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Observatory

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Fit for the Future



What's your vision of a low
carbon future?

October 2010

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Fit for the future

What's your vision of a low carbon future?

Version 1.0 for publication
October 2010

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1 Foreword

By Rosie Paskins

Back in 2009, the Observatory initiated a debate on the economic future of the West Midlands with our publication “West Midlands: Fit for the Future?” In a series of articles, authors from a range of organisations and backgrounds debated how the West Midlands could best position itself for economic recovery.

Eighteen months on and much has changed, not least in national government. Since coming into power in May this year, the coalition government has made radical, fast and far-reaching changes. In particular, the abolition of the regional tier of government, particularly Regional Development Agencies, will completely alter the landscape of economic development across England.

Despite the resulting turbulence in local and regional government, the social and economic challenges facing the West Midlands remain. The Observatory remains committed to providing an evidence based approach to tackling those challenges and taking advantage of emerging opportunities.

And there are many opportunities for the West Midlands moving forward. The low carbon economy is one. With such a proud manufacturing heritage and innovation in its blood, the West Midlands’ potential to thrive in a low carbon economy was something a number of authors focussed on in our original Fit for the Future publication. And so it seemed natural for us to move the debate on with a second set of articles exploring what a successful low carbon economy might look like and how the West Midlands should transform to meet that vision.

In such a time of uncertainty and transition, I’m pleased to be able introduce this series of articles on the low carbon economy. I’m very grateful to all the contributors for their time, creativity and expertise in putting the articles together. I do hope you enjoy reading their contributions, and I encourage you to leave your own comments on the articles as you read them. It didn’t seem quite right to print paper copies of a book on low carbon, so we have adopted an innovative web based approach to publication, using open source technology.

I hope the articles provide you with food for thought, as well as stimulating debate on the important issue of the low carbon economy and what it might mean for the West Midlands. We look forward to reading your feedback and continuing the debate on how to make the West Midlands fit for the future.

2 Low carbon living for the West Midlands?

By [Roger Levett](#)

2.1 Mary and Julia: morning

Mary is woken by the alarm clock in the dark at 6.30, Julia by birdsong and sunlight at 7.30. Mary jumps up anxiously straight away: she knows she's going to need every minute. She rouses the kids (drowsy and complaining after a late night on their computers), deals with a complicated argument over who had the last of the Sugarpuffs and who should get the Exterminator toy from the next packet of Chocaholix in compensation, moves the other two cars out of the drive so she can get the people carrier out, puts them back again, checks the kids have the correct sports kit, does a big loop to two schools in different directions, takes ages to find a parking space and gets to the office 5 minutes late, already feeling fatigued and frazzled.

Julia stretches luxuriantly before getting up. She's got time in hand. Her kids have never been given the idea that what you eat for breakfast might be a matter of choice, so they just eat the apples, bread and yogurt she's got this morning with no fuss, and she waves them off on their bikes to school. Then she throws the crumbs to her chickens before selecting one of them to put in the wicker basket on the back of her bike. She stops off on the way to the office to hand the chicken to the butcher, with a punnet of plums. She catches sight of a neighbour she's been needing to talk to, and stops to agree about clearing the weeds from the mill leet that feeds the waterwheel that provides most of their electricity. She has to pedal a bit briskly to make up for the delay, and gets to her office bang on time, with a pleasant feeling of zest and accomplishment to start the day.

2.2 Mary and Julia: afternoon

Mary drives to the supermarket in her lunch break. It's a rush, but if she doesn't replenish the Sugarpuffs next breakfast will be terrible. The prawn wrap she grabs for lunch is fragrant and tangy with Thai lemon grass and fresh coriander, but she hardly notices as she bolts it on the hurried drive back to work.

Julia picnics in the garden square outside the office with a couple of friends who work nearby. They've each brought something fresh from their gardens and they swap around. Julia leaves work and cycles home at 3 because it's her turn to have a group of neighbourhood kids. On the way she picks up the chicken, plucked and jointed, from the butcher. He assures her that the plums she gave him, the feathers and the giblets for pate will be sufficient payment for his work. When the kids arrive she sets them to pulling carrots, parsnips and potatoes for a big casserole with the chicken which she puts in the solar slow oven. Then they pick more plums and make a crumble. Four families eat together. Then two of the others wash up, most of the kids go off to play on their bicycles, and others walk to the neighbourhood play rehearsal or home. Julia puts her flute in the wicker basket and bikes off to orchestra, leaving one of the neighbours she's just cooked for to check the kids get to bed and keep an eye on the house.

2.3 Mary and Julia: evening

Mary doesn't leave the office till 6.30. She's been too knackered to do anything useful for the last hour, but the firm is losing business to Chinese competitors and will have to shed staff, so it is not wise ever to appear less than keen. By the time she gets home her kids have microwaved ready meals out of the freezer and are firmly ensconced in front of their computers. She had hoped to go to the gym - she has hardly moved all day and is feeling stale and torpid - but she can't face the driving, parking, changing and so on.

Instead she loads the dishwasher and deals with the post that has been building up. Bills for gas, electricity, water, internet, instalments on the people carrier. Bills for top-up exam coaching for the secondary school tests, the accelerated stream, university entrance. Bills for child minder, cleaner, window cleaner, gardener, burglar alarm and CCTV monitor maintenance, health insurance, unemployment insurance, pension contributions, pension value safeguard insurance, car insurance, house insurance ... her pay always looks like a huge number, and taxes take a little of it, but by the time she has paid for all the things she thinks the household can't run without, there's surprisingly little left. And then there are the subscriptions to the health club, the tennis club, the dance club ... they are all too lethargic to go often enough to make these worthwhile, but Mary doesn't want to admit that the family just slumps in front of screens most evenings. Mary unloads the dishwasher, puts a load of washing on, and goes to bed tired but still fidgety, and sleeps fitfully, disturbed by the roar of traffic and planes taking off and landing and anxieties about money.

Julia never worries about money. Her income is pretty modest, and tax takes quite a slice of it, but most of her day to day requirements don't cost money at all, so there's always spare for little luxuries. She gets home exhilarated from the rehearsal and pleasantly worn out and composed by the bike ride back. She picked up her washing from the communal eco-laundry (she'll do her own fortnightly shift there tomorrow) and has been deeply asleep for hours, oblivious to the owls hooting.

2.4 A different way of life?

Of course these two lives are simplified caricatures which beg many questions. What about the benefits of material prosperity and consumer choice? Didn't our parents and grandparents live rather like Julia, find it limited and constricting, and struggle and work all their lives so that we could live more like Mary?

This essay holds no brief for the complacency, insularity and dullness of much English life of the 1950s and 60s, still less for the unremitting grind, poverty and narrow horizons of most people's lives before the industrial revolution - and in poor countries to this day. But a growing body of research shows that, since around the mid 1970s further increases in consumption have not made us any happier overall, but have brought increases in diseases of affluence, both physical and psychosocial. They have also led to an unsustainable rate of fossil fuel burning. And the intrinsic instability of the global system of deregulated speculative investment that powered the growth has now condemned us to years of brutal retrenchment, uncertainty, anxiety and waste of human potential. These would seem to be three good reasons to consider alternatives.

Julia's life is extremely good for climate security. Her household uses almost no carbon for personal transport (about a quarter of current consumption), or at home (another quarter). It incurs a fraction of current use for food and consumer goods (about another quarter) because their food is lower in meat and largely seasonal and local, and life is much less gadget-intense.

The remaining quarter is for public services and commercial buildings. The more people live like Julia, the less carbon intense infrastructure will be needed for energy, transport and waste. That lifestyle could also greatly reduce the need for a lot of the most expensive (and dreary) public expenditures: a society in which people get more healthy exercise, are out and about more in public spaces, watch out more for each other, get more fulfilment and satisfaction from their daily routines and less hassle and frustration, and in which large numbers are not affronted, humiliated and excluded from normal life by lack of jobs and money, is likely to need a lot less treatment of both physical and mental illnesses, criminal justice and social security.

Of course people will still get old, frail and sick; we'll still want to show off to each other, see the world, have new things and new experiences. No economic and social order, however idyllic, can hope to eliminate disorder, aggression, stupidity and accidents, all of which carry carbon as well as human and financial costs. Even our wholesome Julia may well wish to indulge in the occasional imported banana and pineapple, catch a bus to orchestra on a rainy winter night, and book a shared car to buy things too big to bring home in her bicycle basket - though maybe only once or twice a year, rather than several times a month as Mary seems to do. But still, this scenario makes the 80% greenhouse emissions cut by 2050 which climate science indicates is necessary, and government is committed to, eminently practicable.

Moreover Julia's lifestyle reflects what community visioning and future search processes reveal again and again, with striking consistency, about how people now aspire to live: time for family, relationships and conviviality, with opportunities for striving and effort (Julia's life is far more physically strenuous than Mary's) but in ways that express autonomy and avoid stress and helplessness.

2.5 Where's the catch?

Julia's world is terrible for economic growth. People consume far less, and they make more of what they do consume for themselves or each other, so it doesn't figure in Gross Domestic Product (GDP) or related measures. They have less stuff, and make it last longer. An economy like this might be a third, or a tenth the size of the current one measured in GDP or Gross Value Added (GVA) (as well as in carbon.) It is rich in things - time, family, community, culture, opportunities for health and for personal development - which are not traded for cash and do not figure in growth.

Since these are the things that research shows give people fulfilment and happiness, this is a problem for the way we measure and construe economic progress, rather than for the alternative pattern of life Julia represents. If more people could meet more of their needs more fairly and more sustainably without growth, maybe growth isn't such a wonderful idea in the first place.

But this raises a second problem: how do we get from here to there? The conventional economy has no mechanism, no tools for making such a transition. Indeed the market dynamic of companies competing to produce and persuade people to buy ever more stuff locks us in to Mary's life.

But we do not live only in the commercial economy. Even at its peak of success, everyone but a few lonely monsters lived at least part of their lives in the different world of family, relationships, friends and communities (of interests, cultures, shared origins, faiths and ethnic identities, not only of physical neighbourhood), where we do things for each other out of love, friendship, solidarity, duty or a sense of reciprocal obligation rather than for commercial payment. Many of us would always have said this was the better part of our lives: the part where we are most alive, most fulfilled, most fully and truly ourselves. Now the conventional economy is faltering, it is perforce becoming a larger part of many people's lives. We can start a painless transition to Julia's pattern of life by embracing and intensifying that: by developing institutions to extend and energise cooperation.

2.6 A different economy

Time banks and Local Exchange and Trading Schemes, in which people build up credit in local currencies by doing neighbourly things for each other, have been around for a while. They have tended to thrive in places like Stroud and Totnes for the exchange of aromatherapy for baby massage. We need to leave behind the tweekness and power them up to provide a standard, routine way for ordinary people to use week by week to provide basic essentials: A services the car for B who gives lifts to the shops to C who grows potatoes that D buys with credits earned giving football lessons to A's children and painting B's window frames, and so on. There aren't many households down an average suburban street who can't offer at least something that some of their neighbours are short of, whether it involves skills and equipment (car servicing, home maintenance), physical vigour (gardening) or simply time, patience, goodwill and good humour (looking after children) - things that many ordinary people have and can enjoy sharing, but which many would find ruinously expensive to buy commercially.

Of course neighbours do lots of these things for each other already. But reticence, inertia, the withering of social interactions and the incessant pressure of businesses to commodify and commercialise more and more of our lives - and, it has to be admitted, the service delivery model and mindsets of many public bodies - have left most communities atrophied, underpowered and reactive, with cooperation and mutuality at the fringes of life rather than its centre.

An irony of the politically interesting times we are living through is that this throwback to hippyism could fit beautifully with the hard headed cutting agenda of the coalition government. If public services must be cut, how much more elegant and humane to obviate them - to remove the need for them, than to ration or leave needs unmet. I offer another story to illustrate this, this time a real one.

2.7 A different society

I was recently walking along a linear park (ex railway line) in a suburb when I came on a council worker trimming trees with a telescopic strimmer attached to a tractor. This was producing a lot of noise and dust, leaving branches torn and smashed, and left a mound of mixed-up rubbish which was evidently going to be taken away by truck. It also necessitated coning off a section of the park and hectoring warning notices. While I was waiting to pass, an elderly lady came out of her garden which backed on to the path and lamented that the trimming was being done just before the plums ripened so they would be wasted.

This is not a story against the council. I would guess that their taking on management responsibility was instrumental in making this delightful and evidently cherished park viable. Clearly the trees did need to be trimmed, I'm sure that the man with the strimmer was the most cost effective method, and that the timing was dictated by other duties. But the net result of all these sensible considerations was that fossil fuel was being squandered doing the job in a horribly intrusive and destructive way.

This is the sort of public service which is going to be under huge pressure over the coming years. Given just a bit of encouragement, organisation and structure, I would guess there would be enough vigorous people in the neighbourhood to do the trimming by hand ... after harvesting the plums, and collecting the brushings for firewood and composting the green remains, all of which could earn credits in a local exchange and trading scheme. But it would need kick-starting. Rather than making thousands of people like that tractor driver redundant, would it not be better all round to help them become part time supporters and enablers of community action, getting part of their income in local currencies to offset a reduction in their conventional pay which could enable councils to cut costs without sacking people?

The crisis of the conventional economy can be less of a calamity if we use it as a spur and opportunity to make the transition to a different kind of economy, better for human fulfilment as well as low carbon.

3 Dreaming of a low carbon West Midlands - or the low carbon revolutionary handbook

By [Simon Slater](#)

"Martin Luther King did not say 'I have a nightmare', he said 'I have a dream'" Ed Miliband, Climate Change Minister, 2009.

"If you don't stand for something you will fall for anything" Malcolm X

3.1 Introduction

I have worked across the UK providing sustainability advice to business, local authorities and government. Yet in the last four years working in the West Midlands, I have never been anywhere that has such strong potential to lead the low carbon revolution, but such a lack of leadership, let alone collaborative endeavour.

Will we have the courage to stand for something, to aim for a fairer and greener economy and society, and the long struggle this will take, and not get distracted by the latest Government initiative or the media's quest for novelty?

The original founders of the Lunar Society would have to search hard to find their equivalents today. However I was encouraged recently by a competition we ran at Sustainability West Midlands to identify the top 50 green leaders in our region. The leaders are there, but often getting things done at community level, or within middle management in businesses, or chipping away within the public sector, but very few were leading from the top of their organisations.

The key question for the West Midlands is not whether we can achieve a low carbon economy, but whether motivated and diverse individuals within the middle to lower ranks of political and economic influence are going to be enough. Will they be able to clear away the incumbent powers of yesterday and make room for the next generation of leaders who dream dreams of our low carbon future, and have the drive, networks and plans to get us there?

In case this applies to you, what I have set out is a guide on how to make this low carbon revolution happen.

The good news is that a lot of the building blocks are in place waiting to be used. The West Midlands produced the UK's first low carbon regional economic strategy, 'Connecting to Success' in 2007. Unfortunately the collective leadership of the region failed to fully grasp the opportunity, and instead added 'low carbon' as another item to their list of 'soundbites'. However the rationale is still sound, and as a result we have one of the best evidence bases in the UK. If other regions and countries refer to the strategy and evidence as best practice, why shouldn't we? Our previous leaders in the West Midlands missed the opportunity, now it's your chance.

3.2 Rule 1: the low carbon economy is a whole economy approach

The first problem is that, despite its constant use, people often find the term 'low carbon economy' confusing or poorly defined. The best way to address this is use the definition set out in 'Connecting to Success.'

"A low carbon economy is one that produces goods and services of increasing value while reducing the associated greenhouse gases in their production and disposal"
(Connecting to Success)

Therefore a low carbon economy should be tackling two of the West Midlands sustainability challenges - economic productivity and carbon reduction.

"Low carbon goods, services and skills are related to achieving this outcome and can be specialist for example wind turbine manufacturer or micro-generation domestic installers, or changes within mainstream processes, for example a food manufacturer improving the efficiency of its logistics or production process, or plumbers learning how to also install solar heating." (Connecting to Success)

Thus a low carbon economy is a whole economy approach. Not just focused on specialist or favoured sectors, but every sector, process, product and skill.

Work by Sustainability West Midlands, the West Midland Regional Observatory and the City Region have produced detailed profiles for the fourteen unitary or county level local authorities. This has reinforced the need to take a whole economy approach by identifying that although sectors of the economy producing high rates of economic productivity such as finance face low exposure to carbon reduction legislation or energy prices, the sectors that are at risk account for around a third of employment. The good news is that in terms of economic opportunities these same sectors at risk face the biggest opportunities from more resource efficient processes, while diversifying into specialist environmental goods and services provides a useful, but smaller, contribution to the economy.

3.3 Rule 2: sell the low carbon economy, guided by sustainable development, as the 'silver bullet'

Care has to be taken here. Politicians are always looking for a solution that will solve all or many of their problems, but often find it is too complicated for simple answers and this leads to inaction.

The low carbon economy faces a number of challenges. It can still lead to economic exclusion, for example the pursuit of economic productivity may not lead to increased employment. The low carbon economy can still be subject to the impacts of the future such as a changing climate, global trade, an ageing population, or scarce future food and fuel sources.

The trick here is to have a clear drive and focus on a low carbon economy, but then use a broader set of sustainable development principles to identify how other economic, social and environmental benefits can be delivered, while being resilient to future drivers of change.

There are also more profound discussions around the nature of a sustainable economy to be aware of. For example Tim Jackson, from the Sustainable Development Commission, views the world economy as built on an engine of growth that feeds the appetite of people in Western countries for novelty, for ever more consumer goods that impress others but that can only be purchased by creating more debt. Even if we don't want the products, we have to buy them - or the economy crashes. As he puts it "We spend money we don't have on things we don't need to create impressions that won't last on people we don't care about".

However, to be a successful low carbon revolutionary, you need to sell the overwhelming benefits of the low carbon economy and how it can benefit the economy, health, people, the environment, and the future. Once enough people have delivered and realised the benefits, only then is it worth taking them to the post-graduate level around the issues of consumption and economic systems. Maybe the West Midlands should pool many of its fragmented thinkers, and create a 'Solar Society' and once again become an 'ideas powerhouse'. It would certainly save having to go on a train to London to be told what to think.

3.4 Rule 3: for the West Midlands the low carbon economy means building on our strengths - such as engineering, science, technology, transport, construction, and energy efficiency

The West Midlands has a series of unique characteristics. Because of our location at the heart of the transport network, lack of offshore renewable opportunities, limited deployment opportunities for wind power, and the largest concentration of manufacturing in the UK, we have to work harder than other regions to reduce our share of carbon. Also apart from the lack of coast we have a diverse range of economic geography from cities to remote rural villages; therefore solutions developed here can work in most parts of the UK. Finally we have a strong university and research base exporting graduates to the rest of the county. This is recognised in how 'Connecting to Success' interprets the low carbon economy for the West Midlands.

"In the West Midlands a low carbon economy means an economy that will underpin a prosperous and thriving region through capturing the economic benefits of increased efficiency whilst reducing direct carbon emissions and using the region's strengths in engineering, science and technology to deliver low carbon solutions to national and international markets

For business, this means fully capturing the opportunities for both existing industries and new enterprises to ensure the West Midlands region secures a reputation for profitable low carbon enterprise.

For people, this means up-skilling to secure the benefits from new employment opportunities emerging from a low carbon economy, along with behaviour change, to enhance quality of life.

For place, this means creating the conditions for growth by optimising transport networks and developing a low carbon built environment through energy efficiency and renewable resource use." (Connecting to Success)

Around 70 percent of all low carbon automotive research and development in the UK occurs within the West Midlands and this has been recognised by the 'brand status' of a low carbon economic area for advanced automotive engineering. However at the same time the region is leading the way in areas such as biomass, hydrogen, energy efficient retrofit, and lean manufacturing and design.

3.5 Rule 4: be clear on the measures of low carbon economy success

Don't be misled by targets for 2050 or 2080 which are an excuse to do nothing, stay focused on 2020. In terms of indicators of success focus on three:

- Improve economic productivity by 30 percent through increased resource efficiency, innovation, business creation, and social enterprises tackling long-term unemployment.

- Reduce greenhouse gas emissions by 30 percent through decreasing direct emissions within the region, reductions through the supply chain, and the deployment and export of solutions.
- Reduce the healthy life expectancy gap from 10 to 6 years between the best and worst performing areas within the region. Health inequality acts as a good proxy for the overall impact of social, economic, and environmental factors on individuals and communities.

There are also sets of more detailed indicators, such as which sectors of the economy should retain employment or grow if they adapt successfully to a low carbon economy.

3.6 Rule 5: make success look desirable and attractive

Even if you have defined a low carbon economy, kept it simple, sold the benefits, built on the existing strengths of the region, and set measures of success - it will not be enough. You need to be able to help people imagine and 'buy into' a desirable future that we would all want to live in out of aspiration rather than need.

Sustainability West Midlands worked with Forum for the Future to take all the work from 'Connecting to Success' and paint a desirable but attainable picture of the West Midlands in 10 years time. 'A low carbon vision for the West Midlands in 2020' has helped guide much of our work and stimulated debate, with many organisations using it to inform their future plans. For example Coventry is using it in a process to begin to shape their plans for their city. Some of it is already out of date, such as congestion charging for Birmingham, while other ideas, such as the vertical farms, are being developed by East End foods.

Do build on this low carbon vision to help create a dream and vision of what we could have. An example of what it could mean for a particular age group is described below:

"Pete, aged 20, reckons it's pretty impressive that he owns his own place when he's only 20. He got a bargain, buying in one of the new affordable carbon neutral developments. His girlfriend Josie is also ecstatic about them having their own pad. Already she's planning how to design their next 'extension' - their home is part of a modular housing set-up, where the uniform shape of all the housing 'modules' mean you can adjust for size by adding on a extra module or room when the need arises. Before looking around, they were a little unsure about the set up, but despite the uniformity in design, the interiors are so different you don't really think about it.

The energy and waste facilities are designed to be far more efficient per person than in a typical intensive single person household, and given that a third of the population now lives alone this amount to some substantial savings. The whole development is centred around a courtyard, which includes a shared community allotment and a mini-playground as a lot of other couples in the development have young kids. Kids aren't on Pete's mind right at the moment, though. He's focusing on his career. He's currently in the first year of a two-year intensive diploma at Aston University in low carbon retrofitting, and learning all the different aspects of low carbon adjustments in buildings - from plumbing to electrical. In this second year he'll be able to choose whether to specialise in public buildings or private homes. His brother did a similar course four years back and is now making a great living at a company based in Solihull, so Pete's hoping for a bit of advice when it comes to interviews." (A low carbon vision for the West Midlands in 2020)

It is worth noting that all the technology and training mentioned in the above extract is currently available now, just not on the scale described.

3.7 Rule 6: identify the steps to achieve the vision - start with the first step

The final rule is to set out a series of steps to help achieve the vision. The first step must be where people are at in terms of their understanding.

Sustainability West Midlands has found this out through the work we have been doing with local authority leaders around the low carbon economy. We tried a typical business approach of identifying what the competition (such as Manchester City Region) was doing around the agenda, where the West Midlands was, and what the key steps were where, working together, we could catch up. It didn't work, because we had started too far forward for many of the West Midlands leaders who wanted to know more about the business benefits to their authorities in particular areas, before advancing together. We have addressed this now, but it is worth bearing in mind as you seek to help move our collective leadership forward.

We have also commissioned work on which key priorities and steps should be focused on to help achieve the low carbon vision. The selection criteria included identifying what regional or sub-regional action would add value beyond national action: such as delivering the most cost effective economic, carbon, and other social and environmental benefits. We are currently supporting partners to deliver or develop these priorities. They include:

- Development and coordination of initiatives to stimulate low carbon jobs and skills
- Retrofitting existing housing stock and buildings
- Public sector sustainable procurement

- Improved low carbon transport choices such as active travel or flexible working
- Infrastructure for diverting commercial and industrial waste from landfill
- Improvement of environmental infrastructure, such as parks, rivers, and trees, to increase resilience to climate change, job creation, and quality of life and health outcomes.

There is also a strong theme of cultural or behaviour change running through most of these priorities in terms of low cost and high impact actions. The research that underpins this work will be published in the autumn 2010.

And what is our first step? To help tell the new Local Enterprise Partnerships (LEPs) that they are inheriting the best low carbon economy evidence base in the UK. Now use it to help us create a fairer and greener economy.

3.8 Final words

We have the emerging talent and leaders, we have the best low carbon evidence base in the UK, we have a concept of 'the low carbon economy' that if guided by broader sustainability principals will act as solution for many issues, and we have a vision, priorities and steps on how to get there.

The question is will our existing leaders in the West Midlands join the revolution, or get out of the way and let someone that can. Like all revolutions this is tough so don't go it alone, rotate your time on the frontline with others to share the sacrifices and keep your morale high, and begin to raise up the next generation of revolutionaries to replace us.

In its birthplace, the 300 year high carbon revolution is coming to an end.

Long live the low carbon revolution.

4 The low carbon economy: transformation is here and now

By [Darren Gardner](#)

4.1 Introduction

I used to think the low carbon economy was about solar panels and fitting them to your house, helping our manufacturing companies diversify into renewable energy markets or possibly about developing new environmental technologies. I used to even think it was about climate change too and saving the planet. I used too...

All these things are true, but so often “this” is actually about “that” and if we think that the low carbon agenda is simply about economic development, or saving the planet then we may have just missed the point. We may have just missed an open goal to completely turn “life” on its head and make a change forever. We may only see “this” when really we need to see “that”.

4.2 The high carbon economy

Until now I have never known a financial crisis or a recession. The words “credit crunch” never appeared in my vocabulary. Instead I started business life in 1996 working for Coca Cola and then for a FTSE 100 recruitment business in the middle of the dot com boom. The fees rolled in on an express gravy train and the good time parties followed.

Even the terrible events of September 11th didn’t have too much long term effect on the markets, credit flowed, and shops enjoyed my impulse purchases. I was time poor and cash rich and enjoyed all the finer things in life that your average hedonistic young man would enjoy.

I had become a product of my times - a consumer. I was no longer a human being with a soul but a “market segment” for advertisers to sell to and my American Express card begged to stay behind the bar for all to enjoy. I changed my cars quicker than my under pants and flew all around the world, mainly on holidays and sometimes on business.

I became more and more successful in work - promoted and the bonuses rolled in. Don't get me wrong I was never a city banker earning an obscene amount of cash but I did alright for somebody who was under 30 and not university educated. Sure there were some "down" times but they were short lived.

I lived for today, had no real concept of tomorrow, and only vaguely aware of my history. I was the "post modern" man...

And then one day I had enough. Enough of the rat race, enough of the money and what I had to do to get it, enough of the "stuff" because I had way too much of it anyway. Looking back the life I was leading was just not sustainable. The high carbon lifestyle I was living came with a price. A price that was not worth paying, not for me, not for my wife, not for this planet.

So I quit... and changed my job and stopped travelling 35,000 miles a year in the car and buying Starbucks and eating in posh restaurants. Instead I got a job working for my local city council initially helping the long term unemployed get a job or helping them set up their own business. I travelled to work on a bus and took my own sandwiches.

Then I got a job in the same department responsible for developing the low carbon economy. But at the time I hadn't really realised I was already connecting with the low carbon economy because after all it's something much deeper and much more significant than sticking solar panels on your roof.

4.3 The low carbon economy

Now if the High Carbon Economy has been about over consumption and living unsustainably then the Low Carbon Economy represents a massive opportunity to change the way we live.

People may disagree with me about the high carbon economy and our over consumption, but the facts are that the old systems are broken, and they cannot be fixed. Lily Allen in her song the "The fear" sings "I am a weapon of massive consumption. It's not my fault; it's the way I've been programmed to function". Lily Allen is right, our systems have taught us to over consume, to take what we want rather than what we need and as a result, we do not really give too much thought about who it affects and how. Our systems have to be completely reborn in the shadow of the old ways of life.

I mean, if you want proof on how messed up we've become you only need to look at the statistics on the number of people dying from over eating diseases compared to malnutrition.

Take our political system for example. The way we do politics has had to change, and it could be said that the people of Great Britain voted for a coalition government because we were completely unsatisfied with the way things were. The old way of politics has changed and we are in a new era whereby the political map will change forever.

Take also too our economic and financial models which are undergoing transformation. The old system allowed us to ramp up £30,000 of debt without too much of a blink but now we live in an age where the flow of credit is much restricted. A result of this “cutting back” in the economy is that people have re-evaluated their lives and perhaps spend less on “luxury” items than previously before. We are way more cautious than we ever were.

The above is just the start of the transformation in our society, and the development of the low carbon economy does not just bring about new jobs it takes us further down the line of living more sustainably and more justly.

If the high carbon economy was about getting, then the low carbon economy is about giving;

If the high carbon economy was about want, then the low carbon economy is about need;

If the high carbon economy was about “me”, then the low carbon economy is about “you”;

If the high carbon economy was about “petrol” then the low carbon economy is about “hydrogen”

If the high carbon economy was about injustice then the low carbon economy is about equity;

If the high carbon economy was about the wheels falling off, then the low carbon economy is about the restoration of all things, for the low carbon economy is about a better way. It is about hope...

4.4 Social enterprise

To bring about this change, the low carbon economy requires a new entrepreneur, and a new way of doing business. Social Enterprises have been around for ages but they've really only just started to become trendy.

I say new but we've been making money since time began in the private sector and kept the riches generally for ourselves or for our shareholders. We managed contracts on a profit and loss basis. Yet in the public and third sector this is less common. The private sector it could be said lack “compassion” for the poor (debatable) and the public sector don't have a clue about running a business or contracting profitably (also debatable).

Combine the two and we might just be onto something and that is why in Coventry we have combined with a major energy company, our local universities, the chamber of commerce and a whole host of small and medium businesses to form a "Low Carbon Social Enterprise". This social enterprise will start with investment from both the public and private sector, and will sit as an independent private limited company managing a range of "low carbon contracts" such as a whole house retrofit of social housing in the city. It is not restricted to renewable energy contracts for it can manage any low carbon contract, for example providing locally grown food to local schools.

4.5 The model

There are 4 main elements to the model:

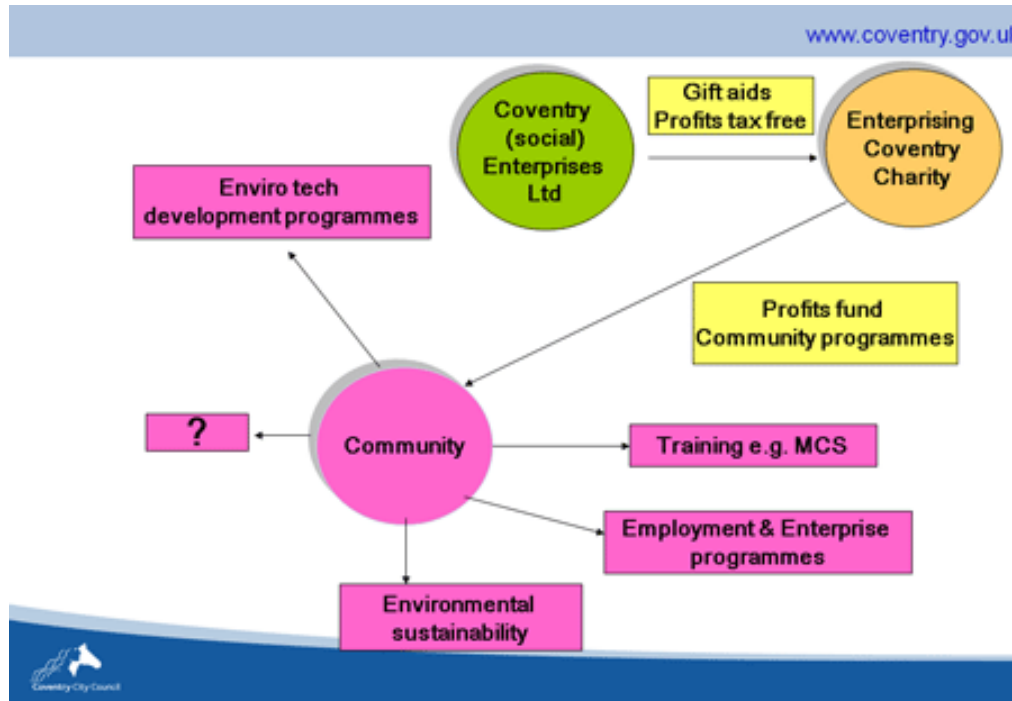
1. **The Consortium** is a group of public and private organisations which can be added to at any time from within the sub-region. Consortium members are bound by a memorandum of understanding that any "low carbon" contracts will be given to the social enterprise in the case of a private sector contract, or will be asked to tender for public sector contracts.
2. **The Social Enterprise** is a private limited company with a board of directors made up of core members from the consortium. Each member has equal share and in its articles of agreement the company agree to use 100% of operating profits to fund low carbon projects around employment, enterprise, applied research and education.

On receipt of a contract the social enterprise will become responsible for delivering a project, for example retrofit of social houses. It will become the contract holder and project manager but will use a range of local sub contractors to deliver the work.

3. **The supply chain** - The social enterprise leverages existing contracts down to local supply chains encouraging growth in the local low carbon economy, creating jobs, helping companies diversify and encouraging start ups. Furthermore the social enterprise will provide a range of business support to the supply chain to help them deliver against the contract and win other projects throughout the UK.

The social enterprise will retain a margin out of the contracts, and all profits will be covenanted (gift aid) into a low carbon charity which will act as a grant giving body.

- The charity will then partner with local third sector community organisations, businesses and education establishments to award grants for low carbon enterprise, employment, applied research and education. For example this body could fund other businesses to gain their Microgeneration Certification Scheme (MCS) accreditation, or support local universities with applied research and the development of new environmental technologies.



So the social enterprise is run as a lean, efficient, profit making business but instead of pocketing the cash, it gives it away.

The low carbon economy is an upside down economy where it is better to give than receive. The more contracts the consortium give to the enterprise, the more the enterprise gives work to local supply chains, the more work the supply chain gets the more it can employ people, the more contracts that are fulfilled the more the community will receive and so on. The cycle of giving will continue and continue and continue and the growing gap between the rich and the poor, between those who have and those who have not will ultimately decrease.

4.6 Final thoughts

I'm really excited about all this. I'm intentional about leveraging venture capital and Community Energy Saving Programme (CESP) money into the city to fund "low carbon contracts". This is making the retrofit of commercial properties and social houses possible and so discussions are already underway with our universities and registered social landlords on how we can best use this money.

For example could we use this money and target those residents who have the worst thermal leakage and are the worst affected by fuel poverty? Could we then ask a social enterprise to manage this multi million pound contract which would have a massive effect on local supply chains? Could we then fund, out of the profits, some really innovative research or help a load of local people with some training and ask our local supply chain to offer apprenticeships?

What's brilliant about this model is that it connects public and the private sector together. It connects applied research with real life business; it connects communities with economic development. It is literally the glue that holds things, people and systems together.

The Low Carbon Social Enterprise will be soft launched on the 2nd December. There's still lots of work to do around legalities, company formation, business planning, partnership building and so on, but we will do it. We have a small window of opportunity to change everything, to bring about transformation in our society and in our economy.

Imagine the future of our cities whereby we give more than we receive, imagine our society where we take what we need rather than what we want. Imagine an economy that is prosperous yet just and fair. Could it be that this social enterprise is the start of it all, a chain reaction bringing hope and justice to all?

Could it be that the low carbon economy is actually about "this" rather than "that" ...

Who knows? But I'll give it my best shot...

The views expressed in this article are not necessarily Coventry City Council Policy.

5 Into a low carbon future

By [John O'Connor](#)

5.1 Introduction

What would a successful low carbon economy look like and how should the West Midlands transform its economy to meet that vision? The West Midlands' Low Carbon vision is to be at the heart of low carbon technological product development and manufacturing, with the required infrastructure to support it!

This article focuses on low carbon vehicles as part of a low carbon future, rather than the wider low carbon economy.

5.2 Should our main priority be to increase economic growth rates or to ensure that any future growth is environmentally sustainable?

As the 'right' low carbon solution is not defined at present in terms of consumer usage patterns, charging infrastructure and automotive technology, the time is not yet right to prioritise economic growth.

At present it will be more prudent to concentrate on successfully completing the pilot schemes in-place such as the Coventry and Birmingham Low Emission Vehicle Demonstrator (CABLED) and 'Plugged-in-places'.

5.3 Can we rely on culture change, consumer demand and market forces to deliver a low carbon economy or is regulation needed?

There is certainly evidence that more consumers are taking a growing interest in driving low carbon vehicles.

There have also been recent announcements from major automotive manufacturers such as Nissan, General Motors and Honda on their firm plans for introducing low carbon vehicles (both pure electric and hybrid) for early adopter consumer markets in Japan and areas of the US, followed by Europe. But these are still relatively small scale production activities.

The key to achieving a 'mass-market' demand for low carbon vehicles still lies in offering vehicles to the consumer with no compromises versus current market leaders and at a price that is affordable. So far these economics are not present.

As such I still believe that a level of government incentive and possible legislation will be advantageous. Unfortunately the current global financial situation makes the availability of incentives less likely and recently the UK government has confirmed that the automotive industry needs to stand on its own feet.

5.4 To what extent can we rely on technological development to ensure that we are able to meet our environmental aspirations?

To meet our environmental aspirations we need to ensure that the low carbon roadmap developed by the New Automotive Innovation Growth Team (NAIGT) which outlines that a multi-technology strategy is required to meet proposed European legislation on CO₂ reduction.

The proposed roadmap indicates that continued development in current powertrain technology and vehicle weight reduction on conventional mass market technologies will be required alongside growing development and take-up of low carbon vehicles.

The roadmap predicts that we will not see significant volume increase in low carbon vehicles until approx 2020 when between five and ten percent of all vehicles will be either Electric or Hybrid.

The population as a whole will also have to contribute to achieving environmental aspirations by evaluating their use of CO₂. For example driving patterns will have to change and more public transport will be required.

5.5 What are the long-term consequences for the regional economy of issues such as climate change and peak oil, and what should we do in the short-term to respond?

Climate change and Peak oil are issues that will accelerate the way we live, work and plan for the future. We are already seeing changes in power generation strategy and low carbon initiatives such as the one from the Office for Low Emission Vehicles to look at low carbon in a 'well to wheel' process, with inclusion of companies that cover the whole fuel extraction process to vehicles on the road.

As such the West Midlands will have to consider changes in its power usage, use of public transport and implementation of a low carbon charging infrastructure. This will need to include a thorough review and development of an appropriate 'cost / charging' strategy to encourage adoption of public transport.

In the short-term I believe that a low carbon public transport strategy will need to be developed in a way that interacts with both short and long distance personal transport. The West Midlands can also champion the wider availability of low carbon vehicle fuels such as electric, liquefied petroleum gas (LPG) and Hydrogen. The region can also start to convert its substantial fleet of vehicles, buses and other transport into more low carbon friendly vehicles.

In terms of the substantial amount of industry in the West Midlands, aggressive targets need to be set for the reduction of CO₂ with possible incentives or investment to help facilitate the change.

5.6 What distinctive approaches could the West Midlands take which would set it apart?

The West Midlands has the benefit of a number of leading companies in low carbon development in a cross section of industries being located within its boundaries. It needs to forge a cohesive cross-industry strategy that looks at all elements of a low carbon environment such as infrastructure, public transport and automotive technology that will set the West Midlands apart as the leader in low carbon implementation and technology.

Part of this strategy could be the creation of a low carbon centre or Borough which is used to pilot low carbon living.

In addition the West Midlands hosts automotive companies such as Jaguar, Tata, Ricardo and MIRA Ltd. amongst others, giving it the expertise to make the area the leading centre of automotive low carbon technology development.

The Low Carbon Vehicle Technology project at Warwick Manufacturing Group is an excellent example of this type of initiative. It is critical that the West Midlands identifies the means to continue this advanced technology development where the best skills from both Industry and Academia work together to identify the most appropriate and cost effective low carbon technologies in order to speed-up the adoption of mass market vehicles.

5.7 What might prevent the region taking advantage of a low carbon future and what can be done to overcome these barriers?

The major barriers to the West Midlands taking advantage of the Low Carbon Economy will be the availability of continual funding and the scarce qualified resource required to continue the research and development work required.

Due to the funding constraints being imposed by the current government, I believe that the West Midlands must take the lead in forging partnerships between industry and available budgets such as the European Regional Development Fund to ensure that research and development continues at a steady and constant pace.

It has become very difficult to find the research and development engineers of the required quality and quantity to support the current levels required, and this will become a greater problem as demand for these resources increases.

I believe that the West Midlands needs to seriously consider the establishment of a low carbon centre of excellence which includes in its remit the establishment of a centre that can attract the best quality researchers and engineers from across the globe to support the low carbon economy.

Again this is an area where both Industry and Academia can collaborate successfully.

5.8 What changes in people's working and social lives will be implied by a low carbon economy and what can be done to ensure that everyone benefits?

I believe that a low carbon economy can change people's lives in a number of ways. Firstly if a sound strategy can be developed it will offer employment opportunities in a number of industries that will be taking the lead in developing and building the low carbon infrastructure and products.

In addition the way that people live their lives will need to change if we are to enjoy a low carbon economy in the future. Our views on personal transport and how we choose to be mobile will need to include a balance between public and personal transport.

A low carbon economy with lower emission output will also result in some health benefits if coupled with greater use of public transport and increased exercise through walking.

6 Leadership to deliver the West Midlands low carbon future

By [Tony McNally](#) and [Krystyna Tarkowski](#)

“Embracing a low carbon economy will be as momentous as the previous industrial revolution, as the shift from coal to oil and from gas to electric light. It has the potential to give us the competitive edge in the new global economy. The scale of the challenge is extraordinary. We will need to reinvent in the way in which we live our lives, the way our world works”.

Charles Hendry, Minister of state for Energy and Climate Change

6.1 The challenge

The West Midlands has the capacity to engage with and emulate the best of its counterparts in Europe, to mobilise the forces and resources for the paradigm shift to a low carbon clean technology future.

But emergence from a global economic recession combined with popular scepticism and uncertainty on the science of climate change presents us with a number of difficulties. We have a new government in the UK, focussed on public sector cuts to tackle the deficit and prioritising a return to ‘business as usual’. A range of major low carbon projects have been cancelled, such as Building Schools for the Future and low carbon housing.

Public sector bodies supporting the low carbon transition have either been abolished, (for example Advantage West Midlands), or face heavy budget cuts (including staff losses), such as the Department of Energy and Climate Change (DECC), Energy Savings Trust and local authorities.

6.2 Embracing the low carbon transition

In spite of this, the first requirement to make the low carbon transition is galvanising a committed coherent leadership that combines public, private and third sector as a driving force. Rather than more reports and statistics, we need a greater focus on implementation, going beyond a competition for the largest slice of a shrinking cake.

Secondly, there are a range of very successful projects that require continued support and promotion, particularly Birmingham City Centre decentralised energy schemes. Every city, town and village in the region can adapt this model aimed at reducing CO2 emissions, energy bills and introducing innovative and clean technologies. Cllr. Paul Tilsley, Deputy Leader, Birmingham City Council and Sandy Taylor, Head of the Sustainability and Climate Change Office, could host site visits perhaps inviting other leaders, councillors as well as their respective energy/climate change and other staff.

Showcasing successful delivered projects should include major players like British Gas New Energy, E.ON Sustainable Energy, the National Grid, Worcester Bosch, CISCO, IBM and BT in order to highlight how they can help deliver low carbon smart buildings and communities. It could also engage our universities and colleges, staff and students, including the application to their own campuses as many are now doing. The current introduction of the feed in tariff (for renewable electricity) and renewable heat tariff next year offer major new incentives for all involved. The bigger the scale, the more carbon reduction and financial benefit will be realised. While encouraging solar panels on homes of the rich and those committed to a low carbon lifestyle with exemplar value, the main challenge is large scale retrofitting to deliver the urgency of our climate change 2020/2050 objectives.

Thirdly, city and community scale decentralised energy systems can also stimulate new innovative low carbon businesses, jobs, skills, research and development. We need the vision and financial facts in the Stern report to mobilise the capital resources to invest in the low carbon economy. Up to now the financial community have ignored the low carbon agenda, preferring to compete in the international casino regime that caused the recent economic crisis.

Billions of pounds are paid from the region for energy that could be reinvested through a combination of behavioural change, resource efficiencies in energy, water, transport and waste together with smart and renewable technologies to stimulate the low carbon transition. The green new deal offers the prospect of working our way to recovery by also producing low carbon technologies and not just importing them. This requires long term investment aligned to European, national and regional commitments.

6.3 Clear opportunities

Central to the transformation, we need a systemic low carbon retrofit of all our building stock which accounts for nearly 50 percent of emissions. This can reduce our increasing imports of oil, gas and coal, which result in rising bills.

Retrofitting and decentralising energy (including electricity and heat incentives) can create jobs and new business in the building sector, which has been adversely affected by the recession and budget cuts. There is a potential new green army of white van men or women requiring supportive training that could deliver this objective rather than become dole queue victims.

Furthermore let's integrate this with the 'Big Society' government commitment and seek to stimulate sustainable communities that move towards generating their own energy and zero waste. They could also focus on local growing as advocated by the Transition Towns Movement, the Women's Institute, the National Trust and vision presented by HRH Prince Charles in last year's BBC Dimbleby Lecture. Every school, college, university and hospital could be a leading practitioner and focal point for this, working together with local councils in green deal partnership of civil society.

Friends of the Earth's principle of 'think globally and act locally' captures both the scale of the challenge with the empowering solution. But there is the imperative for global scale solutions to avert the two degrees temperature rise by 2020, which would be a tipping point for climate change. This is what the United Nations Summit in Copenhagen failed to agree in principle and avoided taking the necessary subsequent action to deliver.

The Summit could have spent the time focusing on making the European and North Africa DESERTEC Project a success and a model for other multi-national initiatives. This projects a road map to generate 100 percent of electricity from renewable sources by 2050. It projects a super renewable grid linking the best sites for appropriate renewable energy technology from Iceland's geothermal springs, European off shore wind farms to North African and Middle East solar energy.

The investment, which is of the order presented in the Stern review, could stimulate a massive scaling up of the innovation and production of the renewable industry. A smart grid would balance the fluctuation of supply frequency while facilitating localised generation. In any case, much investment would be needed, as the current UK and wider European power grid is ageing and inadequate, requiring reconfiguring to meet more diverse generation and demand.

(www.pwc.co.uk/eng/publications/100_percent_renewable_electricity.html)

"This report gives a comprehensive outlook towards an electricity system for Europe and North Africa based completely on renewable energy in 2050. Its particular value is pointing out that this will be the result of an evolutionary development mainly of the economical, legal and regulatory framework and does not require fundamental technological breakthroughs. Most of the required technical components are available in principal already today. This is a sound basis for the roadmap."

*Jochen Kreusel, Head of Marketing and Sales Power Technologies, ABB Germany
Chairman of the Power Engineering Society of Germany.*

6.4 Leadership and partnership

The importance of leadership through partnership building of a skilled low carbon economy in the West Midlands should not be forgotten. To facilitate low carbon skill formation a partnership approach should involve three important aspects of partnering in the following areas:

- Labour Market Intelligence (LMI)
- Continuous Professional Development (CPD)
- Return on Investment (ROI) from training (i.e. demonstrating to employers that training adds value to their bottom line)

The impact of how workforce will be trained and how employers make investment decisions in skill development is being highlighted in the CBI Report 'The shape of business in the next 10 years' (November 2009: p.20):

'New Forms of partnership and collaboration, and new contractual relationships between employees, are already emerging and will become more extensive. Combined with technology change and new approaches to training, this will strengthen UK competitiveness in flexible working even further'.

Access to relevant and up to date Labour Market Intelligence in low carbon skills needs are increasingly being discussed and implemented for shared use by interested parties such as employers, students and staff. One example is the new National Guidance Research Forum (NGRF) webpage run from the Institute of Employment Research at the University of Warwick. The revamped web-page will be launched in mid October 2010 and will involve low carbon specific sectors and a low carbon specific LMI web-page with key areas of discussion such as 'retrofitting', 'low carbon vehicles', 'employer views on low carbon skills', definitions, discussions and West Midlands employer case studies. Access is free of charge and it will be open to everyone interested, including Further Education (FE) Colleges, students and careers agencies, to highlight skill needs and promote the opportunities of a low carbon economy.

While the West Midlands region is very strong in the fundamentals of a low carbon economy, strong leadership will decide its future through its ability to utilise partnership thinking between employers, training providers (including private and public) as well as governmental bodies.

Currently, the West Midlands region offers some excellent access to skill development in low carbon areas but this represents a small fraction of what is required. All Further Education and Higher Education providers should make greater effort to engage with employers and their community, with an aim to offer a wider range of low carbon skills. As there is little public funding, the development of employer led training and Continuous Professional Development (CPD) is crucial.

Collaborative initiatives with employers and training providers allow clear focus on demand led training which is commercially relevant as well as directly linked to industrial skill needs.

Without any doubt new low carbon industries will require new skills or at least some form of skill updating. The HM Government report *New Industry, New Jobs* (April 2009) highlights 'a new activism' led by responding to challenges imposed by new industries and new jobs. While the government report highlights the challenges, we should not forget about the success stories that already exist within the West Midlands region. Successes of responding to low carbon skill needs involve focused training provision at Coventry University, Birmingham University, University of Warwick, Warwickshire College, City College Coventry and private training providers to name a few.

The next step for the West Midlands low carbon economy challenge is to take into consideration current successes of partnership working with a view to develop new training. Equally, it is of importance to open access to the above educational opportunities and training facilities to FE Colleges, employers and communities to create a low carbon capability and to inspire, manage and lead a skill transfer to a low carbon economy.

6.5 An Invitation

The Innovation & Investment for a Low Carbon Future Conference will be held on December 3rd 2010 at the NEC.

The conference will feature the DESERTEC project and will also deliver Continuous Professional Development workshops and low carbon skill updating.

For the programme or register contact Tony McNally (tony@climate-change-solutions.co.uk) Managing Director of Climate Change Solutions (www.climate-change-solutions.co.uk) or Krystyna Tarkowski (Krystyna.tarkowski@coventry.ac.uk) Coordinator of Coventry & Warwickshire Lifelong learning network (www.cwlln.org).

7 About the authors

7.1 Roger Levett

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Roger Levett is a partner in Levett-Therivel Sustainability Consultants. Previously he was a Director of CAG Consultants, promoted green business at Scottish Enterprise, and developed energy efficiency policy in the former Department of Energy.

Roger played a leading role in Local Agenda 21 and local government environmental management through the 1990s, and in public sector sustainability policy and appraisal in the 2000s. He is currently completing Integrated Impact Assessments of three London Mayoral strategies and advising the United Nations Environmental Programme on the fifth Global Environmental Outlook. His publications include *A Better Choice of Choice*, Fabian Society, 2003.



7.2 Simon Slater

Executive Director, [Sustainability West Midlands](#)

Simon was previously Head of Sustainable Development at Advantage West Midlands, and was at the UK's leading sustainable development charity Forum for the Future.

Simon chairs the BeBirmingham Carbon Reduction Partnership, the strategic partnership for Birmingham City Council and partners. He is a Board member of the Sustainable Housing Action Partnership, which promotes good practice in affordable new and retrofit green housing. He is also a Board member of the Springfield Project, a community regeneration project promoting joint working between Muslim, Christian, and other faiths, in inner city Birmingham.



7.3 Darren Gardner

www.enviro-techno.tumblr.com

Darren is currently an Environmental Technologies Sector Advisor for Coventry City Council, Chair of the Coventry and Warwickshire Environmental (technologies) forum, a writer, and regularly blogs at enviro-techno.tumblr.com. He is a football fan, likes growing his own veg and spending time with his family.



For more information on the low carbon social enterprise contact Darren Gardner on 0785 227 6336 / 02476 831279, email darren.gardner@coventry.gov.uk or tweet @enviro_techno.

The views expressed are not necessarily Coventry City Council policy.

7.4 John O'Connor

[Low Carbon Vehicle Technology Project](#), Project Director, Warwick Manufacturing Group

Initial career was spent at Ford Motor Company in a number of roles in both Europe and South America including product planning, product launch and manager of the Global Testing Operations. Career at Ford culminated in being the Chief Programme Engineer for the Fiesta product-line that was launched at Cologne in 2002.



After leaving Ford John's career has primarily been in the Rail Transportation Industry, UK MD for Bombardier Signalling and Senior Vice President for Projects at ALSTOM Transport, and was more recently Operations Director at JCB Excavators in Uttoxeter. John joined the Low Carbon Vehicle technology Project in September 2009 and has led the project through the funding approval and startup process.

7.5 Tony McNally

Managing Director, [Climate Change Solutions Ltd.](#)

Over 25 years' experience on organising conferences, exhibitions, seminars, training and other projects on environmental sustainability, with increasing focus on climate change. This has been engaging business, public sector and NGOs from a range of UK cities and regions. This includes:

- Pledge to the Planet major campaign, featured at the UN earth Summit, Rio, 1992.
- Global Future, UN 50th Anniversary environmental conference and exhibition, London 1995.
- The Annual Hydrogen and Fuel Cells Conference, Exhibition and European partnering since 2004.
- Global City in Lyon, 2006.
- Earth from the Air, international exhibition Founding Climate Change Solutions Ltd in 2003.
- Leading a partnership of business and public sector organisations to establish a Sustainable Living Centre.



7.6 Krystyna Tarkowski

Project Manager, [Coventry & Warwickshire Lifelong Learning Network](#)

Krystyna has been working in collaboration with Coventry and Warwickshire universities, FE Colleges and employers with an aim to coordinate training which is relevant to industry demand. She works across all sectors although her current interest and energy goes to all training and development related to future industries and the low carbon economy.

Krystyna also coordinates continuous professional development opportunities for FE Colleges with an aim to upskill their staff in a low carbon related area of their specialisms. Furthermore, she collaborates with partners to develop labour market intelligence related to low carbon construction, low carbon vehicles and leadership of low carbon strategies.

Krystyna holds a Master degree from Warwick Business School and a PRINCE2 accreditation in project management. She is a Member of the Chartered Management Institute.



Full document information

Title	Fit for the Future: What's your vision of a low carbon future?
Date created	2010-10-14
Type	Report
Description	A collection of articles exploring the opportunities to be provided to the West Midlands by a low carbon future.
Creator	West Midlands Regional Observatory
Publisher	West Midlands Regional Observatory Level 3, Millennium Point Curzon Street Birmingham B4 7XG Telephone: 0121 202 3250 Fax: 0121 202 3240 Email: info@wmro.org Website: www.wmro.org
Contributor	Roger Levett, Simon Slater, Darren Gardner, John O'Connor, Tony McNally and Krystyna Tarkowski
Rights	Copyright rests with the respective authors of each chapter. This Fit for the Future project is licensed under the Open Government Licence . When you use this information under the Open Government Licence, please include the following attribution: <i>Author's name, Fit for the Future, published by the West Midlands Regional Observatory, 2010, licensed under the Open Government Licence: http://reference.data.gov.uk/id/open-government-licence</i>
Document contact	Oliver Nicholls, Head of Communications and Networking Communications Team West Midlands Regional Observatory Tel: 0121 202 3244 Email: oliver.nicholls@wmro.org
Format	PDF/Internet
Relation	This report is also available as a fully-commentable website: http://www.wmro.org/fitforthefuture2/
Subject category	Economics and finance; Sustainable development
Subject keywords	low carbon, opportunities, low carbon vehicles, leadership, West Midlands, emissions, employment, business sectors, growth, economic development, sustainable development
Date available	2010-10-14
Cost	Free
Access restrictions	None

Language	English
Identifier URL	http://bit.ly/fitforthefuture2
Status	Version 1.0 for publication



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