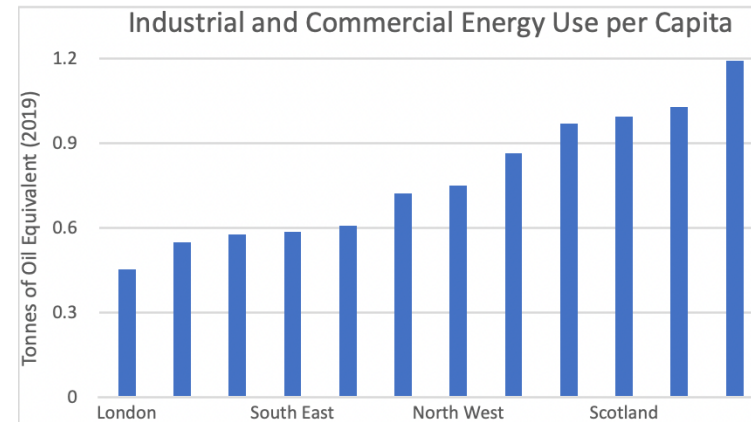


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Opportunities for Business

Companies across the UK are being challenged by rising energy costs. In 2021 the total 'gross operating surplus' (GOS) of all non-financial UK businesses was £427.748bn, according to the Office for National Statistics.⁵⁸ GOS is the total economic output after the cost of intermediate goods, services and wages, but not including depreciation of capital.⁵⁹ In other words, if businesses' energy costs increase by another £129bn, that will wipe out around a third of the combined output of all the UK's non-financial businesses. There have already been reports of businesses closing across the country.

In Scotland, as in the rest of the UK, the amount of energy required to produce the same amount of economic value has been reducing consistently for the past two decades. The carbon intensity has been reducing at a faster rate, due to the faster growth in renewable energy. However, the amount of energy used by businesses in Scotland is 40% higher, per person, than the UK average.⁶⁰ To a certain extent, this is because Scotland has lower energy costs than the rest of the UK, which means that energy-intensive industry has become sited here. However, it does mean that Scotland's wealth and economy is particularly exposed to the negative effects from the increased cost of energy.



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The energy crisis coming so soon after Covid is particularly concerning for Scotland, which had the largest number of businesses cease to operate over Covid. 1.3% of all VAT or PAYE based businesses in Scotland ceased trading in 2020-21, whilst the most resilient English region, the East Midlands, saw the number of similarly sized businesses grow by 2.7%. During 2021-22, another 1% of Scottish businesses ceased trading, with only the South East of England seeing a greater economic hit.⁶²

Because they use relatively more energy, Scotland's businesses and households are due to be hit particularly hard by rising energy prices. This makes it all the more important that Scotland is ready to grow a low-carbon, energy efficient economy.

Laying the Foundations for Recovery

Building the UK's capacity to reduce energy use, boost energy efficiency, and accelerate to Net Zero, will create opportunities for business. The UK Government's Net Zero Strategy aims to support up to 440,000 jobs by 2030. In this a key government responsibility is to build the stable regulatory frameworks that encourage new companies to start up, and for established countries to scale up.

Building green industry and services requires support across the supply chain, helping companies at each stage to attract investment, increase capacity, and reduce costs. As part of this, governments need to ensure a supply of workers with the relevant expertise; creating education and training opportunities, and coordinating employers to ensure that the sector does not only create individual jobs, but agrees to create career structures with chances for progression, improvement and higher wages. The process and time it takes for labourers to enter, train and progress is known as the labour pipeline.

As it is estimated that 80% of the 2030 workforce is already in employment, rather than in education, much of the labour pipeline will be created through in-work training and adult learning, rather than by recruiting those finishing secondary and tertiary education.⁶³ There are currently 40.4m people between the ages of 18-65 in the UK.⁶⁴ The CCC has stated that building these supply chains and labour pipelines requires 'sustained funding and policy clarity'.⁶⁵

There are many examples of how the government can support green growth. One model can be seen in the recent ScotWind auction of rights to develop offshore wind turbines (although equivalent auctions are held across the rest of the UK). Beyond the headline financial offer the bids were assessed according to strict criteria, with contractual terms and timelines that are designed to support the development of supply chains. In a contrasting model, Scottish government support to increase the roll out of heat pumps is focused on grants and loans to homeowners and landlords. This increases overall demand according to a clear and set government policy, so incentivising investment by manufacturers, fitters and other parts of the supply chain. However, it does not involve the government allocating contracts or franchises directly – no one 'wins' a contract to supply heat pumps to houses on behalf of the government.

Stability of support is essential, and if initial promises are withdrawn it can have lasting negative effects. For example, the unexpected cancellation of the 'Green Homes Grant' in England and Wales meant that large numbers of specialist companies shrank or ceased trading, investments made in the supply

chain were lost, and workers left the industry.⁶⁶

In skills funding relatively small amounts of funding are needed - the UK government has made £65m funding available through the Strategic Development Fund and £15m through the second phase of the Public Sector Low Carbon Skills scheme. More importantly, and as has been commended in the Scottish government's Climate Emergency Skills Action Plan, training should be targeted at local economic needs and including local businesses.

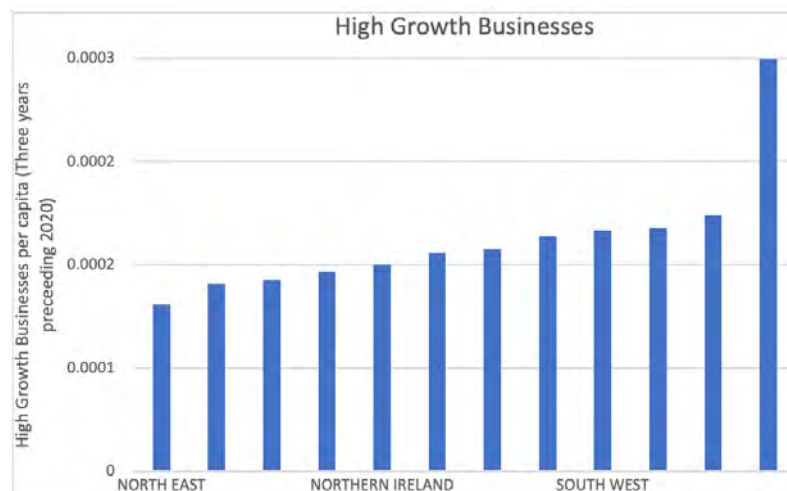
Government can also prepare the ground for private investment, whether from venture capital and private equity, or small business and consumer banking. Government backed 'Green banks' and regional development banks are often designed to prepare the ground by distributing small grants and loans that create a track record of reliability. For example, according to the Coalition for Green Capital, 99.62% of US State and local green bank loans have been repaid to their lender.⁶⁷ Where the sustainability was once seen as high risk and struggled to access funding, it can now attract larger amounts of capital, using this to grow businesses and create jobs.

Businesses and their employees are also able to drive change in a way that government cannot. To take the example of home heating, consumers looking to learn about their options have relatively limited trust in manufacturers, energy advice websites, friends and family, energy suppliers, housing associations or landlords.⁶⁸ The government is relatively trusted, by 36% of those surveyed. The most trusted, by 46% of people, are tradespeople such as builders, plumbers and joiners.

Cooperatives cross between the community and trust-building capabilities of voluntary groups, and the independent, sustainable and significant finances of business. Research indicates they are particularly able to change opinions and drive action in groups that are marginalised from mainstream environmental and economic debates.⁶⁹ UK cooperatives had 13.9 million memberships across more than 7000 co-ops in 2021.⁷⁰ That means there are almost as many co-ops as there are private companies with over 250 employees. Acting as a resilient anchor in their local economies, supporting over a quarter of a million employees, cooperatives were over four times less likely to be dissolved during 2020 than non-cooperative businesses.

Once the supporting frameworks for green growth and jobs are in place, the next challenge is to found new companies and expand established companies. For Scotland, a key problem across the whole economy, not only the green economy, is that relatively few Scottish businesses are producing new jobs fast enough. We have a particularly small number of 'high growth' businesses,

defined as an average of 20% growth in employees over a three-year period. Scotland also has relatively few very small or very large companies, giving a relatively high proportion of businesses with 10-50 employees. This is likely to be linked to Scottish Businesses' relatively low spending on Research and Development.⁷¹



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Finally, in developing new opportunities, supply chains and labour pipelines, the trade within the UK is an essential, under-recognised market. Looking at Scotland's trade links, 60% of the nation's trade is with the rest of the UK.⁷³ Exports to the EU are less than a third of the size, at £16.1bn, and less than the £17.7bn exported to the rest of the world. A significant part of the growth in energy efficient, low-carbon Scottish businesses will be achieved through links with the rest of the UK's supply chains, workers and consumers. A successful recovery from the energy crisis will require government at every level to cooperate, to ensure that the UK's internal market is effectively creating opportunities for a growth in green jobs. However, the challenge goes beyond the economic.

Cooperative Devolution

To rapidly reduce energy costs, households and businesses need to make a range of changes. There is no single silver bullet. In turn, reaching Net Zero by

the mid-century will require policy to be set within the next year, covering every level of government. But this also creates an opportunity – the funding required to solve the energy price crisis can be used to turbocharge the structures set up to achieve Net Zero. These structures take in three levels - UK-wide, devolved, and local government - with measures to coordinate action between governments, businesses and the public a priority.

At the UK level, the two main governmental mechanisms to coordinate action on climate change are centralised to Westminster. This involves the 'Climate Action Strategy' cabinet sub-committee, chaired by the Prime Minister, and the Climate Action Implementation cabinet sub-committee, chaired by the COP26 president. Both are supported by a small part of the Number 10 Delivery Unit.

Devolved government in the UK is highly variable. Overall, some type of devolution now covers 43% of the UK population.⁷⁴ All 5.5m residents in Scotland, 3.2m in Wales and 1.9m in Northern Ireland, are governed by an elected parliament or assembly with extensive powers. Ministers from the four nations are able to come together at a bimonthly 'Net Zero, Energy and Climate Change Inter-ministerial Group'. This supports discussion and coordination of new policies, as well as providing a point around which each nation's civil servants are able to engage with their counterparts.⁷⁵ However, CCC analysis found that it was unclear how far the devolved administrations were able to shape the UK-wide Net Zero Strategy.

In England, the 12 Combined Authority Mayoralties announced to date take in 1/3 of England's residents, or 18.7m people.⁷⁶ They have fewer powers than Holyrood, the Senedd or Stormont, particularly over health and education. However, Mayors have many powers in Transport, Economic Development and Housing that are key to solving the energy crisis.

Local Government is directly responsible for 30% of the carbon reduction required by Net Zero, largely through their responsibility for delivering local public services, such as education, waste disposal, and road maintenance. They are also an essential influence on 80% of reductions.⁷⁷ Clear plans for how local governments are expected to act have not been produced. The National Audit Office's independent analysis found that the funding available to local authorities for Net Zero is 'highly fragmented and inconsistent'. The CCC's 2022 progress audit found that 335 have a Climate Action Plan or equivalent, whilst 74 do not.

A new mechanism for building public trust at all levels is the convening of 'Citizens' Assemblies'. The largest citizens' assembly on climate change was called by the UK parliament in 2020. Another 25 have been run by local

authorities, Mayoralities and devolved governments over 2020-21, including the Scottish Government. These are small groups of non-experts brought together to examine different potential courses of action in detail, particularly when the topic is complicated or controversial. Their benefit is not in the number of people taught about a topic, or in answering a clear single question (as in a referendum), but in gaining a detailed sense of peoples' opinions. The process is intended to improve public approval and trust in the subsequently developed policies. Effectively they function as a 'reality check', allowing proposals to be refined and the outcome given a 'kitemark'.

A further tier of bodies sitting between local and devolved government, holding powers over economic development are Scotland's 'Regional Economic Partnerships' (REPs)⁷⁸ and England's 'Local Economic Partnerships' (LEPs).⁷⁹ REPs and LEPs are relatively small organisations responsible for coordinating the strategic economic development of 'functional economic areas'. These are the scales at which the local economy and its key markets operate. For example, the area within which most people commute for work or education, or the area over which a particular specialist industrial cluster is concentrated. An urban local authority will often be smaller than the city's functional economic area, such as the way that Glasgow City Council only covers the central part of Glasgow. More rural local authorities often include multiple functional economic areas, such as how Fife or the Highland Council contain a range of towns and cities. These partnerships coordinate activity as a partnership between local government, businesses or business representative groups, and civil society or community groups.

Scotland has 8 REPs, whilst there were originally 39 independent LEPs in England.

- Glasgow City Region
- Aberdeen City & Shire
- Edinburgh and South East Scotland
- Stirling & Clackmannanshire
- Tay Cities Partnership
- Ayrshire
- Inverness & Highlands
- South of Scotland

A criticism of REPs and LEPs has been that their leadership is not directly, democratically elected, nor drawn from a broad base. A common feature of

English devolution has been that a newly created Mayorality will absorb the LEPs for its area, so reducing the number of independent LEPs over time. A further criticism, particularly of LEPs, is that they tend to incorporate local business elites rather than representatives from small businesses, civil society and community groups.⁸⁰

For the purposes of coordinating improved supply chains and consumer demand, the exclusion of civil society and community groups is significant. These groups are able to access and influence people in ways that neither government nor businesses are able. In the UK, trade unions are by far the most influential type of membership organisation. There were 6.44m trade unionists in 2021, making up almost a quarter of the workforce and organised into branches across the country.⁸¹ This does not include the National Union of Students (NUS), with an additional 6m members in local schools, further education colleges and universities.⁸² This does not include the growing number of 'community unions' that are not linked to employment, such as the thousands of members of Tenants or Renters Unions. The leading groups in the environmental and heritage movement are the National Trust with over 5.7m members, alongside an additional 314,000 members of the National Trust for Scotland, with communities engaged in preserving land and historic buildings. The Royal Society for the Protection of Birds (RSPB) has 1.1m members, larger than all the UK's political parties combined.⁸³ The combined membership of the 46 local Wildlife Trusts then sits at over 876,000, with members active in a range of local sites.

The shape of civil society differs in each of the UK's four nations. Membership of political parties is highest in Scotland, followed by the south of England and London, but it often has a lower turnout at elections than either England or Wales. Membership of trade unions is highest and rising in Wales, and whilst Scotland is close behind its trade union membership is falling. Scots are more likely to volunteer than residents of Wales or Northern Ireland, but those in England are most likely to have volunteered in the past year.⁸⁴

Any new political structures will need to work with these existing building blocks of government, business and civil society. The challenge is to bring them together more effectively, so that they coordinate action across the whole range of measures needed.



THERE IS
NO PLAN
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Energy Cost Council

Solving the energy crisis can be an opportunity to amplify the strengths of Scotland, whilst strengthening our bonds of cooperation across the UK. Our proposal is to convene an Energy Cost Council. This would draw on representatives from all sides of politics, business and civil society, to develop grassroots agreements on how to move forwards. The Energy Cost Council's mission would be to reduce the cost of energy across the UK. Its methods would channel the UK public's popular support for change, accelerating the flow of investment into a new generation of low-carbon businesses and good green jobs.

The Energy Cost Council would be established through each of the four nations mutually agreeing the collective rulebook, or any subsequent changes to it. This would be achieved through the 'Net Zero, Energy and Climate Change Inter-Ministerial Group' being given statutory responsibility to oversee the Council, with the finances being guaranteed by the UK government. The funds made available each year would be determined by the Office of Budgetary Responsibility, through estimating the amount needed to meet mid-century Net Zero targets, eliminate regional energy inequality, and the financial benefits from reducing our current outflow of wealth on energy use. Practical energy saving would then start in local businesses and the community grassroots, scaling up to deliver savings and improvements across the country.

Given these combined aims, we would expect a budget three times the size of the Levelling Up fund or the European Union Structural Funds, at £3bn per year.

Local Energy and Climate Coalitions would be convened in local authorities, to map the strengths and needs of every area. This would take place through

training and recruiting local businesses, community groups and individuals, creating opportunities to learn the particular specialisms and hurdles of their local energy economy. A nationwide network of coalitions would raise the baseline for action across the country. It would increase the number of people with the knowledge and networks needed to champion practical change. For example, it would bring groups of volunteers together with local tradespeople and suppliers, to develop the shared, locally-specific expertise that is needed to deliver district-wide change at wholesale prices. They would be supported by experts to popularise practical local solutions to problems, such as the Committee on Climate Change's challenge to fit over 4 million heat pumps and fit insulation to as many homes as possible.

At a UK level, the government would empower bottom-up mechanisms that encourage investment in productivity and energy saving. Key to this, it should give Trade Union environmental representatives the same protections as those responsible for Health and Safety, or for workplace learning. These 'Energy Reps' would be responsible for boosting their trade union branches' focus on the growth of new green jobs. This would include negotiating with employers to ensure that their workforces are trained and ready to take up opportunities in a Net Zero and energy efficient world.

With a need to reduce Scottish carbon emissions by 78% by 2030, and 80% of the 2030 workforce already being in employment, they would be empowered to negotiate re-training agreements for 10% of the workforce each year, creating a pipeline of skilled workers for the sustainable economy.

At a devolved level, governments should formalise the establishment of Tenants and Renters Unions, including positions equivalent to Energy reps. These would be given a protected voice in the planning and housing system, supported to increase standards in the 11% of households occupying private rental housing. The new unions would uniquely improve efforts to accelerate the improvement and energy efficiency of rental housing, benefitting the both climate and the national purse.

Having empowered a range of local people in striving for change, the Energy Cost Council would strategically draw them together. This would anchor the larger investments that are needed to achieve the biggest improvements.

Sustainable Supply Chain Accelerators would be developed by regional representatives, such as Mayors, LEPs and REPs. Bringing energy and climate coalitions together at the scale of cities and counties, they would be tasked with identifying opportunities to scale up supply chains and boost job clusters. This creates the practical frameworks through which the annual £3bn funds distributed from the Energy Cost Council could leverage private investment and mass consumer sales. Businesses taking part would be able to access market stability, negotiate bulk purchases, and highlight their openness to investment. It effectively develops a ScotWind framework for other sectors of the economy, supporting them to attract investment and create new jobs.

Within their home area, accelerators would be tasked with bringing SMEs and community representatives together to coordinate workforce upskilling, identify weaknesses and develop industrial clusters with specialisms in local energy efficiency and cutting carbon. Their focus would be on addressing the gaps left behind by existing policies' focus on the largest employers. Accelerators themselves would be allocated strategic funding to renovate and retrofit brownfield sites, to ensure a local supply of energy efficient business properties that are suitable for growing SMEs.

Devolved representatives, such as Ministers, Mayors and the leaders of LEPs or REPs would then be responsible for forming delegations to countrywide negotiations organised by the Energy Cost Council. Like the UN COP26 event in Glasgow, delegations would act on behalf of the areas they represent, to negotiate agreements on the next cooperative steps to take forwards. As the UK's overall carbon reduction targets have already been set, and are world-leading, the council's work would focus on forming the new links and stable policy that can be practically needed. In particular, it would ensure that the regional specialisms identified in the Sustainable Supply Chain Accelerators were promoted back to each Local Energy and Climate Coalition.



Delegations would be responsible for bringing complementary local businesses together, increasing supply chains' economies of scale and reducing the price of making change. Delegates from community groups would be charged with representing consumers and citizens, ensuring that businesses understood their locally different needs.

Cooperation between the Sustainable Supply Chain Accelerators would practically deepen the trade links between each part of the UK. It would support communities in similar economic situations to draw upon the best of the UK's shared community, to develop new links of solidarity. It would build upon the UK's size to reduce the wholesale costs of making nationwide energy improvements.

Yet encouraging investment in energy efficiency, in new sustainable businesses, and in learning green skills cannot help those people and places that have no money to invest. We know that the UK has become an unequal country over the last decade, and that those with limited finances have been systematically shut out of opportunities to improve their situation. Achieving Net Zero will mean making opportunities and funding available for everyone to be part of the change.

Personal Energy and Carbon Reduction Accounts (PECRAs) would finally be set up for every one of the 40.4 million working age people in the UK, to give everyone opportunities to save energy and gain expertise that supports Net Zero. Initially PECRAs should be a set financial amount that can be drawn upon to fund home energy efficiency improvements, kickstart new businesses, or pay the cost of training and education. It would mean that people wanting to protect the country's wealth and the planet's health are not held back by access to personal finance. Addressing inequality, the accounts could be topped up to provide extra support to people on low incomes, or areas experiencing rapid economic change.

Making PECRAs available to everyone would combine the depth of Citizens' Assemblies with an unprecedented scale of popular community action. Groups and individuals would be able to use their Personal Accounts to participate directly in the process of making change. As an incentive for different parts of the UK to cooperate rather than compete, supply chain accelerators would be supported to negotiate sector deals with UK-wide economies of scale. Through the Sustainable Supply Chain Accelerators, individual citizens would be able to pool together and crowdfund the development of new business ideas, in return for a discount on the final products.

Devolved leaders would provide a leadership role, using their power to promote strategic opportunities, specialisms, or opportunities for cooperation. For local authorities, charities and cooperatives, PECRAs could be used to found a new generation of libraries, community spaces and other services that would save energy, drawing on PECRAs to raise funds collectively. For businesses, developing a pool of informed consumers and a stable pipeline of pan-UK advance orders would systematically reduce the risk attached to developing those new economies of scale, and so reducing the cost of funding that innovation. Jobseekers and career changers could use their PECRA to pay for training costs, or for financial support to





take time off work to attend training. For areas whose wealth has been hit hardest by the energy crisis or the shift to a low-carbon economy, it provides a source of funding to power local recoveries.

We suggest an opening figure of £1000 per year, for the next three years, focused on reducing the amount of money lost from the country through energy costs. Were the public to fully take up the opportunity it would cost £40.4bn per year. This is less than a fifth of the potential cost of energy over the same period. If PECRAs created genuinely popular, mass uptake of Net Zero and energy efficient products, taking in those outside of working age,⁸⁵ it would only require spending of £5,375 per person to mobilise an amount equivalent to the entire UK's Gross Operating Surplus. This is less than the potential cost of energy for the average household over 2023. Doing so would not require consumers to spend more money, but to know how to redirect their spending to take up the rapidly changing energy benefits and Net Zero opportunities. At scale, and strategically directed, these changes would revolutionise the UK economy.

A 'Net Zero Furlough' could be provided for areas and industries experiencing rapid economic change, through PECRAs. This could give workers funded time away from work and able to undertake retraining. As part of their leadership role, Mayors and regional leaders would negotiate with employers and community representatives, particularly trade unions. This would ensure that the economic damage caused by high energy prices does not scar local businesses, whilst helping workers out of declining jobs, and into careers with a brighter future. The Net Zero furlough should operate like the Covid furlough, providing up to £2,500 a month to replace lost earnings.

The current price of energy is a fundamental challenge to communities, businesses and jobs across the UK. Yet by founding an Energy Cost Council that is safeguarded by devolved leaders and empowers local action, we would not only benefit our communities, small businesses and green jobs. Putting devolution at the heart of a system that also encourages UK-wide cooperation, backed up by real funding, would maintain the best of our union whilst demonstrating that it remains flexible and able to change. Only by showing that our union remains an effective way to improve peoples' lives will we repair the frayed support for its existence. By pulling together, by sharing and trading along the length and breadth of our country, we can get through the energy crisis and accelerate towards the jobs and opportunities of a sustainable Net Zero.

References

- 1 Climate Change Committee (CCC), 2022, CCC and National Infrastructure Commission write to Prime Minister, Rt Hon Elizabeth Truss MP <https://www.theccc.org.uk/publication/ccc-and-nic-write-to-prime-minister-rt-hon-elizabeth-truss-mp/>
 - 2 National Atmospheric Emissions Inventory (NAEI), 2022, Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990-2020. https://naei.beis.gov.uk/reports/reports?report_id=1080
 - 3 Our Scottish Future, 2021, A Net-Negative Nation: Hitting Scotland's Climate Targets. <https://ourscottishfuture.org/wp-content/uploads/2021/11/A-Net-Negative-Nation-Hitting-Scotlands-Climate-Targets.pdf>
 - 4 CCC, 2022, Progress in Reducing Emissions; 2022 Report to Parliament, (Hereafter 'UK Progress report') p14 <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/>
 - 5 BEIS, 2022, BEIS Public Attitudes Tracker: Spring 2022, <https://www.gov.uk/government/statistics/beis-public-attitudes-tracker-spring-2022>
 - 6 CCC, 2022, UK Progress report, p474. Improvements to the carbon ratio 2015-2020, see following section.
 - 7 CCC, 2022, UK Progress report, p474
 - 8 CCC, 2022, UK Progress report, p457
 - 9 CCC, 2021, Progress in Reducing Emissions in Scotland, p10-12. (Hereafter 'Scotland Progress report')
 - 10 Department for Business, Energy & Industrial Strategy (BEIS), 2021, UK Energy in Brief 2021, p14. <https://www.gov.uk/government/statistics/uk-energy-in-brief-2021>.
 - 11 BEIS, 2022, UK Energy in Brief 2022, p14. <https://www.gov.uk/government/statistics/uk-energy-in-brief-2022>. Graph reproduced under Open Government Licence v3.0. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>
 - 12 BEIS, 2022, Digest of UK Energy Statistics (DUKES): annual tables <https://www.gov.uk/government/statistics/dukes-annual-tables> in <https://www.carbonbrief.org/analysis-why-uk-energy-bills-are-soaring-to-record-highs-and-how-to-cut-them/>
 - 13 Grubb M, Bashmakov I, Drummond P, Myshak A, Hughes N, Biancardi A, Agnolucci P, Lowe R, 2018, An exploration of energy cost, ranges, limits and adjustment process, UCL Institute for Sustainable Resources https://www.ucl.ac.uk/bartlett/sustainable/sites/bartlett_sustainable/files/an_exploration_of_energy_cost_ranges_limits_and_adjustment_process_2_0.pdf
- Also see visualisation by the Resolution Foundation on how far current energy costs exceed historic norms <https://twitter.com/TorstenBell/status/1565723301628059652?t=F-VHIYBISYJSi8CZU1uAA&s=19>
- 14 CCC, 2022, UK Progress report, p447
 - 15 CCC, 2022, UK Progress report, p25
 - 16 Positively, the CCC found the plans credible on zero-emission vehicles and renewable electricity supply.
 - 17 CCC, 2022, UK Progress report, p25

- 18 BEIS, 2021, Business population estimates for the UK and regions 2022: statistical release <https://www.gov.uk/government/statistics/business-population-estimates-2022>
- 19 Businesses with less than 250 employees and a turnover of less than €50m, or a balance sheet of less than €43m
- 20 CCC, 2022, UK Progress report, p484
- 21 CCC, 2022, UK Progress report, p474
- 22 CCC, 2022, UK Progress report, p484
- 23 BEIS, 2021, Energy Consumption in the UK (ECUK): End Use Tables, (September) Table U1. <https://www.gov.uk/government/statistics/energy-consumption-in-the-uk-2021>
- 24 BEIS, 2022, Public Attitudes Tracker
- 25 Definition as per BEIS Energy Consumption in the UK
- 26 BEIS, September 2021, Energy Consumption in the UK (ECUK): End Use Tables, U1
- 27 CCC, 2022, Progress in Reducing Emissions; 2022 Report to Parliament, (Hereafter 'UK Progress report'), Policy Implementation Timeline – buildings <https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/>
- 28 Our Scottish Future, 2022, Cheaper Journeys, Faster: Building Scotland's Low Carbon Transport Network <https://www.wecan.scot/cheaper-journeys-faster/>
- 29 BEIS, 2022, Public attitudes tracker
- 30 Energy and Climate Intelligence Unit, 2022, Insulation and gas prices <https://eciu.net/analysis/briefings/heating/insulation-and-gas-prices>
- 31 OECD, 2022, Housing market <https://www.oecd.org/housing/data/affordable-housing-database/housing-market.htm>
- 32 CCC, 2022, UK Progress report, p457
- 33 Rosenow J, 5 September 2022, <https://twitter.com/janrosenow/status/1566708503913402369?s=20&t=X4vaRU1H3NvB5MI7t614uA>
- 34 “[A]lmost a third (32%) ... are cutting back on their use of fuel such as gas or electricity. More than half (53%)... spending less on non-essentials, and around a quarter (26%) using their savings.” Office for National Statistics (ONS), 2022, Energy prices and their effect on households <https://www.ons.gov.uk/economy/inflationandpriceindices/articles/energypricesandtheireffectonhouseholds/2022-02-01>
- 35 inFranken.de, 12 October 2022, Ab Oktober: Neue Energieverordnung - für wen ein Heizungs-Check jetzt Pflicht wird <https://www.infranken.de/ratgeber/verbraucher/heizungs-check-wird-ab-oktober-2022-fuer-millionen-buerger-zur-pflicht-neue-energieverordnung-art-5528770>
- 36 The Guardian, 2 August 2022, Spain puts limits on air conditioning and heating to save energy <https://www.theguardian.com/world/2022/aug/02/spain-puts-limits-on-air-conditioning-and-heating-to-save-energy>
- 37 Euractiv, 7 October 2022, France unveils ‘ambitious’ energy efficiency plan, with no binding measures <https://www.euractiv.com/section/energy/news/france-unveils-ambitious-energy-efficiency-plan-with-no-binding-measures/>
- 38 ONS, 2021, National balance sheet estimates for the UK: 2021 <https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/bulletins/nationalbalancesheet/2021>
- 39 Carbon Brief, 2022, Analysis: Why UK energy bills are soaring to record highs – and how to cut them <https://www.carbonbrief.org/analysis-why-uk-energy-bills-are-soaring-to-record-highs-and-how-to-cut-them/>

- 40 Sky News, 5 October 2022, Energy price guarantee could cost taxpayer £140bn in 'extreme' scenario, market expert warns <https://news.sky.com/story/energy-price-guarantee-could-cost-taxpayer-163140bn-in-extreme-scenario-market-expert-warns-12712574>, Financial Times, 9 September 2022, UK energy package will weigh on gilts and pound, analysts warn <https://www.ft.com/content/467b9221-4240-44b7-b84a-942923c76738>
- 41 Cornwall Insight, 2022, Energy Bill Relief Scheme – the devil is in the detail <https://www.cornwall-insight.com/energy-bill-relief-scheme-the-devils-in-the-detail/>
- 42 The Independent, 23 August 2022, Energy bills set to surge past £6,500 in April in highest forecast yet <https://www.independent.co.uk/news/uk/home-news/energy-bills-forecast-rise-april-b2150725.html>
- 43 The Independent, 31 August 2022, Leak reveals staggering profits ahead for energy companies <https://www.independent.co.uk/news/uk/politics/gas-electricity-bills-energy-profits-b2156411.html>
- 44 CCC, 2022, UK Progress report, p435
- 45 BEIS, 2014, European Regional Development Fund and European Social Fund: UK allocations 2014 to 2020 <https://www.gov.uk/government/speeches/european-regional-development-fund-and-european-social-fund-allocations-2014-to-2020>
- 46 Department for Levelling Up, Housing & Communities (DLUHC), 2022, UK Shared Prosperity Fund: prospectus <https://www.gov.uk/government/publications/uk-shared-prosperity-fund-prospectus/uk-shared-prosperity-fund-prospectus>
- 47 CCC, 2022, UK Progress report, p463
- 48 Carbon Brief, 20 January 2022, Analysis: Cutting the 'green crap' has added £2.5bn to UK energy bills <https://www.carbonbrief.org/analysis-cutting-the-green-crap-has-added-2-5bn-to-uk-energy-bills/>
- 49 Carbon Brief, 2022, Analysis: Why UK energy bills are soaring to record highs
- 50 Carbon Brief, 2022, Analysis: Cutting the 'green crap' has added £2.5bn to UK energy bills
- 51 Office for Budget Responsibility, 2021, Fiscal risks report – July 2021 <https://obr.uk/frs/fiscal-risks-report-july-2021/>
- 52 Housing Today, 4 November 2021, Cost of decarbonising all UK homes could run to £330bn <https://www.housingtoday.co.uk/news/cost-of-decarbonising-all-uk-homes-could-run-to-330bn/5114546.article> This represented a reduction in the costs previously estimated by the Construction Leadership Council of over £500bn.
- 53 Cambridge Econometrics for Greenpeace UK, 2022, The economic impact of decarbonising household heating in the UK in an era of high fossil fuel prices <https://www.greenpeace.org.uk/resources/household-heating-decarb-economic-impact/>
- 54 IPPR, 2022, Train local, work local, stay local: retrofit, growth, and levelling up <https://www.ippr.org/research/publications/train-local-work-local-stay-local>
- 55 Resolution Foundation, 2022, Government intervention will limit energy bills rise today to 7 per cent – but families in poorly insulated homes still face huge increases this winter <https://www.resolutionfoundation.org/press-releases/government-intervention-will-limit-energy-bills-rise-tomorrow-to-7-per-cent-but-families-in-poorly-insulated-homes-still-face-huge-increases-this-winter/>
- 56 ONS, 2022, Wealth in Great Britain - Total Wealth, Table 2.7: Distribution of aggregate household total wealth, by region and wealth component. Northern Ireland wealth not available <https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/datasets/totalwealthwealthingreatbritain>
- 57 BEIS, 2021, Subnational total final energy consumption, UK, 2005 – 2019, <https://www.gov.uk/government/statistics/total-final-energy-consumption-at-regional-and-local-authority-level-2005-to-2019>

- 58 ONS, 2022, UK Economic Accounts: financial and non-financial corporations sector <https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/datasets/ukeconomicaccountsfinancialandnonfinancialcorporationssector>
- 59 For example, if a building firm fits insulation for £100 and the materials cost £25, the wages cost £50, then the GOS would be £25. This disregards that their tools and vehicle become worth slightly less as they wear out.
- 60 BEIS, Subnational total final energy consumption, UK, 2005 – 2019
- 61 BEIS, Subnational total final energy consumption, UK, 2005 – 2019
- 62 ONS, 2021, UK business; activity, size and location: 2022, from figure 4, <https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/bulletins/ukbusinessactivitysizeandlocation/2022>
- 63 Industrial Strategy council, 2019, UK Skills Mismatch in 2030, in CCC, 2022, UK Progress Report, p468.
- 64 ONS, 2021, Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2020, Figure 8 <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/mid2020#age-structure-of-the-uk-population>
- 65 CCC, 2022, UK Progress report, p466.
- 66 Institute for Government, 2021, The Treasury should not axe the Green Homes Grant <https://www.instituteforgovernment.org.uk/blog/treasury-should-not-axe-green-homes-grant>,
Guardian, 19 April 2022, Where Britain's journey to insulation went wrong <https://www.theguardian.com/environment/2022/apr/19/where-britains-journey-to-insulation-went-wrong>
- 67 Coalition for Green Capital, 2021, NY Green Bank Shows the Way for Private Capital to Follow <https://coalitionforgreencapital.com/ny-green-bank-shows-the-way-for-private-capital-to-follow/>
- 68 BEIS Public attitudes tracker: Spring 2022. Heat and Energy in the Home, p17
- 69 Lehtonen M, de Carlo L, 2019, Community energy and the virtues of mistrust and distrust: Lessons from Brighton and Hove energy cooperatives, Ecological Economics <https://www.sciencedirect.com/science/article/abs/pii/S0921800919305671>
- 70 Cooperatives UK, 2021, The Co-op Economy <https://www.uk.coop/get-involved/awareness-campaigns/co-op-economy>
- 71 For more information on growth and productivity in Scottish businesses, see McLaren, J, for Our Scottish Future, 2022, A New Scottish Growth Strategy. <https://ourscottishfuture.org/wp-content/uploads/2022/09/A-New-Scottish-Growth-Strategy.pdf>
- 72 ONS, 2021, Business Demography – 2020, Enterprise Births, Deaths and Survivals <https://www.gov.uk/government/statistics/business-demography-uk-2020> . With ONS 2021, Mid-Year Population Estimates, UK, June 2020, <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/overviewoftheukpopulation/2020>
- 73 Office of the Secretary of State for Scotland, 2020, Scotland's biggest trading partner continues to be the UK <https://www.gov.uk/government/news/scotlands-biggest-trading-partner-continues-to-be-the-uk>
- 74 ONS 2021, Mid-Year Population Estimates, UK, June 2020
- 75 CCC, 2022, UK Progress report, p436
- 76 Including the agreed York and North Yorkshire Mayoralty, and the Derbyshire and Nottingham Mayoralty

77 CCC, 2022, UK Progress report, p433

78 For REPs see: Scotland's Centre for Regional Economic Growth, 2017, Regional Economic Partnerships <https://www.inclusivegrowth.scot/our-work/regional-economic-partnerships/2019/04/regional-economic-partnerships/> see also <https://www.gov.scot/publications/scotland-national-strategy-economic-transformation-evidence-regional-economic-partnerships/pages/1/>.

79 Institute for Government, ND, Local Enterprise Partnerships <https://www.instituteforgovernment.org.uk/explainers/local-enterprise-partnerships>

80 McGurk P, 2019, Local employer engagement or distant elites? Local enterprise partnerships and employment and skills in England, Journal of Education and Work <https://www.tandfonline.com/doi/abs/10.1080/13639080.2019.1572109>

81ONS, 2022, Trade Union Membership, UK 1995-2021: Statistical Bulletin, <https://www.gov.uk/government/statistics/trade-union-statistics-2021>

82 Memberwise, 2022, The 100 Largest UK Membership Bodies (Influence 100 List) <https://memberwise.org.uk/influence100/>

83 House of Commons Library, 2022, Membership of political parties in Great Britain <https://commonslibrary.parliament.uk/research-briefings/sn05125/>

84 Fraser of Allander Institute, 2022, Inequalities in voting and volunteering: who participates in Scotland? <https://fraserofallander.org/inequalities-in-voting-and-volunteering-who-participates-in-scotland/>

85 So including spending on behalf of children

Dr Pete Wood is a sustainability researcher with over ten years experience in policy and behaviour change.

He is currently an Associate Lecturer in Environmental Studies, Science and Management at The Open University in Scotland. Writing this paper prompted him to finally repair the draught seal on his front door, and he wishes he had done it earlier.

Our Scottish Future believes that good government in Scotland and across the United Kingdom has to be based on the values of cooperation, empathy, solidarity and reciprocity.

Our Scottish Future | www.ourscottishfuture.org | info@ourscottishfuture.org