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THE POWER BOOK

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Contents

"This book is about power.
And power relations.
About the choices people
have to power their homes
and businesses.
About influencing the cost
of energy. About local
government and community
organisations as low carbon
energy providers."

Foreword

Rt Hon Caroline Flint MP

THE PLATFORM from which energy will be generated and sold in the United Kingdom for years to come will be framed by the Energy Bill, due to continue its legislative journey this autumn.

It hasn't had a great start after a scathing report by the Energy and Climate Change Select Committee in July. Concerns over the Government's green credentials have proliferated and genuine scepticism is widespread over whether the Government is open for green business.

Over 30 years we have travelled from centrally run nationalised industries to a private market dominated by just six large energy companies in which switching between energy suppliers hit its lowest level on record in the first quarter of 2012. The Government's Electricity Market Reform proposals do nothing to address this.

As a new energy industrial revolution unfolds, future technologies, sources of renewable and low carbon energy and their application offer more scope than ever to challenge the existing market, reshape relationships and create new agents of delivery.

This is not to underestimate, or be naive, about our energy requirements and the role of large scale energy generation and delivery. Nor is it to ignore nuclear and the important role it can play in meeting Labour's Climate Change targets, set out in the 2008 Climate Change Act, accepted by the Coalition Government.

However we cannot neglect the potential for individuals and communities to create and save energy. In truth there are plenty of examples both here and abroad which demonstrate the potential of community energy as a low carbon driver.

Important as that is, it is equally about empowering people to take more control over their use of energy and at what price.

Prices, jobs and security underpin all my discussions about energy and climate change but that shouldn't necessarily exclude alternative ideas to the status quo.

At the 2011 Labour Party Conference Ed Miliband talked about responsible capitalism. One year on, it is clear to everyone what he was talking about.

Whether it is rising train fares, unfair bank charges or soaring energy bills, it is clear that in too many areas of our society, while there are large profits to be made, ordinary people feel powerless.

The Energy Bill should improve the way the energy market works with a new focus on greater transparency, accountability and competition. But the Government's

plans for electricity market reform do nothing to actually reform the way the electricity market operates. Such a mission would be in the public interest and that of the dominant energy companies who need Government to restore public confidence in the energy market.

There is also a window of opportunity to increase community-level energy generation instead of creating a rigid framework to fit the old, centralised system.

Whilst the chapters in this book do not represent Labour Party policy they are a welcome contribution to a more open and diverse energy debate and I am grateful to the LGiU, the Co-operative Party and Sera for publishing *The Power Book* and the authors for their input.

This book is about power. And power relations. About the choices people have to power their homes and businesses and with what. About influencing the cost of energy whether by collective consumer action, community ownership or through reduced energy consumption. About local government and community organisations as low carbon energy providers with local buy in.

More decentralised energy generation is not without its own challenges. Questions about keeping the lights on, managing more varied distribution and the cost to bill payers are as important here as they are to the dominating forms of energy generation and retailing.

A Labour government in 2015 (or before) will not have the financial resources to have a spending answer to

every challenge we face. But to be honest that shouldn't always be the answer anyway.

Without doubt Labour will continue to develop solutions to meet our climate change ambitions and engage public support for an energy market working in the interests of the many not the few.

In a world that is changing so fast the debate must be ongoing and *The Power Book* is a valuable contribution.

Rt Hon Caroline Flint MP
Shadow Secretary of State for Energy and Climate Change

"Giving citizens and communities a stake (if not complete ownership) in renewable generation is the right thing to do."

1. Changing our relationship with power

Melanie Smallman

THE PROBLEMS facing the UK's energy sector at the start of the 21st century are serious and complex. The UK is becoming a net importer of oil, at the very time that oil prices and world supplies are becoming unstable; our economy is dependent on a robust energy supply, yet many industries are reluctant to move on from oil; householders expect cheap electricity, but are unenthusiastic about using less or even being able to see the equipment that produces their energy.

One way of looking at these problems is in terms of hardware – how many new power stations do we need to build, what is the right mix of sources and where can we site them?

The hardware is undoubtedly important but it isn't the only matter we need to be considering. Because at the heart of most of these problems is the 'softer' matter of the relationship we have with energy – from the way we use energy at home and in work, to the way we generate and distribute it. Changing this relationship will be key to building a strong and stable economy in the future. And community empowerment, community involvement and cooperative ownership will be vital in delivering this transformation.

Built at the start of the 20th century when oil was seen as a cheap, unlimited resource, the UK's energy infrastructure – our large-scale power stations and the grid connecting them to our homes and industries – was a brilliant piece of technology for its time. Electricity and gas was moved around the country, powering our economy, almost invisibly, like a magical force. But in today's economic climate, when oil is an increasingly expensive resource, this energy system has become out of date and unforgivably wasteful. At the moment, only 35% of the energy going into power generation ever reaches homes; the rest is wasted as heat during electricity generation and transmission through the National grid.

These in-built inefficiencies mean that regardless of the price of oil or how well insulated homes are, consumers ultimately are forced to pay for more energy than they actually use, as well as produce more carbon than necessary. But unfortunately, as long as we are prepared to pay to keep our lights on, there is little motivation for the energy companies to tackle these inefficiencies and invest in a modern system.

Taking housing as an analogy, alongside post-war public investment, the changing ownership patterns during the 1970s and 1980s which saw the number of owner-occupiers increase, had the kind of dramatic impact on the quality of housing stock that we need to see in our energy infrastructure. While notorious landlords might have seen houses as opportunities to make as much money as possible back then, the new owners understood that their house was an asset worth investing in, in modernizing and maintaining.

Just as home owners make decisions about their homes for reasons not just financial, a community stake or cooperative model could help change the role and perspective of energy companies – encouraging them to take their long-term responsibilities for the energy infrastructure, their charging structures and their impact on the environment more seriously.

Owning your own home also makes you more aware of what is involved in keeping the roof over your head and changes your behaviour accordingly. Wild parties suddenly become a thing of the past once you've laid nice new carpets and know how much it will cost to get them cleaned. Engendering a similar sense of responsibility and care in the way we use energy will be key to reducing our carbon emissions and in securing the UK's energy supply and there is evidence that, as in housing, changing ownership structures will help achieve that.

While one of the huge successes of our current energy infrastructure is the way in which it has enabled us to take for granted the availability of energy, today it is one of its biggest problems when we are trying to encourage people to be more efficient in the way they use energy.

Recent research that I, and colleagues at UCL, have conducted into public attitudes to renewable technologies has found that ordinary people feel very disconnected from current energy suppliers. As a result, they feel disinclined to make much effort to find out how they can use energy more efficiently – the prevailing view seems to be that regardless of what consumers do, the energy companies will still make huge profits at their expense.

Energy cooperatives report very different attitudes from their members however. Members become more in tune with the precious nature of the energy they are producing. People are more hesitant about wasting energy by leaving gadgets on standby, for instance, when they have a stake in the way in which it is produced.

Opening up ownership of electricity generation and producing it on a community scale also opens up energy production and makes it transparent and interesting again. For members of community and cooperative energy projects, energy stops being something that just comes out of the socket as communities are able to engage with the technologies involved in producing the energy.

Given the scale of investment needed, the number of jobs that could be created and the technologies that could be exported as we modernise our energy infrastructure, this kind of interest – and indeed excitement – is desperately needed.

With oil prices set to continue to rise and to fluctuate wildly in the future, energy prices are going to become a more and more pressing issue. Already it is clear that even when more and more people struggle to heat and light their homes, energy companies continue to make huge profits – last winter alone, more than four million households faced fuel poverty as average fuel bills rose to £1,345.

Along with ways to help people use energy more efficiently and reforms to the market to make pricing much more transparent, we will also need measures to help make

energy more affordable. By giving a share of the profit back to energy users, and in helping more people produce their own energy, community and cooperative ownership will have a significant role to play in addressing fuel poverty.

More interestingly, because community scale energy projects are small and usually focus on renewables, projects report that they are able to be more careful with the technologies and be more efficient, producing green energy much more cheaply than the big providers, driving costs for consumers down further.

Thinking about how we can develop more community and cooperatively owned energy also opens up new doors for renewable energy generation, helping us move further away from oil and nuclear. For distributed and community energy to work, we need to completely reconsider how we conceive our energy network, moving away from the current focus on a few, large scale power stations towards a vision of many, much smaller sources of power, backed up with much fewer bigger generators.

This is a dramatic change in thinking, but makes sense not just in order to enable community scale generation. In this latter scenario, many more sources of renewable energy can be brought into play as they no longer need to produce the massive capacity to compete like for like with coal, gas and nuclear. Situating generation near to where it is needed also reduces the amount of energy lost in transmission (currently about 65%). Taken together, these factors have the potential to dramatically reduce our energy requirements and carbon emissions.

Finally, giving citizens and communities a stake (if not complete ownership) in renewable generation is the right thing to do. The shift from large-scale, privately owned power generation to more local level community owned energy speaks strongly to Ed Miliband's 'responsible capitalism' narrative that chimes with many current public discourses.

And there is, of course, the moral precedent for doing so, because there is very little difference between what the oil companies drilling in the North Sea were doing in the 1970s and what wind or wave energy companies do today. Both provide the equipment to harvest a 'free' resource that belongs to us all. Just as the oil companies reflected that by paying a heavy tax, why shouldn't communities be recompensed similarly, with a stake in any developments they don't own outright?

The credit crunch has taught us that the market alone cannot be trusted, but at the same time there is little appetite for big government. Putting power into the hands of the people – literally – seems to make perfect sense.

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"Whatever the size, the establishment of district plant and networks offers opportunity for communities and local authorities to do it themselves."

2. District heating

Alan Whitehead MP

HEAT remains the big forgotten element of energy. We throw away huge amounts of usable heat energy through poorly insulated homes, or inefficient boilers and squander almost 50% of the primary fuel going into power stations by making electricity and then releasing all the rest of the energy involved into the air through chimneys.

We continue to burn residual waste without thought for the product – that, too, goes up in the air. Even if we think we are making progress on carbon emission reduction in power generation by using low carbon biomass as a fuel, if we then waste 50% of the energy locked up in the fuel by sending it skywards we're not really making much headway.

Capturing that heat and using it for heating, requires some investment and planning but repays the effort many times over in energy saved, fuel used efficiently, and bills reduced through the delivery of an essential at lower prices than traditional heat generation allows for.

Combined Heat and Power plants (CHP) do just that in a variety of ways and using a variety of heat sources. A well-designed CHP plant can almost double the efficiency of a traditional power plant by generating electricity AND using

the heat the process produces to supply heating (and cooling, if required) through a heat network of pipes. The fuel can be gas, biomass waste, geothermal heat, in fact almost anything that can be captured and made more efficient.

The problem CHP has always faced has been its role as an energy source betwixt and between – is it renewable? is it a power station? – and the need to invest in a heat network to deliver its product. Heat networks require long-term investment, but pay off spectacularly, in avoided boilers both for commercial and domestic properties, and in long term low cost secure heating supply.

Consequently, CHP has struggled at times to make its mark: underwriting often fell into the wrong categories for CHP to succeed with, and banks were often unwilling to lend for the period necessary to make heat networks pay off.

That is beginning to change as the appreciation grows that CHP is a genuinely low carbon power solution, not only because of its ability to alter radically the ratio of energy used to that wasted in almost any situation, but because it can be used at community level to develop localised energy solutions. CHP plants can be as large as a district, or as small as a street. Either way, a plant and a heat network represents an ideal opportunity for a community to take control of its own energy generation and use.

This is what some of the best examples of CHP in operation over the years have demonstrated – how energy production and use can be decoupled from reliance on

nationally driven, largely wasteful networks where the recipient of power is at the end of a long chain of events, perhaps receiving after generation and transmission only about 35% or so of the original fuel provided somewhere else in the country.

CHP goes with the grain of future power generation, and is therefore undergoing something of a renaissance, assisted at least prospectively by better arrangements than hitherto for the financing of plants (the Green Investment Bank, even in its early stages as a fund, may be able to assist with the sort of longer-term investment security needed) and the availability of the Renewable Heat Incentive, pioneered by the last Labour government and now introduced initially for commercial renewable heating, and, we hope with no backsliding, for domestic heating later this year.

The development of CHP as an efficient district heat and power provider also raises some interesting questions for the future of municipal enterprise. Can local authorities play a leading role in developing local community infrastructure, and at the same time capture some of the income that goes with such plants?

Municipalities were, after all built on power provision, and those with long memories or good historical understanding will recall the municipal gasworks, and electric companies prior to the emergence of the big national conglomerates – indeed, largely as a result of local utility provision, local government in the 1940s provided almost 50% of its revenue turnover through trading income, compared with only about 2% today.

Some of the leading examples of good quality district heating have done just that. Birmingham now has plant providing heat and cooling for a number of municipal, commercial and industrial buildings across the city centre as well as a number of housing estates.

Aberdeen has for a long time heated numbers of municipal high rise blocks with a district scheme. Nottingham is developing a comprehensive network of distributed heat through linking smaller schemes across the City. Woking has used innovative financing and different sources of heating and power such as solar, CHP and ground source pumps to build a heating and 'private wire' electricity network taking in most of the town's municipal buildings and a number of residential districts.

So how is it done? I hope I will be forgiven for dwelling briefly on one of the best examples I know of successful municipal CHP – in Southampton, the city I represent as a Member of Parliament. Southampton now has a heat network across the centre of the city, supplying heat and cooling to most of the major heat users in the centre – the Civic Centre, one of the universities, hotels, shopping centres and residential schemes, and 'private wire' electricity to Southampton docks.

Other smaller CHP schemes have developed at Southampton University and in housing developments in the north and east of the city. Proposals are now being advanced to add to this network by capturing the heat from a waste plant across the Solent and supplying it to homes and perhaps the hospital and schools on the Western side of the city. The longer term prospect exists of

linking these networks together to produce a formidable and self-reliant city-wide distributed energy hub.

This all started with an abandoned hole in the ground almost thirty years ago. A speculative test drill for geothermal energy (now being reinvented in a number of locations in the UK, I am pleased to see) proved, supposedly, uneconomic and was abandoned by the then Government.

Southampton City Council, working with a partner company, took on the well, producing heated brine from an aquifer deep under the city and captured the heat through exchangers. Gradually a heat network took shape, through positive planning provisions for new build, requiring developers at least to look positively on a district solution to their heating requirements first of all – and mostly it was not a difficult decision to make – no boiler installed, just a pipe coming into the building, and then the permanent provision of heat at perhaps a discount of 20% on what would otherwise be their prospective energy bills.

The scheme was originally driven by geothermal, but has been given added electricity and heat generation from a gas engine, with biomass a possible further addition.

Southampton demonstrates, I think, how CHP, if there is an effective heat network in place, can capture whatever source of heat that becomes available, using it efficiently and cheaply. Southampton's central scheme now has a network of pipes stretching to some 17 kilometres around the centre, with more to come as other networks join up.

It has required a long-term commitment, clear goals, and a partnership approach to succeed, but succeed it has, and, it is not too overblown to claim, served as a template for a number of other successful schemes.

The challenge now is to harness these techniques, in an era very different from the 1980s, to push district heating forward, whether it is through large schemes such as Southampton's or Birmingham's, or smaller schemes such as the plant heating about 200 flats in Edinburgh, or the scheme providing heat for a sheltered housing complex in Newcastle.

Whatever the size, the establishment of district plant and networks offers opportunity for communities and local authorities to do it themselves and to link into wider schemes where possible. Ensure that the Renewable Heat Incentive really works well, and get the Green Investment Bank (or municipal bond financing) to reliably underwrite the long-term investment needed in plant and networks and we will really be making progress. We will save a huge amount of carbon emissions in the process and potentially a large number of people will be affordably warm for the future. Quite a prospect really.

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"Once people become aware of their energy usage, using it efficiently seems to become ingrained in their behaviour."

3. Power from the people for the people

Juliet Davenport

We need a step change in policy to realise the full potential of microgeneration.

WHAT MAKES renewable technology so empowering? Why is it such a game changer? Is it just the promise of a clean, limitless energy source at a time when the world faces a rising demand for energy and the urgent need to reduce carbon emissions? Or is it something else?

Good Energy is the country's leading 100% renewable electricity supplier, but what really sets us apart from other energy companies is that some 70% of the power we source on behalf of our customers comes from a community of small and medium-sized renewable generators spread the length and breadth of the UK. We also provide Feed-in-Tariff (FIT) services to more than 40,000 small-scale renewable electricity generators – they are the mini-power stations of the future.

Good Energy pioneered reward schemes for generators, setting up our HomeGen scheme for small-scale electricity generators in 2004 and our HotROCs renewable heat incentive in 2008. In just a few years, we've seen the growth of a range of different projects that are as exciting as they are innovative.

One example is the Isle of Eigg in Scotland, which has made the most of its abundant natural resources to drastically reduce its reliance on costly imported oil and diesel. Their independent electricity grid is supplied by three hydro generators, four wind turbines and solar PV panels. Combining their own generation with stringent energy efficiency measures, some 95% of their energy is generated on the island from renewables. That's about as close to energy independence as it's possible to get. Surplus power is conserved in batteries or used to heat communal buildings.

The social housing sector offers other inspiring examples of how microgeneration offers widespread community benefits. The Stockport SHINE initiative, supported through the FIT, has helped some of Stockport's poorest households cut their carbon emissions, tackle fuel poverty and generate new funds that are reinvested to improve the energy performance of homes, as well as in other low-carbon projects. A total £6m investment will help to deliver a 20%-30% saving on electricity bills for residents, an average of £130 per household per year.

In education, 10:10's Solar Schools campaign is helping reduce the upfront cost of solar PV panels for schools (which predominately use power during the day), cutting carbon emissions, controlling energy costs, boosting budgets and teaching pupils about energy and climate change. These examples show how microgeneration is having a lasting social, economic and environmental impact on households, businesses and communities. A new army of independent electricity generators is giving families and organisations control over their energy bills at

a time when the UK's continued reliance on imported gas is pushing them up. But the benefits of microgeneration don't need to stop there; society as a whole can benefit from its wider impact on our energy market.

To make the most of the UK's microgeneration potential, we need a far more flexible, dynamic electricity market than we have now. Traditional power stations with their reliance on fossil fuels and nuclear power are based on an underdeveloped and unintelligent market which has failed to keep track of technological developments in recent years. Put simply, there is huge potential for a smarter, more intelligent electricity market, and microgeneration has a key role in delivering that.

Rather than a rigid system designed to supply peaks in electricity demand, a smarter grid using more small-scale generation could help reduce these peaks, spreading electricity demand throughout the day through load shifting. That's important because the fossil-fuelled power plants used to meet those peaks tend to be the most expensive to run.

A recent Good Energy survey of our microgenerators found that 65% had changed their electricity consumption pattern to match their generation. In particular, they did things like run appliances sequentially rather than simultaneously, and heated water during periods of generation.

There are other wider benefits. The same Good Energy survey found that over half used less energy than before, even taking their own generation into account. Of those generators, over a third said their usage had reduced by

over 20%, with 5% claiming a 50% reduction. Almost two-thirds also said that they had taken additional energy-efficiency measures since installing their generation. Of those that had not taken any additional measures, many said that they had done so before installing generation. Once people become aware of their energy usage, using it efficiently seems to become ingrained in their behaviour.

There are other examples too. In the commercial sector, office buildings using air conditioning can reap the benefits of solar PV, which is most productive when the need is greatest, once again removing the need for businesses to spend money buying electricity from conventional sources.

The net result is to reduce electricity demand from traditional, centralised forms of electricity generation from fossil fuels. And by exporting surplus power to the grid, communities with microgeneration will need to import less electricity from outside the immediate area.

In the future, microgeneration could reduce the need for gas-fired back-up power plants to manage either the intermittency of larger-scale, centralised renewable energy projects or the highly inflexible nature of any remaining nuclear power stations. That's not only good for reducing carbon emissions but also for reducing the energy lost when transporting electricity over long distances via the National Grid.

However, for microgeneration to deliver all these benefits, it needs to be a viable option for every household, not just restricted to those who can afford it. We need to embrace

a diverse range of technology – not only matching them to the available resources – a windy hilltop, south-facing roof, or fast-running river – but taking account of their differing power generation characteristics. In a diverse renewable energy portfolio, solar forms a natural partner for wind and hydro power because the drier, stiller times of the year tend to be the sunniest. Decentralised, wide-scale deployment will help create a natural hedge against varying weather patterns throughout the country.

To deliver this vision, government policy needs to create a level playing field for all forms and sizes of renewable technologies. But that requires a significant shift in thinking amongst those responsible for energy policy.

At present, in spite of the existence of the current FIT scheme for microgeneration, there still tends to be a preference among policymakers to focus on maintaining a status quo of larger, centralised forms of generation rather than microgeneration, due to misguided perceptions of economies of scale.

That was demonstrated clearly with the recent controversy about constraints on the FIT scheme budget, but also applies to the Government's plans for Electricity Market Reform, with proposals clearly based around the investment needs of large, centralised plant and little recognition of the differing needs of microgeneration in a reformed market.

At present, market reform focuses purely on the cost per unit generated rather than the holistic benefits and the industry-wide economies of scale that can be achieved.

This focus is leading to a false economy, and instead we need a new approach from policymakers. One that recognises that the comparative simplicity of renewable technology makes it accessible to a greater number and wider range of households, businesses and communities than any type of electricity generation technology that has preceded it.

That accessibility not only creates the huge potential for the UK to become more energy-independent and cut our carbon emissions, but also to create a more open energy market. Yet the current, one-dimensional approach to policy means that only part of that potential is currently being realised.

We need a new approach which recognises the empowering qualities of renewable technology, and celebrates the benefits it can deliver to all sectors of society. When policymakers begin to recognise this, then a different energy market is possible – one which is more open, fair, and which literally puts power in the hands of the people.

Juliet Davenport is CEO and founder of Good Energy, the UK's leading 100% renewable electricity supplier.

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"Community energy efficiency programmes have a key role in contributing to carbon reduction and fuel poverty alleviation."

4. Community energy efficiency

Jenny Saunders

THE 2007 Energy White Paper, *Meeting the Energy Challenge,* presented a succinct case for the benefits of energy efficiency: “The starting point for our energy policy is to save energy. It is often the cheapest way of reducing carbon emissions, certainly in the short term. It can also contribute to security of supply, for example by reducing our need for energy imports, and reduce fuel poverty through lower bills.”

In the domestic sector, improved heating and insulation standards contribute significantly to all three of these objectives. The question then is how best to deliver the necessary improvements to the housing stock in the most efficient and cost-effective manner.

Over the past 10 years we have learned a great deal about the successful design and delivery of community-based energy efficiency programmes. Now is the time to move on from the pioneer stages to instigate and develop a national domestic energy efficiency programme, operational in all communities across the UK, and able to deliver on ambitious energy saving targets. The three strands of energy policy come together – making energy more affordable, less polluting, and more secure. But the additional benefits are equally valuable in terms of job

creation, reduced ill health and local regeneration – with positive effects on individuals, local communities, and carbon reduction targets.

There are numerous examples of community energy efficiency retrofit schemes, a small number of which are profiled in this chapter, but most communities lack access to the professional support, guidance, infrastructure and finance that are needed.

There are compelling grounds for the recycling of carbon taxation into community energy efficiency schemes building on the lessons of programmes such as the Community Energy Saving Programme (CESP) and Warm Zones to support community energy efficiency.

Originally established more than 10 years ago as a public/private partnership, and now run as a not-for-profit enterprise owned by the charity National Energy Action, the Warm Zones model adopts a co-ordinated community focused approach – often on a street-by-street basis – working in close partnership with trusted local organisations and with the endorsement of the local authority.

The model has integrated funding from disparate sources including government grants, energy supply obligations from all six major energy suppliers and local home improvement programmes to maximise access to and take-up of a range of energy efficiency measures. The involvement of committed and trusted partners in the design of a Warm Zone is crucial to its success in addressing specific local circumstances such as housing

type, rural versus urban, tenure mix and other local priorities.

Warm Zones do not operate a rigid model and communities can adapt the concept to meet local circumstances, although it usually starts with a systematic assessment of households in a defined area to establish energy efficiency standards and eligibility for assistance. The package of practical measures installed is dependent on individual financial circumstances, the characteristics of both household occupants and the property and the scope of the various energy efficiency programmes available. To the full extent possible the principle of Warm Zones is to deliver ‘something for everyone’.

Practical energy efficiency improvements are supplemented by energy advice, and referral to other sources of assistance such as the Warm Home Discount programme. Priority assistance is given to the most disadvantaged areas of the community where households are most likely to be in fuel poverty, after which work can begin in more affluent areas. To date, more than one million households have been assessed, more than 380,000 insulation measures installed and thousands of energy efficient heating systems fitted.

In Gateshead, the Warm Zone, supported by CERT and CESP funding from Scottish Power, has led to net benefits of around £4 million in annual fuel bill savings, resulting in extra money circulating around the town each year which would otherwise have been spent on wasted heat. Additionally over 60,000 energy assessments have been carried out and almost 40,000 homes insulated.

An estimated 600,000 tonnes of carbon will be saved over the lifetime of the measures installed. For every £1 invested by the council and Gateshead Housing Company Warm Zones has levered in an additional £4-£5, with over £8 million levered in by the end of 2011.

The London Warm Zone started in Newham and expanded into all seven boroughs in the East London Regeneration Partnership, the seven boroughs in the West London Housing Partnership together with Bexley, Lewisham, Merton, Bromley and Richmond upon Thames.

Utilising EDF CERT funding and Warm Home Discount funding has enhanced the local authority budgets for home improvements and has helped pilot other initiatives instigated by the LDA and GLA such as the RE:NEW programme. The local installer base and specialist advice agencies that understand the local community have been contracted to ensure professional advice and services are available to all households.

Piecing together funding sources is a back room activity by the Zone Directors – the householder only sees the front end offering the best possible deal at that time, which for most deprived households has been free insulation plus advice.

In other parts of the country NEA has taken a different approach and, in a joint partnership with Eon, has developed Community Energy Fit with local job creation and employment support agencies in Stoke, Exeter, Coventry, Birmingham and Knowsley to offer training and routes to work via community energy efficiency

programmes. The training ranges from level 1 introductory energy awareness to a level 3 qualification which would enable the person to give energy advice under government and energy supplier schemes.

Hundreds of young unemployed people are being offered support not only to get qualified but to become local champions and run energy saving sessions in their community centres. This programme resulted from discussions with community leaders about what was needed to engage communities where skill sets and aspirations were often low.

Clearly households benefiting from energy efficiency improvements should experience lower energy costs and warmer and healthier living conditions leading to improved physical and psychological health. But the community benefits in other ways from large-scale interventions.

These include, as highlighted above, economic benefits to the community as disposable income increases and local training and job opportunities are created and with commensurate benefits from the improved appearance and fabric of the housing stock.

Local authority involvement is at the heart of any community-based energy efficiency model. However, councils are not well placed to invest staff or monetary resources in energy efficiency as they focus on other priorities during this period of unprecedented austerity.

Some councils have shown considerable enterprise in utilising external funding sources such as EU finance,

Section 106 funding under the Town and Country Planning Act 1990 or Cold Weather Plan resources but these comparatively small-scale initiatives can hardly be replicated on a national scale. Rather, what is needed is a major on-going funding source adequate to the task of eradicating fuel poverty and meeting the domestic sector's share of the carbon reduction burden.

But, when the Warm Front programme terminates in 2013 there will be no government-funded domestic energy efficiency programme in England. Instead, financial support for heating and insulation measures to address both social and environmental concerns will be provided through levies on domestic energy bills – regressive in both their application and effect.

The Energy Bill Revolution is a broad consortium of voluntary and private sector agencies united in support of the need for an adequately funded response to social and environmental obligations. If we are serious about complying with carbon emission and fuel poverty targets we have to address the resources issue.

The radical and innovative proposal from the Energy Revolution Campaign advocates deployment of future revenues from the EU Emissions Trading Scheme and the imminent Carbon Price Floor to fund a national domestic energy efficiency programme that prioritises action to fuel poverty-proof the housing stock.

The optimal model would be a community-based energy efficiency programme able to respond positively to regulatory changes impacting on consumers including the

roll out of smart meters, and the upgrading of energy infrastructure networks in response to renewable targets. This might include the installation of renewable heat and power technologies, and the expansion of our limited community district heating network.

Carbon taxes, which ultimately will be paid by domestic consumers, will generate annual revenues of some £4 billion over the next 15 years. Recycling the revenue would provide billions of pounds to transform heating and insulation standards across the nation's housing stock; deliver major reductions in domestic carbon emissions; and create up to 200,000 jobs. Despite the apparent radical nature of the proposals it should be noted that Ofgem, the European Commission and the Committee on Climate Change have all endorsed the use of revenue from carbon taxes to fund works on behalf of fuel-poor households.

Community energy efficiency programmes have a key role in contributing to carbon reduction and fuel poverty alleviation. But community level action is unlikely to occur at the necessary scale without a combination of direction from the Government and proportionate resources. The Government must get behind community level action, and make sure there is an ongoing funding source that is up to the challenge of meeting our carbon reduction commitments and reducing fuel poverty.

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"For community
renewables to
fulfil their potential,
we need to change
the way that energy
is bought and sold."

5. The role of communities

Rebecca Willis

HARVEY'S Brewery is a much-loved institution in the small Sussex town of Lewes. It has been brewing beer for thirsty locals since 1790. And since last summer, it has been providing a boost of a different sort, as well. It now generates electricity through solar panels on its warehouse roof, funded through investment from the local community.

The panels on Harvey's Brewery are owned by Ovesco, a co-operative established by Lewes locals back in 2007. The group got together originally because of a shared concern about climate change, and the floods that had afflicted their town. They began working with the local council to provide energy advice to householders. Then, when the government announced that it would introduce Feed-in Tariffs (FITs), which guarantee a price for electricity generated by small installations, they spotted a potential business model. In less than a year, they negotiated with Harvey's to rent the warehouse roof, established a co-operative, raised £330,000 of investment capital from local people, and installed a 98kw solar array which started generating power in the summer of 2011.

Ovesco is just one of a growing number of energy co-operatives owned by local people, and generating renewable power. The first co-operatively owned wind

turbines, Baywind, perched on a fell above the Lakeland town of Ulverston, started turning in 1997. Since then, over 7,000 individual investors have ploughed £16 million into wind energy co-operatives. Since FITs were introduced in 2010, smaller schemes have flourished too. The energy regulator Ofgem reports that over 400 community energy schemes are now generating power and receiving FITs. Co-operatives UK, which represents co-operative enterprises, is seeing a dramatic increase in enquiries and membership from this sector.

This upsurge in enthusiasm for community-owned energy couldn't come at a better time. The UK's energy system needs to change radically over the coming decades. To meet carbon targets, now enshrined in law, we need to move swiftly away from carbon-intensive forms of electricity generation like coal and gas – still the mainstay of our network.

This requires eye-watering amounts of investment, of around £20 billion a year, according to Ofgem. Community renewables schemes could make a significant contribution to this task. It is estimated that the sector could be worth around £6 billion in the UK, with installed capacity of 3.5 GW, the equivalent of three or four conventional power stations – but only if properly supported by the Government.

Community projects also help to build awareness of climate change and carbon reduction. When Nayland Primary School installed solar panels on their roof, funded by a co-operative established by parents, pupils were fascinated by the panels. They started asking questions about where the energy comes from and what it gets used

for, and developed an understanding of how valuable it is. As the head teacher explained: “The children are taking all their knowledge out of school, they’re taking it home, they’re talking to parents. That’s when things grow.”

Research by the Sustainable Development Commission shows that people are more motivated to save energy if they can see where the heat and electricity comes from.

Local energy schemes help to build community links too. Ovesco’s project in Lewes provides a focus for people to get together, for neighbours to talk to each other, and for local businesses to engage in their community. The project actually raised more money than they needed, with the remainder being used as development funding for new schemes.

It’s hardly surprising, then, that politicians are queuing up to show their support for community energy. The coalition agreement, hammered out between the Conservatives and Liberal Democrats back in 2010, stated that “we will encourage community-owned renewable energy schemes where local people benefit from the power produced”.

Ministers and opposition spokespeople alike have been keen to highlight the benefits of ‘people’s power’. When MPs have a community energy project in their constituency, they see first-hand the benefits of the home-grown approach.

And yet, while people, politicians and press rush to show their support for small-scale energy, it’s still very difficult and complicated to set up a community energy scheme.

For every success, like Ovesco or Baywind, there are scores of projects that never see the light of day. Our energy markets, and the regulations that govern them, are designed for large energy companies, and large, multi-million pound projects. It's very hard for smaller schemes to elbow their way in to a market that isn't designed for them.

Take finance, for example. Most projects need money at the development stage, before they can raise finance through a share offer; larger projects will need bank loans too. But finance is very difficult to access at the early stages, as there is no guarantee that the scheme will go ahead. Even when schemes stand a good chance of success, banks are often reluctant to loan to a community organisation with no track record of holding funds.

Getting through all the necessary planning and permitting processes can be a real challenge, too. The sheer quantity of administration that is needed before a project can start generating power can be overwhelming, and is often out of proportion to the size of the scheme.

Groups need to work with different organisations including the planning authority, the Environment Agency, the operators of the electricity networks, and so on, all of whom will require different information. The River Bain hydro project, for example, had to negotiate with five different organisations to get their electricity from the power house to the grid connection a few hundred yards away.

For smaller schemes, FITs now provide a guaranteed income stream once a project is established. Yet the government's constant changes to the system have

proved to be a headache, as Ovesco explained: “The goalposts constantly move and you have to be prepared to jump on getting whatever incentive there is when it arrives… it’s so hard to keep up”.

Larger projects, such as community-owned wind farms, face an uncertain future under the government’s plans to reform electricity markets. There’s every indication that it will become harder, not easier, for everyone except the very largest energy companies to sell power.

For community renewables to fulfil their potential, we need to change the way that energy is bought and sold, to make sure that community groups and co-operatives can compete. We’re not talking about special treatment or subsidies – this is about making an unfair system a bit fairer. We would like to see government take the following steps:

- signal clearly that community-owned energy can make a significant contribution to UK energy goals, and that it will be considered in the design of energy policy and markets

- make sure that there is a clear route to market for community energy schemes, bringing together all those involved in planning, legislation and permitting, so that the process is as predictable as possible, and people know what to expect

- work with practitioners to offer a co-ordinated advice and support service for groups establishing schemes

- ensure that there is a clear financial framework for community energy, through FITs for smaller projects, and, for larger schemes, fair treatment in the new proposals for electricity market reform

- encourage partnerships, through incentivising energy companies, local authorities and others to work with communities and offer part-ownership of renewable energy developments.

Co-operatives UK and The Co-operative Group will shortly be publishing their own manifesto, setting out how government could encourage community-owned energy.

If politicians are serious about their support, they should back these measures and make sure that our energy system works for the benefit of all, not just the large, established players. If we get it right, there could be Ovescos and Baywinds in every town and village. Our energy system, and our communities, would be stronger and more resilient as a result.

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"Where the community owns a stake or 100% of the energy that is being generated, power and influence is spread more widely across the membership."

6. Community benefit from energy generation

Gareth Thomas MP

CENTRICA, owners of British Gas, one of Britain's biggest energy companies, has once again posted very good profits; made out of our individual energy needs. Isn't it time we got more for our money? That we had a stronger stake in how our energy gets generated, who benefits and where the profit goes? In the US a very different and far more diverse energy market exists. At its heart are energy co-operatives.

Indeed, there are 42 million American citizens – the equivalent of two-thirds of the British population – who are members of energy co-operatives, getting their energy needs met not from big energy companies, like the big six energy firms that dominate the UK energy market, but rather from ordinary people pooling their buying power to get a better deal. Even given the size of the US, the co-operative energy movement serves 12% of US energy consumers, far exceeding the reach of the UK's small energy co-operative sector.

US co-operatives have a long track record of being ahead of private and municipal energy businesses at getting their customers reconnected after the regular storms that batter the US during hurricane season. After Hurricane Katrina, for example, energy co-operatives sent teams into areas

around New Orleans hit by the storm, normally served by the local energy co-op; to get their members (and customers) reconnected quickly.

Could things change in the UK? Co-operatives here have a good track record so far of attracting investment from local people who otherwise wouldn't invest in energy directly. And with concern growing about how our future energy needs will be met and increasing recognition that co-operating consumers could get a better deal for themselves and their communities, there is growing interest in how the Government could map out a different, more decentralised and inevitably more sustainable energy market.

The last Labour government saw and encouraged the growth of the social enterprise movement and the beginnings of a new community energy model providing mainly wind energy but some solar energy too. Baywind Energy Co-operative in the Lake District was the first to raise the required finance for turbines through community shares. More recently Westmill Wind Farm with five wind turbines and almost 2,400 members, on an old airfield near Watchfield, South Oxfordshire, has been producing enough electricity for 2,500 homes.

But, if energy co-operatives and social enterprises are to be able to offer a real challenge to the traditional energy firms embraced by the Coalition, a far stronger set of signals from the Government will be required.

One of the key lessons from the US is the need for a strong 'champion' of consumer-led energy co-operatives

and social enterprises to provide dedicated support, expertise and advice. In the US it is the National Rural Energy Co-operative Association, in the UK a new similar body would be needed to help local people prepare, finance and run community energy schemes. Such a body would help to galvanise interest in new forms of community ownership of energy generation.

In the 1980s a TV advertising blitz featuring the 'Tell Sid' message drove home the opportunity to buy shares in newly privatised energy companies. We need a new share ownership drive in the energy industry – community shares giving people a real stake in the generation and distribution of the energy they use. Because the lesson we've learnt since the 1980s has been that individual shareholders on their own don't have enough power to really make the boards of the big energy companies sit up and take notice of local needs.

Where the community owns a stake or 100% of the energy that is being generated, power and influence is spread more widely across the membership. Crucially too, the benefits of the energy generated are spread across the membership, helping to keep more of the money the energy generates in the local community rather than it being 'lost' in large profits or high executive pay, often to companies based far away from where the original energy was generated.

In the UK, community-scale energy schemes are slowly expanding but far more slowly than many other countries, notably Germany. While they tend to be based in rural areas Brixton Energy, with its solar panels initiative, is an

encouraging exception. To help drive a more rapid expansion of community-owned energy the Government needs to be bolder in the incentives it creates within the energy market and the supporters of renewables need to embrace co-operative energy with more enthusiasm.

Too many supporters of renewables aren't concerned who owns the wind farms or where the solar panels are built. While I support the ambition to dramatically reduce our emissions and have long supported efforts to expand wind, solar and hydro power we need to think through more carefully who benefits from these new sources of energy generation and how they can help make more of our local communities more resilient to economic shocks.

There are a series of other obvious steps that could help to drive the expansion of the community energy sector. We could, for example, re-designate some of the subsidy the Government rightly makes available for wind power, for community wind power. The big six energy firms can afford to take a risk on particular sites for new turbines but community schemes need assistance to manage their first steps into the energy market. Switching more of the available subsidy for renewable energy to community or co-operative owned schemes would provide a real financial catalyst for change. Similarly tax incentives could be offered to help drive local investment in 100% owned co-operative energy schemes.

It needs to be made easier to deal with the regulators in the energy world. Again the big six can manage the costs in time and money of dealing with Ofgem or the Environment Agency. Both these bodies and the local

planning authorities could be incentivised to help co-operative energy schemes.

Every time a new source of energy – a new power station, a new wind farm or hydro scheme – is established the big energy companies have to secure a licence and/or establish a company to raise the finance to drive the scheme. The government could insist through incentives built into legislation that a right is created for local people to invest in the new energy 'companies' (subsidiaries in the main of the big six). After all, why shouldn't local people, whose ever rising energy bills will have to pay for this investment, not have the opportunity of a more direct financial benefit from the energy being generated in their neighbourhood.

I understand the power of markets and the benefits of strong competition, but we need to ensure those benefits and power are used for the general good, rather than the self interest of a few. Co-operatives offer the possibility of a new 'shared capitalism'; ensuring more benefit from the efficiencies and opportunities that properly regulated markets can create. Energy co-operatives have a far larger reach outside the UK. Isn't it time there were more opportunities for a new generation of innovative energy co-operatives to emerge here too?

Gareth Thomas is Labour and Co-operative MP for Harrow West and Chair of the Co-operative Party.

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"Transforming the energy market has far more to do with power - democratic power - than with electricity."

7. Allies in Energiewende

Alan Simpson

WHILE Britain's 'radical' energy thinking gets no further than 'community buying schemes', wrapped around the old 'rigged' market, Germany has been changing the nature of the market itself.

German towns, cities and regions (of different sizes and persuasions) are now seeking to bring electricity distribution grids into social ownership. This runs from small districts right up to the current initiative in Berlin, where the City is seeking to buy its power distribution network back from the utility, Vattenfall.

What the Germans have understood (and we have not) is that transforming the energy market has far more to do with power – democratic power – than with electricity.

A different energy future

The Germans have opened the door on a different way of thinking about energy futures and energy security. In promoting a more open, competitive energy market, successive German governments have also become less afraid to take on the vested interests of their big power companies.

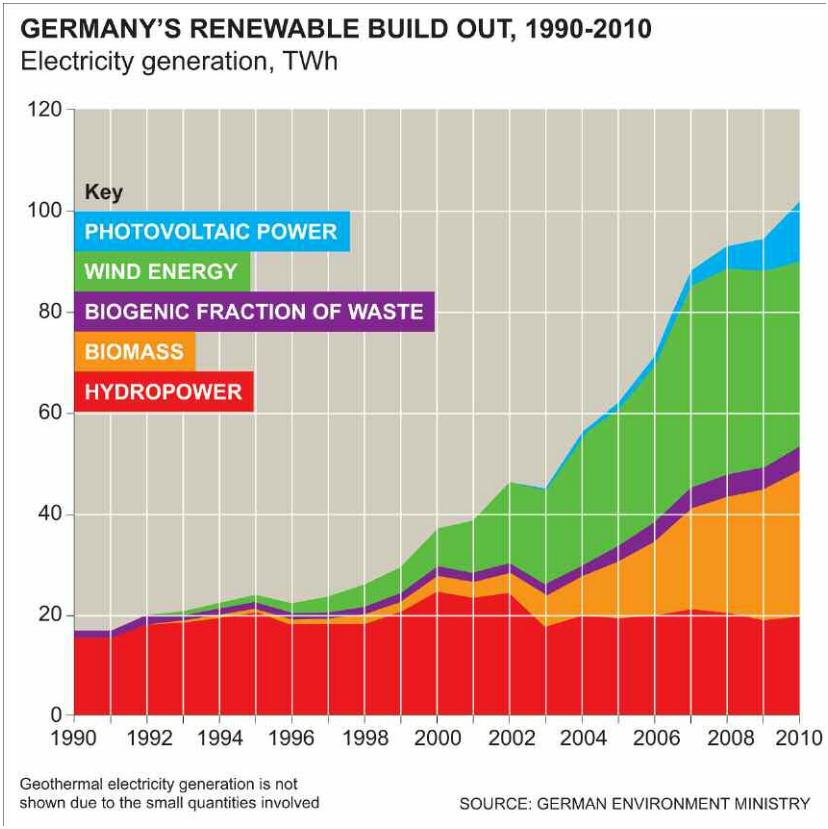
This profound change in energy thinking is at the core of all the practical changes in German energy policy.

Break the umbilical link between the power station and the light switch in your home, and it becomes easier to explore the different elements that will make up tomorrow's energy systems; selling demand reduction rather than increased consumption, using smart technologies that deliver more but use less, and extending community ownership of energy generation and distribution networks.

Empowering the people

Since 1990, German citizens have had a legal right to be producers and suppliers of electricity to their grid system. Two-way meters are a given, not an experiment. German households expect to know how much energy they produce as well as how much they consume. While Britain still plods through a tortuous debate about 'trials' of two-way meters, the Germans have been using them to transform energy politics. The right to generate became the power to transform. It also provided the platform for constructing a more open, democratic and sustainable energy market.

Germany's big step-change came in the early 2000s, when the government introduced a system of preferential Feed-in-Tariffs (FITs). These tariffs paid people more for the 'clean' energy they produced than the cost of energy they consumed from the grid. In all cases, FITs payment rates decline over time. Ultimately, each technology must 'wash its own face' economically; becoming market competitive or being displaced by something that is.



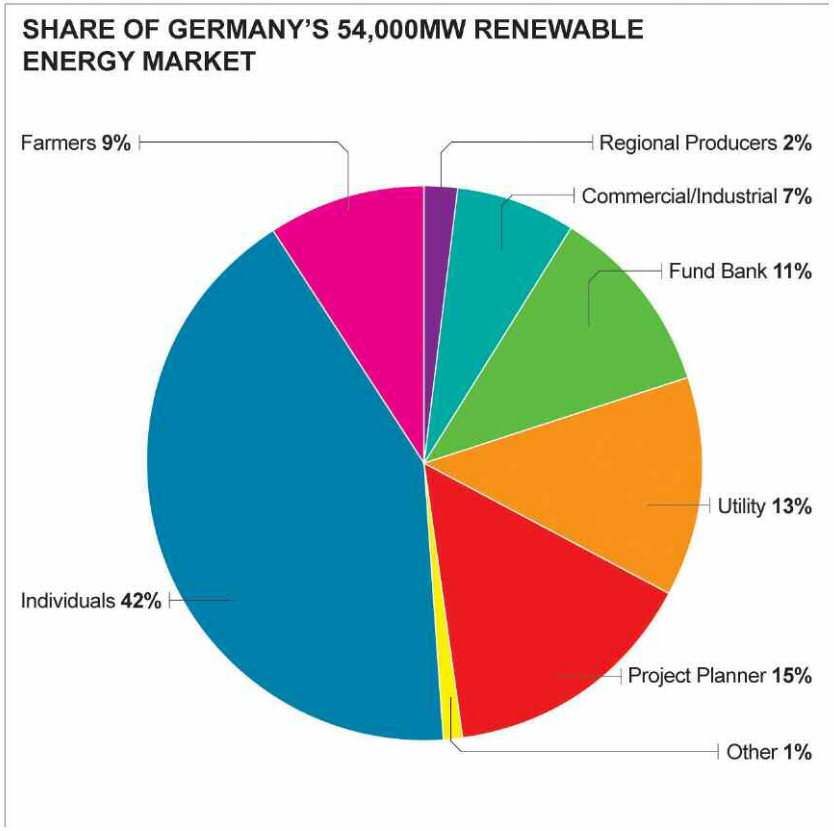
On anyone's terms, Germany's renewable energy programme has been astonishing.

The graph above only paints a partial picture. It does not show how, in less than a decade, Germany's FITs programme has:

- delivered over 400,000 new jobs
- transformed an energy sector, that once had only four major suppliers, into one with over two million contributors

- brought in over €30 billion of private investment a year
- delivered lower German power prices than they had five years ago, and
- operated without public subsidy.

Started under the Social Democratic Party/Green administration and continued by Angela Merkel's Christian Democrats, this is not a bad decade's work, even by German standards. But the most telling statistics are in the ownership pattern of the renewable energy investment.



Over 50% of Germany's renewable energy generation is owned by households, communities and farmers. Energy utilities own less than 13% of the new generating capacity. *(See diagram on page 51.)*

The energy war zone

Energy transformation is still a war zone, even in Germany, and not mainly because of climate sceptics. As in the UK, old power empires refuse to die easily. A fierce battle is being waged by 'old energy' to sabotage today's transformations. Britain may have led the last two energy revolutions – from wood to coal, and from coal to oil – but the same vested interests keep us locked at the margins of the current energy revolution.

In Germany, energy companies tried to block policy changes by dragging the government through the European courts; saying that new policies were anti-competitive or market distorting. The energy companies lost.

In the UK, 'old energy' opted (more successfully) for the colonisation of Whitehall. The outcome can be seen in the shambles of the Draft Energy Bill. Its framework would leave Britain with an even more closed energy market, saddle customers with ever spiraling energy bills, introduce a new £5 billion a year nuclear subsidy, and ensure that successive governments could not meet current UK climate targets. It is an agenda for 'dead-end' Britain.

As the Germans discovered, the way to become a leader in tomorrow's energy revolution lies as much in the

empowerment of citizens as in the shift into particular technologies. Germany simply put the interests of citizens before those of corporations.

Within the last decade Germany has installed over 60GW of renewable energy capacity; the same as the UK's current daily energy consumption. Last year alone they installed 7GW; more than the UK installed in over a decade. German power prices are lower today than they were five years ago and the country remains a net exporter of electricity. We are a million miles adrift. Britain may be at the bottom of today's EU's 'renewable energy' league, but this was where Germany started from too. They went from the bottom to the top in less than a decade. All it took was 'vision' and 'leadership'.

Allies in 'Energiewende'

Germany is still at the beginning of its 'Energiewende' programme – their energy transformation plan. By 2020, Germany intends to generate 35% of its power needs from renewables and to reduce energy consumption by 20%.

But the beauty of Energiewende is in its ability to weave the interests of industry, local communities and environmental groups, into a unified consensus for radical change. The result has been massive public involvement in German energy policy, along with a sense of social ownership of the transformation. In no small measure, this has been built on the ability of Feed-in-Tariffs to drive down power prices; something the UK Treasury seems intellectually incapable of grasping.

Breaking the energy cartel

Britain's energy market reform debate has not managed to escape the dead hand of Treasury insistence that FITs have to be treated as (capped) public expenditure. The Germans refused to accept such nonsense.

From the start, German FITs have been treated as independent elements in energy sector accounting. What then made the difference is Germany's decision to give priority grid access for all renewables. German solar and

wind energy are the first power sources fed in to the energy system. It leaves incumbent power providers to alter their energy mix and output to ensure a balance between power demand and supply.

German utilities no longer control energy supply (and energy prices). Renewable energy drives down peak electricity demand and now supplies anything from 30% to 100% of German electricity needs. This has driven the fall in German power prices *(see chart on page 54)*.

It may have angered 'big energy' but this has been seized on by the country's big industrial/ technology companies. Bosch, Infineon, Siemens, VW, BMW and others, have become the leading edge of the new energy revolution. Innovation and invention are at the core of the energy efficiency and 'grid balancing' mechanisms that tomorrow's energy systems will revolve around.

Germany has grasped (before most others) that the 'iPad generation' will see smart technologies driving huge increases in energy capacity, on the back of huge reductions in power consumption. It will also deliver innovative ways of storing electricity as well as using it. This will define a completely different landscape of energy thinking. The game is being taken away from the power companies, and the power companies hate it.

A different economics

So, how does Britain get into the game? It is hard to find common ground between what passes for an energy debate in the UK and the deliberations that have been

taking place elsewhere. What the UK defines as unaffordable, Germany sees as pivotal. What we count as a cost, the German's recalculate as a gain. Where the Coalition produces 'reforms' that would lock Britain into an (increasingly unaffordable) past, Germany presses towards a more sustainable future.

In achieving a 40% carbon reduction target, by 2020, Germany expects to:

- create 500,000 new jobs
- save €22 billion in avoided fossil fuel import costs (rising to €38 billion by 2030)
- boost GDP by €20 billion per year
- make German national debt €180 billion lower (by 2030) than it would have been without their climate protection measures, and
- deliver a surplus of 34 euro cents on every tonne of carbon saved.

It would be easy to conclude that the trouble with 'those bloody Germans' is that they are just bloody good. But then, we could be too.

In Germany, it began with a willingness to think beyond yesterday's energy agenda and yesterday's energy interests. Energiewende is based on a different understanding of tomorrow's energy systems, their use and their ownership. This is where Britain must be too.

A step-change is needed in Britain's energy thinking. Learning some of the lessons from Germany would be helpful. But what we really need is a different vision for a new energy future.

Alan Simpson was Labour MP for Nottingham South from 1992-2010. After advising Ministers on renewable energy policy, he left Parliament to concentrate on energy and environment policies. He and his family live in an eco-house they converted in the middle of Nottingham. He is a net supplier of electricity to the grid.

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"Across the country local councils are leading the way in creative energy projects that are not only helping make energy more affordable, low carbon and secure, but are also helping the local economy."

8. The role of local government

Andy Sawford

THE ENERGY sector in the UK needs fundamental change if we are to provide affordable power to everyone, lift people out of fuel poverty and make the transition to low carbon energy supply. At the same time, we need to make sure the lights are kept on.

Achieving the three goals of affordability, low carbon energy supply and energy security will not be an easy task. We will need to reduce demand for energy, by being more energy efficient, and switch to low carbon sources of energy. Microgeneration facilities will have a big role to play. This is a big departure from the traditional energy market in the UK, which is highly centralised and dominated by just six large energy suppliers.

Helping households to become more energy efficient, and encouraging more microgeneration facilities is fundamentally local. With the Green Deal and the Draft Energy Bill having received so much attention in recent months, the important role that councils can and have been playing can be somewhat overshadowed.

One of the reasons why the Community Energy Saving Programme worked was because it took a ‘community approach’ – bringing together suppliers, energy

companies, local government and others, to work together in promoting energy efficiency to whole communities. And the success of the Green Deal will depend similarly on local government too.

But it is not just about local councils implementing central government policy. If the energy sector is to be truly transformed, local councils will have a pivotal role to play. This might be in working to support energy efficiency improvements to the local housing stock. But it could also be in supporting new, local low carbon generation.

New ways of supplying and using energy generation will result in new townscapes. There could be boilers serving towns with cheap and low carbon heat, some plugged into citywide heat networks. Most properties will have solar PV panels and much reduced energy bills. Some neighbourhoods will have invested in local renewable energy and used the money made to fund community schemes. It sounds utopian, but it has already started, and the direction of travel is one way.

And it's not just about energy. Of course, maintaining a secure, low carbon and affordable energy supply is a good thing in itself. But there can also be wider benefits to local jobs and growth that come alongside more local energy generation.

Across the country, local councils are rising to the challenge of transforming the energy sector and leading the way in transforming local communities through low carbon energy supply and energy efficiency measures. A number of examples of local authority leadership are the

subject of chapters in this book. Take Stoke for example – they are using creative solutions to support local jobs, aiming to become locally energy self-sufficient. In Stevenage the local council is using housing development not just to tackle the housing shortage, but to help their tenants with rapidly increasing energy costs and meet their overall ambition to contribute to addressing climate change as well as create jobs and training opportunities. And in Southampton, when central government said it was uneconomic, the City Council took an abandoned bore hole and developed gradually a heat network to serve Southampton.

In Kirklees, policies are being developed to offer grants to businesses for energy efficiency improvements. These grants attract further investment by the companies themselves and tend to be delivered by local companies, further benefiting the local economy. Kirklees council are also supporting local businesses to diversify into new products and services which will contribute to a low carbon economy and create new jobs in Kirklees. The Huddersfield-based company David Browns, for example, has secured £2 million of Regional Growth Funds to develop a world class renewables research and development innovation centre in Kirklees.

Sheffield City Council has set itself the ambitious goal of becoming the UK's first decentralised energy city. The council's aspiration is for Sheffield to become a thriving low carbon city, leading the way in combating climate change and empowering residents and businesses to reduce their own impact on the planet's resources. This is a long term goal, and requires the council to plan for

greater levels of investment in low carbon energy generation, low carbon transport and high quality, low energy homes and buildings.

And there are many more examples of councils doing great work, too many to name here.

What is interesting in all of these examples is that the initiatives being undertaken by these councils, are not only aiming to make energy supply more affordable, low carbon and more secure, but also to support the local economy and local jobs. While the Treasury and the Department of Energy and Climate change continue to battle over support to low carbon energy generation, local councils are proving at a local level that investing in low carbon energy generation and energy efficiency measures can support local jobs and growth.

The UK won't achieve its carbon reduction targets, unless all local areas do their bit. But the Government hasn't made it easy for them. The removal of climate change targets coupled with front-loaded cuts means local councils, who need to manage their budgets across a host of competing priorities, might struggle to keep up their activity on climate change. But as the examples here have shown, taking action to tackle climate change can actually be an income generator. It is important, therefore, that local councils share the learning from their low carbon initiatives with other local areas.

But it is also important that central government gives local councils the support they need. Central government needs to provide a clear framework for local government to

operate within, while giving them the freedom to act in a way which works best for their local area. With new initiatives, like the Green Deal, Government should be mindful of the role that local government can play and make sure there is space for them to lead action in their local area. Similarly, with the Energy Bill due to be published this autumn, it is vital that the Government thinks about the important role local government can play and, rather than reinforcing the old centralised energy market, marks out a clear role for local and community led energy projects.

Regardless of the nature of the solution, whether it is energy generation or energy efficiency, local councils have an important role to play. Across the country local councils are leading the way in creative energy projects that are not only helping make energy more affordable, low carbon and secure, but are also helping the local economy. Councils must work together to share their learning and support such action in local areas across the country. But there is also more for central government to do, to give local councils both the freedom and the support they need to really make the most of the transformation in the UK's energy sector.

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"Part of the solution lies in the creation of a local/our own energy company, so that the local authority can take a stake in how the energy is delivered and at what price."

9. Energy innovation in Stoke-on-Trent: turning grass cuttings to gold

Councillor Mohammed Pervez

LOCAL authorities of the Victorian era led the way in the creation of the basic infrastructure of Britain's cities because they saw a collective local need, for power, sanitation, heat and light and understood that only they could make it happen.

Our motivation to lead on energy security is more local and even more historic than the achievements of the city leaders of the 19th century. The City of Stoke-on-Trent, the Potteries, is the home of many famous entrepreneurial ceramics makers including Wedgewood (c1759), Spode (c1770), Minton (c1793), Dudson (c1800) and Royal Doulton (c1815).

They and their continued success in Stoke-on-Trent is what has fired our imagination and pioneering efforts to lead on local energy self-sufficiency.

On the back of our success in the elections for Stoke-on-Trent City Council in 2011 this Labour council took control and worked with the breadth of local people to define a Mandate for Change, which is a powerful set of commitments to reposition the Stoke-on-Trent economy. We and the people of Stoke-on-Trent have signed up to making the city a Great Working City.

A key part of this challenge is our ambition to be energy self-sufficient by 2030.

We all know that fossil fuel based energy prices are on an upward trend. In Stoke-on-Trent we are particularly aware of the potential economic impact of energy prices. Many of our major employers continue to make ceramics and their ability to trade those goods in the UK and internationally helps employ over 10,000 local people. Making ceramics is an energy intense business with kilns operating at over 1,000^{o}C. Most of that heat comes from natural gas. For some of the larger ceramics firms their gas bills have increased by 30%, 40%, even 50% over the past few years, adding hundreds of thousands to their cost base.

And of course the world is facing a changing climate and the UK government has signed up to robust and legally binding targets for the reduction of greenhouse gas emissions. As Leader of our City I know we have a part to play.

Meanwhile much of our housing stock is old and hard to heat from an energy perspective… the ceramics kilns typically eject hot air at 800^{o}C straight into the atmosphere… the hard to treat homes are next to the ceramics factories… can we connect the heat?

Then we have 3,000 tonnes of grass cuttings being composted from our grass cutting operations (previously land-filled)… and yet if we used an anaerobic digester we could make methane, which is the fuel the ceramic sector needs.

From our perspective these are all assets, whereas previously they might have been labelled liabilities, and the local authority can play a role in optimising them.

Stoke-on-Trent is already delivering on its mandate – we have a newly established Centre for Refurbishment Excellence (CoRE), a national training centre for learning retrofit skills in partnership with the Stoke College and the Building Research Establishment. We will have a new bus station and plans to regenerate our city centre, worth £0.5 billion, and the city council has committed to a move to two new purpose built (low carbon) buildings in the central business district.

While these many different things may seem a little disparate they are all parts of a bigger strategic whole; parts that can help create a local energy solution for the city. Bringing this to fruition is where I believe much of the local innovation can be seen.

We have learnt a lot from the efforts of other authorities, including those that have developed heat schemes, such as Southampton, Woking and more recent developments such as Exeter, Manchester and Birmingham.

Their work has helped us appreciate a further strategic step, considering the whole energy equation for the city, looking at the demand and the supply of electricity, gas and transport fuels (we are close to the M6 and a number of important distribution hubs). This has helped us realise that part of the solution lies in the creation of a local/our own energy company, so that the local authority can take a stake in how the energy is delivered and at what price,

and that certain technologies are more important to our circumstances than others as they help to generate gas and heat.

That focus has prompted us to explore the whole of the 'heat supply chain'. That includes how we can capture and cascade the 'waste' heat from the kilns to help power local heat schemes; capturing geothermal energy for heat, and exploring the conversion of some waste streams to create bio-gas (the grass cuttings) or synthetic gas (non recyclable plastics).

Making the vision of energy self-sufficiency a reality is, and will continue to take a lot of, hard work. Like many other authorities we have a talented team of officers, some with a long history of service to the city, others who have come from other places and other sectors with a willingness to help realise our potential.

We have also come to recognise that some of the skills and experience necessary (*eg* in the functioning and commerciality of the energy sector) are rare in the local government family. We have had to develop our ability to find and where necessary recruit or buy in such skills as needed.

We are key players in the LEP, with our neighbouring authorities, that brings together a variety of partners including local businesses, which allows us to engage them in the challenges and opportunities of local energy.

This has helped us reach a good strategic understanding of what's possible and what would be most beneficial.

We are extremely grateful to have had the good fortune to be seen to be innovating as a local authority at the right time to apply to and be successful in the joint NESTA/LGA Creative Councils programme.

As one of the now final six we will be working with NESTA and the LGA to take our work further, and importantly to develop a network with other authorities that allows each to share their learning about local energy, be that the best way to establish the corporate governance, or the pros and cons of technology X or Y.

This is what a forward thinking Labour council, with its vision and plans for economic growth and jobs for the City, can and will deliver.

Most local authorities are taking action to reduce their energy use, to become more energy efficient and even beginning to produce some of their own energy – these are all sensible actions of any large organisation, and are probably now in the 'day job' of facilities and corporate resources staff.

Energy use is an issue for everyone in your community, almost every place in the UK could benefit from a greater role or presence from their local authorities in local energy use or provision, or both. However, energy issues are long term, so you must ensure there is significant and senior buy in from the Cabinet, senior councillors, and senior management.

Making a meaningful impact will require specific funding – do you have the buy-in to make greater cuts elsewhere so

as to invest? If you have the buy in, and the seed corn investment do you have the right people and the skills (entrepreneurial and technical) – or know where will you find them?

And can you step back and take a strategic view of the current and future energy needs of your place? Recognising your place may be bigger than your administrative boundary, and that wider needs may not necessarily sit well with a purely council view of energy.

Stoke-on-Trent City Council is being supported by NESTA and the LGA to disseminate our findings, if you are interested in joining our learning network, please contact our team.

Councillor Mohammed Pervez is leader of Stoke-on-Trent City Council.

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"Building homes is not just about construction, it is about the social, economic and environmental conditions that underpin a healthy community."

10. The social justice 'trinity'

Councillor Sharon Taylor

How an intense building programme can tackle jobs and the economy, housing and fuel poverty

STEVENAGE, Britain's first new town, was built to house people. It was created through the vision of a Labour government after World War II. A government that wanted to get the economy moving, get people into work and provide housing to replace the housing stock lost in war-torn parts of London. The other part of the vision was to create an environment that was green and self sustaining where individuals, their families and communities could thrive.

As Margaret Thatcher started the 'sell-off' of council housing in the 1970s and 1980s, Stevenage Council housing stock diminished from over 30,000 homes to just over 8,000. It has been impossible to replace that social housing as the original town planning placed very tight boundaries around the new town and in spite of a 17-year battle with the planning process, that situation still exists.

However, as Stevenage has had a Labour council since 1971 when the Development Corporation was wound up, housing has always been a top priority. Our pioneers early commitment to the part that good housing and a good

environment can play in helping people to achieve their potential and meet their aspirations is deeply embedded here.

Thanks to the three terms of Labour government since 1997, Stevenage housing has undergone massive improvement as part of the 'Decent Homes' programme. We have made use of the contracts to ensure they include apprenticeship programmes and, in fact, our contractors have gone further with one setting up a training programme for 12 long-term unemployed who worked locally to gain their Construction Skills Certificate. Some of those individuals went on to employment with our contractor.

But we know that in order to tackle a severe local housing shortage, we have to find as many creative ways as possible to build new affordable housing. Stevenage has done better than other places in the East of England with new affordable housing starts – in some years we have had the highest level of delivery. However, our land availability is severely limited so we have had to use our imagination and create housing schemes through regeneration and by using relatively small sites to deliver unique opportunities.

As the economic climate began to change, we knew we must use our housing development to tackle not just the housing shortage, but to create jobs, provide much needed training in skills (particularly the new skills needed to build in a sustainable way), to help our tenants with rapidly increasing energy costs and meet our overall ambition to contribute to addressing climate change.

That was the genesis of the building project which has delivered one of the first council housing developments in the country to meet levels 5 and 6 of the code for sustainable homes.

The aim was to develop family homes for social rent which enabled residents to lead a sustainable life style, benefit from reduced energy bills and also to provide a body of research on homes designed to the highest standards of sustainability.

Our sites at Peartree Way and Cotney Croft look to the future of housing, how it could look in spite of increasing space constraints as well as how it contributes to residents' concerns about the increasing cost of energy without them having to master complicated or confusing technology.

Stevenage Council provided the land which was a former garage block and the site of some housing needing regeneration, we also contributed a substantial sum from Section 106 agreements and Housing Growth Funding. Funding was also provided from the Homes and Communities Agency.

This development also maintains the original Stevenage ethos that building homes is not just about construction, it is about taking account of all the social, economic and environmental conditions that underpin a healthy community, so as you would expect from a Co-operative Council, extensive consultation was undertaken with the local community before the building work started.

Each house is highly airtight, has photovoltaic roof tiles, benefits from rainwater harvesting and subsequent reduction in water usage and building materials are from sustainable sources.

Tenants were from the current housing waiting list and they enthusiastically embraced the innovation they were piloting in their new homes. Particularly as full use of the systems will mean they have little, if any, energy costs.

Kerri O' Conner, one of the first residents to move in with her family at Cotney Croft, said: "I absolutely love it, it's incredibly warm and should definitely be saving us some energy bills. A consultant came round to explain the different features and it's pretty straightforward to use."

The scheme is being monitored for two years by Anglia Ruskin University as it is very important to us that all the lessons are learned from this project to make sure it can be effectively replicated not just in Stevenage but hopefully in the substantial house building programme that the next Labour government will need to undertake.

Sustainable building is very important to the future of Stevenage, our ambition to build a further 16,000 homes for the town is not diminished, just delayed.

A substantial number of those homes will be affordable and social housing for rent, so we need to learn what we can about how to use that building to provide local jobs and skills, keep energy costs low, reduce carbon emissions and develop healthy communities. We are already putting everything in place to do that and the steps

we are taking will help deliver this agenda whether we build just a few houses, or achieve the numbers we need.

Our partnership with North Hertfordshire College has developed a well-equipped skills centre where our young people can learn the latest building techniques as well as plumbing, electrics, mechanics and other skills.

As an entrepreneurial college, those young people are encouraged to learn through operating their own business units, so alongside the technical skills they acquire, they go to employers having something to contribute to the running of a business. We hope that the techniques of sustainable building will be a fundamental part of their learning programme.

Stevenage is now over 60 years old and, along with other first generation new towns, we are suffering from the new town 'time bomb' that as all of our town was built over a relatively short period, it is now all deteriorating at the same time. So we have significant regeneration needs.

We are about to embark on the biggest regeneration programme the town has seen since its inception, with programmes for our town centre, neighbourhood centres and housing. Of course, with the Conservatives unwilling or unable to deal with the flat-lining economy, we may have to wait for a Labour government in 2015 to get going. But we must be ready.

It is possible, as the new towns proved in the 1940s and 1950s to regenerate the economy through house building. We can also use the model sustainable building

techniques that Labour councils are developing to tackle fuel poverty and to teach our young people the skills they will need to build for the future.

We have demonstrated in Stevenage that communities grow and thrive where homes are built in neighbourhoods that contain the schools, shops, medical facilities and other infrastructure to support families. Those same communities can now be developed so that they contribute to the global community by reducing their carbon emissions and by ensuring they are economically self-sustaining.

Tackling the economic crisis will be the biggest challenge for the next Labour government, it will provide a great 'trinity' for social justice if in addressing that we can also solve the housing and energy crisis.

Councillor Sharon Taylor is leader of Stevenage Borough Council and Labour & Co-operative candidate for Stevenage.

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"People want to be certain that when they switch supplier there won't be any problems. They want to be able to get the best deal."

11. Collective switching avant la lettre

Filip Vissers

ENERGY bills are now one of the biggest costs families face.

As energy bills have risen, many people have lost faith with the energy market, and the number of people switching supplier has hit a record low. According to Ofgem, 60% of consumers have never switched energy supplier and 75% of people are currently on their supplier's 'default' standard tariff. Research by the consumer group Which? has shown that consumers are missing out on £4 billion a year by not switching.

Ultimately, the only way energy bills will be reduced is by fundamentally reforming the way the energy market works and simplifying tariffs so customers can find the best deal. But there are actions that can be taken now to help people get a better deal. Community leaders can bring people together to collectively purchase energy so that they are in a better position to negotiate cheaper energy bills with the energy companies.

Collective switching in Belgium

iChoosr have already successfully implemented collective switching schemes in Belgium and elsewhere. The

company was formed in 2008. The driving force behind the company is that in the near future the focus of power will increasingly shift from the producer to the consumer. The name iChoosr is based on this concept: 'I choose' what I want and will no longer allow myself to be overloaded and confused by the huge amounts of information and offers I receive.

Since the deregulation of the energy market in Belgium, there has been a gradual but growing tendency among consumers to switch suppliers. But studies into this by organisations such as the VREG (the Flemish Regulator of the Electricity and Gas market) have identified a number of reasons why households still don't switch. Households are worried that problems may arise when switching to a different energy supplier. They also find it difficult to compare energy suppliers with each other using energy price comparison sites on the internet.

Actively informing households in a readily understandable way on the options and benefits of switching supplier has a major influence on whether households actually do switch suppliers. The important considerations for households in Belgium when switching are price and the supply of green electricity.

Community leaders can play an important role in encouraging people to switch, especially when they are unsure about the different packages they are being offered by different companies. iChoosr has always taken as its starting point the existing relationship and confidence enjoyed between a community leader – such as the Province of West Flanders in Belgium – and its residents.

Many community leaders want to do something extra for their members or residents.

Taking this idea, right from the start iChoosr has worked on the basis of a white-label approach. For each collective switching scheme it works together with a community leader which lends its name to that particular switching scheme.

In doing so, the community leader is responsible for providing information about and promoting the collective switching scheme among its members. iChoosr is responsible for the entire registration and switching process, the auction, the helpdesk and supplier management.

In 2010 and 2011 iChoosr was commissioned by the Province of Antwerp to organise two collective switching schemes for 100% green energy. These schemes proved to be highly successful, with more than 68,000 participants signing up and more than 33,000 participants accepting the offer.

In 2011 and 2012 iChoosr was commissioned by the Province of East Flanders to organise two equally successful collective switching schemes for 100% green power, with more than 91,000 participants signing up and more than 34,000 participants accepting the offer.

In addition, in 2011 a collective switching scheme for 100% green energy was organised by Province of East Flanders which also proved to be very successful, with more than 44,000 participants signing up and more than 25,000 participants accepting the offer.

Taking this approach elsewhere

iChoosr has its head office in Antwerp, but also has offices in Amsterdam and London. From these offices they organise collective switching schemes in Belgium, the Netherlands and the UK. This is a considerable advantage, as the energy markets are at different stages of deregulation in different countries.

For example, since deregulation in the Netherlands more than 40% of all households have switched to a different energy supplier. We are using the experiences obtained in Belgium to improve collective switching schemes further in the Netherlands, and vice-versa.

The concerns people have about switching in Belgium are very similar to the concerns people have in the UK and elsewhere. People want to be certain that when they switch supplier there won't be any problems. They want to be confident in their comparison of suppliers, and be able to get the best deal.

iChoosr's approach seeks to respond to these concerns in a number of ways. They seek to provide households and community leaders with clear information about the options and benefits of switching supplier. They have an accessible and easy registration process and households can sign up free of charge and without obligation to the collective energy switching scheme.

They aim to deliver a problem-free switchover process – participating suppliers must sign strict supplier conditions in order to guarantee quality service and a good

switchover process. The switchover is supported by a helpdesk for the quick solution of any problems.

Throughout the auction process, suppliers compete against each other in a transparent but anonymous manner, which results in low prices. Households are informed, without any obligation whatsoever, about the lowest price of the winning supplier. Based on this information the household can make a well informed decison about whether to accept or decline the offer.

Experience has shown that iChoosr's approach works particularly well in reaching consumers who have never switched supplier before. With previous switching schemes, up to 70% of all participants and accepting customers had never previously switched energy supplier.

iChoosr works closely with a variety of bodies and organisations, and has already worked on collective switching projects with the provinces of Antwerp, West Flanders and East Flanders, the Belgian Labour Party, Media Company Concentra, Vereniging Eigen Huis (the Association of Homeowners) in the Netherlands and South Lakeland District Council in Great Britain. There is great potential for their approach to be emulated across the UK and elsewhere.

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"We need a new approach which recognises the empowering qualities of renewable technology and celebrates the benefits it can deliver to all sectors of society. When policymakers begin to recognise this, then a different energy market is possible."

The Local Government Information Unit (LGiU) is an award-winning localist think tank and membership organisation. We work on a cross-party basis with councils and with other partners to share good practice and develop new thinking.

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