

# #WM2041

Actions to meet the climate crisis with  
inclusivity, prosperity and fairness



West Midlands  
Combined Authority

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# This needs all of us: a call to action



**Councillor Ian Courts**

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Human beings learn through storytelling. There are some stories about the West Midlands that we know well, and share with pride. We changed the world through vision, innovation, and industry. We remade places by using strong local government. We became a region of work, trade, and play, connected in thousands of ways to the world.

Now, we are writing a new volume of the West Midlands story, with new authors, in a new time – but we need these familiar themes to carry through. Once again, we are marshalling our talents and capacity for innovation to meet a global challenge. Local government leadership of place matters more than ever, and we are going to use that leadership to build a movement, from where we are, to where we would like to be. Our strengths in engineering combined with technical innovation will give us an edge that we can sell across the planet. Indeed, we are connected to the world in ways that Boulton and Watt could never have imagined, and we will use those connections to share, learn and trade.

The framework outlined in this paper is the storyboard: it outlines why we need to address climate breakdown and to adapt to climate change the opportunity it provides to create a highly productive, low carbon economy; it reflects on what we might need to do (and when we need to do it) it suggests who needs to take a lead, and how it must be done if we are do it in

a way which is thoughtful and inclusive. It also suggests – based on the estimates in the July 2019 carbon budget – that an investment programme substantial enough to meet this challenge will be in the order of **£40bn** over **21 years** (2020-2041).

The actions we propose are things that individuals, communities, businesses and government at all levels can lead. They include:

1. **Active travel and cleaner transport**, including keep your car at home schemes to reduce emissions, reduce unnecessary travel and encourage low carbon connectivity. We will also be working with the 5G Team to support infrastructure for digital connectivity to reduce the need to travel.
2. Infrastructure to support the transition to **electric charging** at in the region and to put our region at the forefront of change in one of its anchor sectors. This would be complemented by the UK Battery Industrialisation Centre and ongoing discussions about creating the UK's first Gigafactory in the region.
3. Transition to more **eco-friendly homes**, proposing the development of a West Midlands 'new green deal' that learns from history and leverages devolution. Our proposed actions on this focus on both the financing of retrofit, as well the introduction

of a zero carbon standard for new builds.

4. Creating breathable places, including big ambitions for **tree planting** programme with one tree for each resident, as well as building on Wildlife Ways and advancing plans to establish a West Midlands ‘national park’.
5. A number of **behaviour change** campaigns at-scale, including on single-use plastics, energy use, waste and cycling, walking and active travel. The WMCA has already committed to eliminating single-use plastics from all activities by 2020, and we will work to see how other organisations and individuals across the region can make similar commitments.
6. Investment to support **re-skilling and employment** as a result of sector transitions – including further work to scope a climate re-skilling workstream over time. An example of this is encouraging FE colleges, universities and other training providers to incentivise transition into careers linked with climate adaptation and the natural environment.
7. Incentives for business, including ‘**clean growth challenges**’ which boost the R&D capacity and pace of technological innovation of the region in support of its Industrial Strategy.
8. Commitments we can make as ‘**anchor institutions**’ (within the public sector) to use our size, scale, procurement practice and employers’ policies. One area we are keen to explore is securing the means to help all places in the region to shift to LED street lighting.
9. Consideration of **new fiscal mechanisms** – such as workplace levies, carbon accounting and Green Bonds – to incentivise clean growth and make the devolution case to Government.
10. Pursuing **energy devolution** so that we can combine a shift to sustainable energy with a medium-term reduction in fuel poverty. We will work closely with Energy Capital around the need for devolution of resources and responsibilities to support this, for example securing devolution of Energy Company Obligation funding to the WMCA.

These are just some of the actions that will be needed to make a success of a society and system-wide change in the way we live, connect and work. But we are not starting from scratch: from our efforts to secure creating the UK’s first Gigafactory in the region, and our commitment to driving investment into charging infrastructure for electric vehicles, through to our community-level Better Streets funds and pledge to eliminate single-use plastics (some of these existing commitments can be found in Appendix 1). Likewise, local authority and community partners have already taken many steps on the journey to a climate-resilient society.

Nonetheless, there is a huge amount to do, and we understand the scale of the change required. We know that this is a load that needs to be shared, from people in their communities, to public services and our business community. It is in partnership that we will come up with the solutions that will best serve our region. So please: think about the challenges, the proposals to address them, and join us in writing a story that future generations will live.

# Navigating the action plan

1. **These ideas are not set in stone:** the WMCA Climate Action Plan is a green paper. It is making a set of proposals, and using those as a basis for iteration and dialogue. Indeed, it is impossible to embark on changes of this magnitude without that dialogue. Some of the proposals will be existing policies and investments, but most of them will be ideas that the region will need to develop. If you want more, or something different, now is the time to ask for it.

2. **WMCA is not leading everything:** this is an attempt to outline what is required, at what level, and by when. It is an exercise in trying to lay out a collective challenge for the people and places of this region. The Mayoral WMCA is answerable to local people and the local authorities that comprise it, and a great deal of the sub-national legwork will be led by neighbourhoods, towns, and cities. Central Government also has an important part to play: whether it is in regulation, devolving its power, or investing money. As such, this plan will try to identify what is necessary and ‘who leads’.

3. **Pace matters:** in averting climate breakdown, the rule of thumb is “the earlier the better”. It is why WMCA Board plans to reach zero carbon 21 years into its 80 year carbon budget – the more we can do, the less climate change we lock in (and therefore have to adapt to). As such, the paper will estimate timescales for the suggested actions:

- those which will need to be done within five years,
- those which will need to be done between five and fifteen years,
- those which will need to be done in the final five years leading up to 2041.

4. **Find yourself, your place, and your organisation:** everyone will have a role to play in getting this region to become zero carbon by 2041. Anyone who reads this plan should be able to see where their home, neighbourhood, town, city or place of work fits. If that isn’t clear – get in touch.

## More action, faster

### Why we need to change

Summer 2019 saw two significant events in the West Midlands. In June, at the WMCA Annual General Meeting, the Board declared a climate emergency – inspired by the Youth Strike 4 Climate movement, who told the Board that they expected more from the region’s leadership.

In July, the WMCA Board passed an 80-year carbon budget<sup>1</sup>, which estimates the maximum carbon that can be emitted by the region whilst delivering on our obligations under the Paris Agreement. The Board also agreed that an estimated investment of 1-2 percent of regional GVA was required to ensure that it was possible to meet that budget. Between 2020 and 2041, this works out at about £40bn: an investment programme over five times larger than the one WMCA and its partners is currently delivering.

Without that investment, regional emissions will lock in between 3-4 degrees of warming – and the likelihood of reaching zero carbon at all by 2100 sharply diminishes.

## Public Private Partnership

It is clear that we cannot create this money via prudential borrowing and taxation alone, even if that were supported by local people. Government must support the region through devolution, regulation and investment, and we need to work in partnership with businesses and third party organisations to stimulate the creation and use of innovative financial products, from community share issues to green bonds.

1. WMCA area comprising of the geography of the Black Country, Coventry and Warwickshire, and Greater Birmingham and Solihull Local Enterprise Partnerships. This made up of the unitary and district councils of Walsall, Wolverhampton, Sandwell, Dudley, Birmingham, Solihull, Cannock Chase, East Staffordshire, Lichfield, Wyre Forest, Bromsgrove, Redditch, Tamworth, Coventry, North Warwickshire, Nuneaton and Bedworth, Rugby, Stratford Upon Avon and Warwick. See: <https://governance.wmca.org.uk/documents/s3219/Appendix.pdf>

It is also clear that achieving our climate goals will require an unprecedented reduction in emissions, which is why WMCA has set a realistic timeframe for its zero carbon target, for 2041. Previous reductions have been possible because of a number of factors, which we either cannot or will not replicate. Firstly, because of EU directives<sup>2</sup> mandating the closure of coal-fired power stations, and national scale installation of renewables. Large reductions in industrial emissions have also been caused by local deindustrialisation, but consumption has not declined at the same rate – suggesting we are just ‘offshoring’ our emissions to other countries. Finally, we need to understand that people living in poverty tend to contribute to emissions reductions. Our commitment to lifting people out of poverty remains implacable, but the consequences of doing so may well be increased emissions unless we change how we do this.

Some WMCA local authority partners have agreed to reach net zero carbon – either for their operations or the whole area – by 2030. This level of ambition is something that WMCA supports, and will strongly back any local authority partner that signs up to an earlier target – but in setting the regional target, we take into account that what we are aiming to do is unprecedented in this country, will require collaboration at all levels, and will require building the regional capacity to deliver and hold partners accountable, which takes time.

## What has the region committed to?

The carbon budget committed the region to the following:

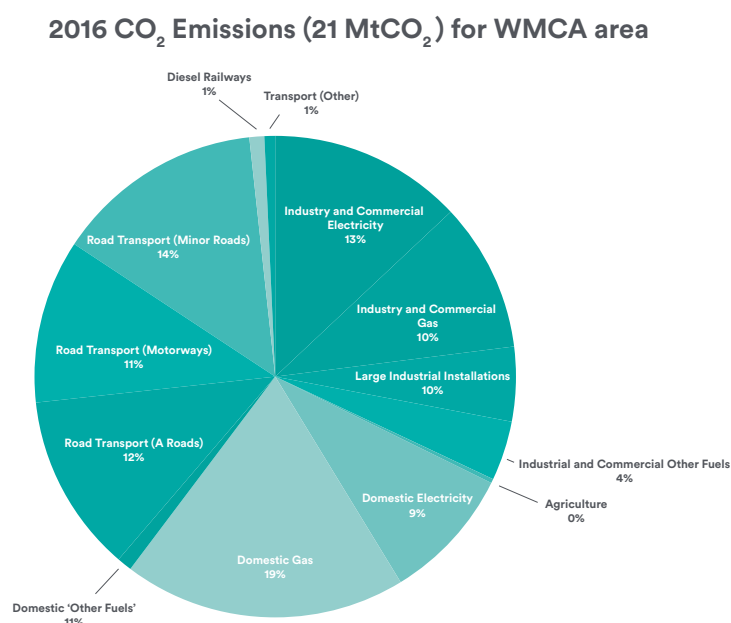


Figure 1 – WMCA emissions in 2016: like most areas there is a relatively even split between commercial/industrial, domestic and transport sectoral emissions.

Staying within a cumulative carbon dioxide emissions budget of 126 million tonnes (MtCO<sub>2</sub>) for the period of 2020 to 2100.

A West Midlands target of **net-zero emissions no later than 2041**, with interim targets based on a 2018 baseline of **36% reduction by 2022**, and **69% reduction by 2027**, supported by the corresponding carbon budgets was set.

2. Initially, the Large Combustion Plant Directive (2001/80/EC), followed by the Industrial Emissions Directive (2010/75/EU).

By using a similar approach to the Tyndall Centre for Climate Change, we can infer the estimated 2020 – 2100 carbon budgets for all of the local authorities in the WMCA 3-LEP area:

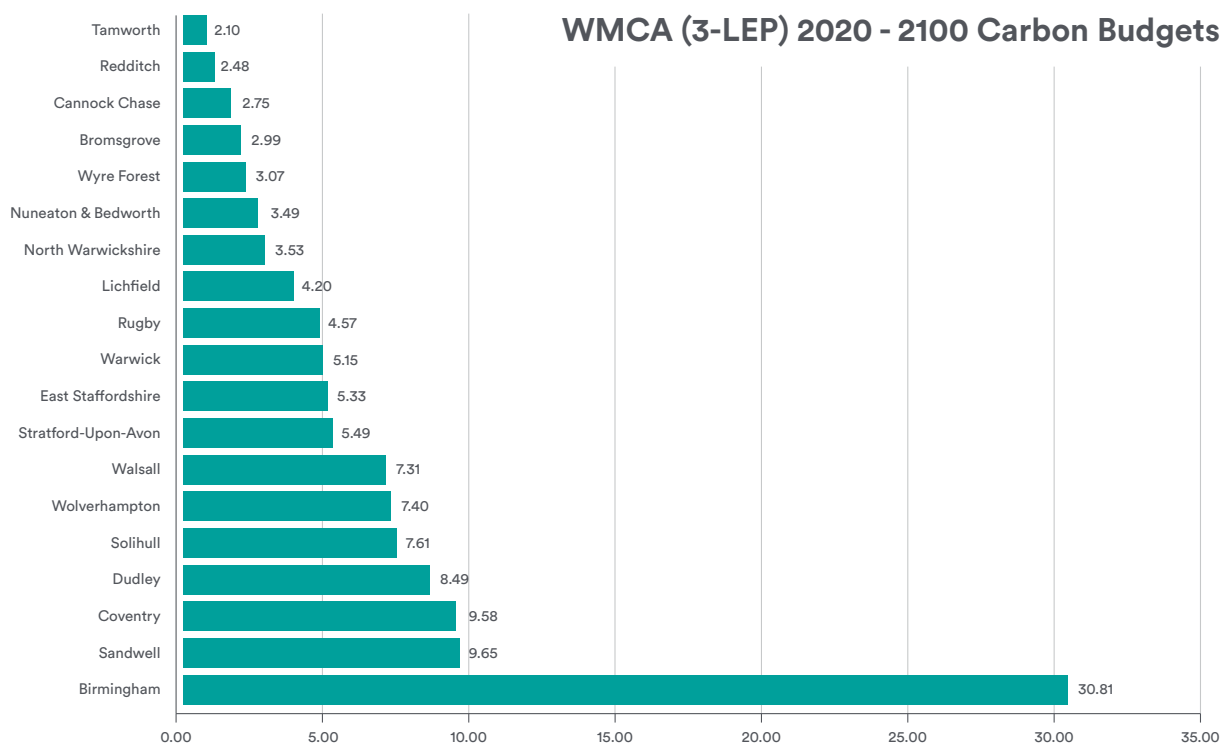


Figure 2 – The 2020-2100 carbon budgets for each local authority in the WMCA 3-LEP area, expressed in MtCO<sub>2</sub> – these are estimated in order to frame action, and are not binding on the authorities listed above.

So, what does this mean? Firstly, let's look at 2016 emissions on a per person basis, in each of the local authorities in the WMCA area:

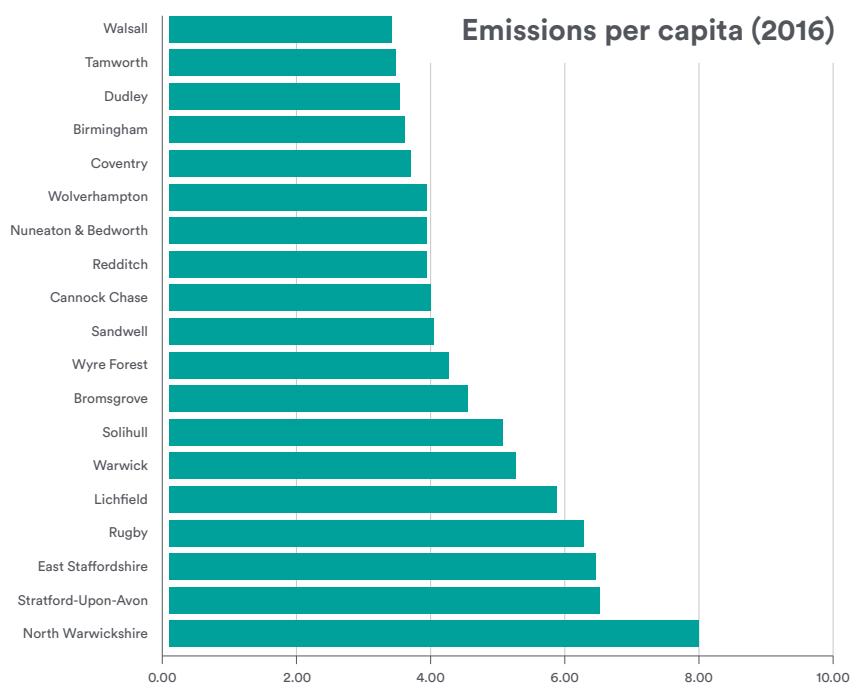


Figure 3 – Emissions (in tonnes) per capita for the year 2016, for each local authority in the WMCA 3-LEP area.

By looking at differences across the diverse places of the West Midlands, the following can be inferred:

- **Density makes a difference:** in cities / conurbations, people, energy, and items have less far to travel, and economies of scale are easier to realise. Furthermore, some homes in rural areas have less amenity to enable different choices: e.g. poorer public transport, or homes that are not connected to a gas main.
- **People living in poverty are already low carbon:** they are less likely to own a car, and generally consume less – e.g. by rationing heating to pay for food. As such, areas with significant poverty in the region tend to have lower per capita emissions – and emission drops in these areas can be partly attributed to rising poverty.

Understanding these differences will help us to come up with the right policies and investments for the many different places of the West Midlands.

## Emissions explained



A small family living in a Victorian mid-terrace, with one parent at home emits **4.5 tonnes of CO<sub>2</sub>**.



A typical family car would emit **5.37 tonnes of CO<sub>2</sub>** if it drove around the circumference of the earth.

Balancing the region's carbon budget, and becoming zero carbon en route, will be a huge challenge to the West Midlands. If we carry on emitting carbon dioxide at 2016 levels, we will 'spend' 80 years of emissions in just six years.

Carbon budgeting for big investments will help us to ensure that they stack up: but this carbon budget is not the only challenge, and it is important to not see it as the only motivator for change.

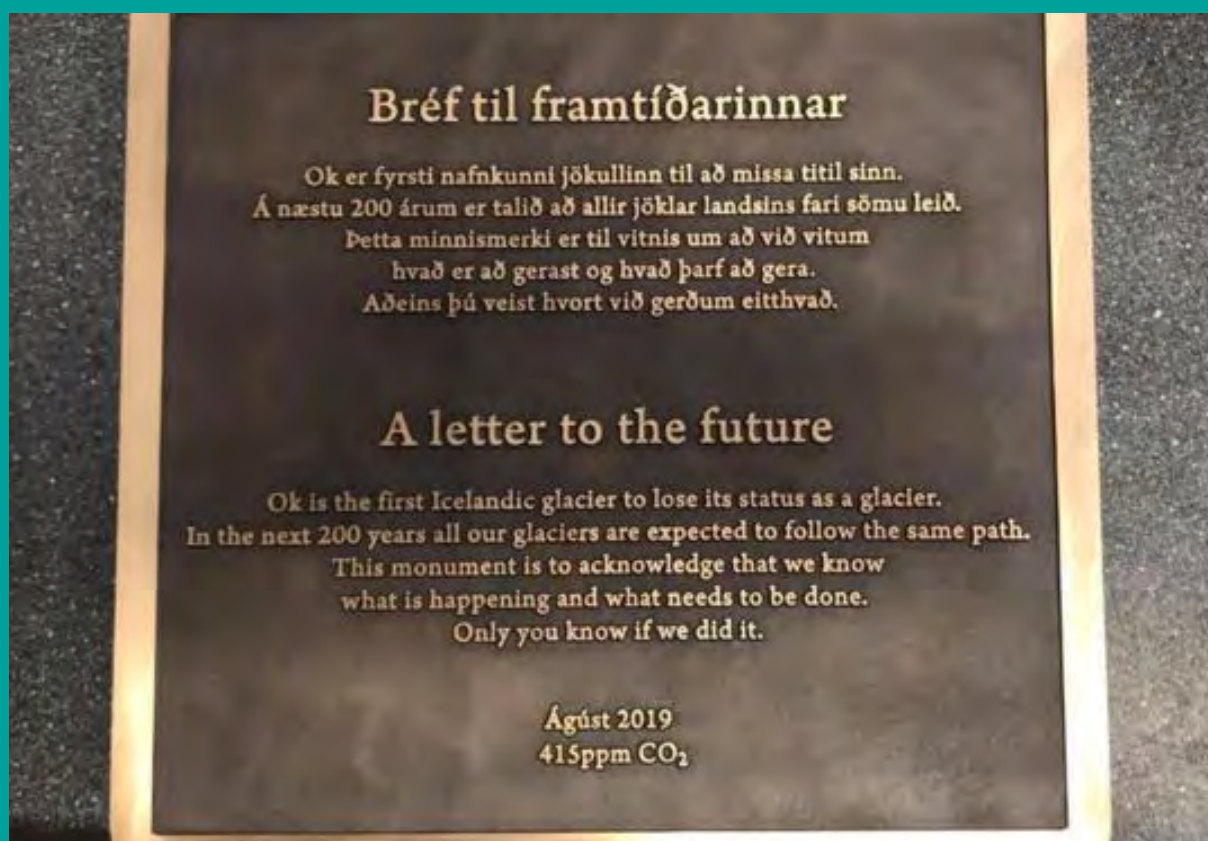




# 1

## We need to make the journey to 2041 without leaving anyone behind

By 2041, the West Midlands economy needs to shift to one which is zero carbon and abides by circular economy principles, while enabling the people of the region to build and enjoy their prosperity. That is not where we are at the beginning of 2020. The choices we make now will determine whether the region can deliver on its obligations, and the extent to which we can do so in a way which alleviates poverty, deeper inequality, and disenfranchisement.



## 2

# We need to boost our resilience to 'locked in' climate breakdown

Some changes to the climate are inevitable – either because they have already happened, or will already happen. This means that the people, places and infrastructure that comprise the West Midlands will need investment in order to withstand impacts like increased rainfall and extreme temperatures. This will require us to think differently about nature-based solutions to climate change, as well as how we build homes and communities.



# 3

## We need to reconcile our past with our future

The West Midlands has a proud industrial past, and our strengths in sectors like automotive are deeply embedded in our psyche. Cars are not just how many people get around: they are part of who we are. We need to take this part of our identity forward without locking the region into congestion, polluted air and climate breakdown. This means we need to prioritise mobility solutions that support public health and social outcomes.



# 4

## We need to build more places, and more connectivity between places

In the West Midlands, we need to build 215,000 homes by 2031 to house an additional 500,000 people. Those people will need more than a home to live in: schools, shops, GP surgeries, bus routes, broadband connections, leisure facilities, places to send their household waste, and more. All while investing into the quality and connectivity of existing places. Our region needs to grow while our emissions shrink.



# 5

## We need to save energy and resources without reducing shared prosperity

We want people in this region to become more prosperous, together – but we will need to do this while reducing demand for energy, resources, and recalibrating our demands on the land and natural environment more broadly. Moving away from single-use plastics is an active shift that we can learn from, but there will need to be a lot of these types of shifts happening simultaneously across sectors.

## The UK context

- **UK Climate Change Act 2008<sup>3</sup>:** this legislates a commitment to 100% reduction in greenhouse gas emissions by 2050 from 1990 levels, with five yearly carbon budgets to set actions and review progress. However, the level of these budgets is not aligned to the Paris Agreement.
- **Committee on Climate Change:** This is the UK Government's advisory body on climate change. They have highlighted the need to close the gap between rhetoric and action – setting a carbon reduction target is the 'easy part' – identifying the actions on how to reach it is much more challenging. The areas of focus they have suggested are lagging in mobility and the built environment.
- **Government target of net zero carbon emissions by 2050:** so far, national level installation of renewables and decommissioning of coal has reduced emissions from electricity. The UK will have phased out coal completely by 2025. The continued decarbonisation of energy, especially the management of peak demands across the power grid, is a significant challenge. The Queen's Speech in October 2019 introduced a new Environment Bill, which will influence how this target and other related goals – such as ending the sale of fossil fuel powered vehicles by 2040 – are delivered.
- **Clean Growth identified as a Grand Challenge at the heart of the UK Industrial Strategy:** with clean growth identified as a Grand Challenge, with missions to at least halve the energy use of new buildings by 2030 and establish the world's first net-zero carbon industrial cluster by 2040 and at least 1 low-carbon cluster by 2030.



- **Sustained protests led by Extinction Rebellion and Youth Strike 4 Climate:** both movements have organised local and national protests and other types of action to draw attention to the need to address climate breakdown. Whilst not everyone has been won over, the issue is justifiably a high priority among a majority of people of all ages. Both movements have asked Government to meet the reality of climate breakdown with honesty: acknowledge the scale of the problem. WMCA's climate emergency declaration is that acknowledgment at regional scale – although the next step, to meet that emergency with the thought, care, and resources that requires will take more effort to achieve.

## The Local Industrial Strategy and economic opportunity

The West Midlands Local Industrial Strategy<sup>4</sup> will boost productivity and earning power in a way that is clean and inclusive by focusing on distinctive regional economic assets and challenges. The region's clean growth aims potentially give local businesses a competitive advantage in growing global markets, with exports of low carbon goods and services set to be worth between £60 billion and £170 billion to the UK by 2030<sup>5</sup>.

Developed by the region and agreed with Government, the Local Industrial Strategy creates an investment pathway for the high value, high productivity, future-proof sectors that will underpin the region's economy. This plan on a page illustrates some of the sector strengths in the region. While 'low carbon technology' is there in its own right, it is vital that each sector makes

3. See <http://www.legislation.gov.uk/ukpga/2008/27/contents>

a positive contribution to the climate challenge – building resilience and ensuring that its economic activity is low carbon, circular, and resource efficient.

The region's three Local Enterprise Partnerships (LEPs) – Coventry & Warwickshire, Black Country and Greater Birmingham & Solihull - are leading on four of the sectors each, and are in the process of writing the associated action plans. Given that this is current work, this is an excellent opportunity to ensure that these plans make a strong contribution to tackling the region's climate challenge, including by coordinating business support.

## Fellow travellers

While the West Midlands has a serious challenge to face, it is not a challenge we are starting from scratch, without capacity or expertise. This is a region of innovation, particularly relating to energy. It hosts substantial national research and innovation assets in the Energy Systems Catapult, Climate-KIC, and the universities of Aston, Birmingham and Warwick, which are part of the Energy Research Accelerator. These universities have highly complementary research expertise in energy.

Wolverhampton, Coventry and Birmingham City University further enhance regional energy capabilities, particularly around energy in buildings, smart systems, local skills development, and industry engagement. Our local authorities and LEPs are already working on the means to effect the changes we will need to see at a local and sub-regional level.

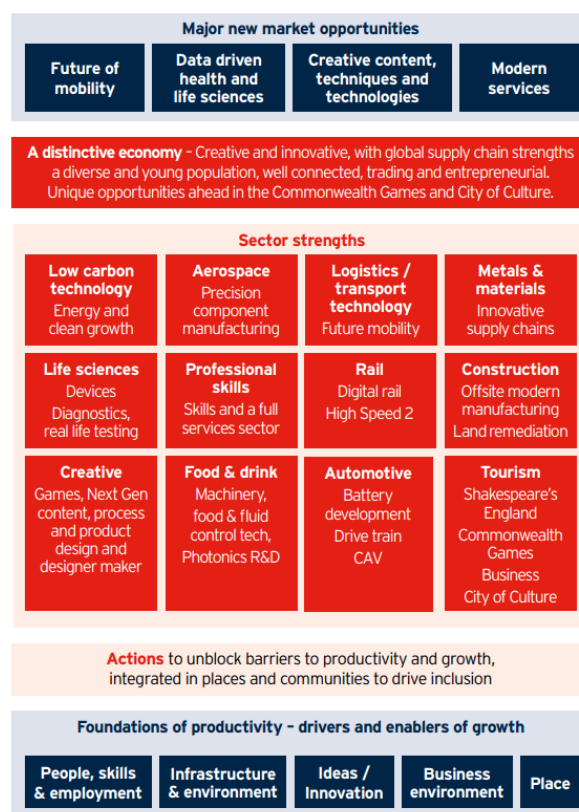


Figure 4 - The West Midlands Local Industry Strategy on a page



4. See [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/802092/west-midlands-local-industrial-strategy-double-page.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/802092/west-midlands-local-industrial-strategy-double-page.pdf)

5. From Ricardo Energy and Environment for the Committee on Climate Change (2017) UK business opportunities of moving to a low carbon economy for the UK's Clean Growth Strategy (April 2018).

## Doing things the West Midlands way

Investing in mitigating and adapting to climate breakdown is essential for the future of this region, but it is also an opportunity to make sure that we achieve other goals. WMCA is committed to a model of inclusive growth which judges economic activity by the quality of its outcomes for people and place:

**A more deliberate and socially purposeful model of economic growth – measured not only by how fast or aggressive it is; but also by how well it is created and shared across the whole population and place, and by the social and environmental outcomes it realises for our people.<sup>6</sup>**

The WMCA Inclusive Growth Framework lays out ‘what good looks like’ for economic activity, and its influence should carry through to the region’s climate action.

However, this is also part of an international effort, and WMCA will indicate where its efforts will contribute to the United Nations Sustainable Development Goals (SDGs)<sup>7</sup>. This will help the region to both benchmark against and learn from local partners.

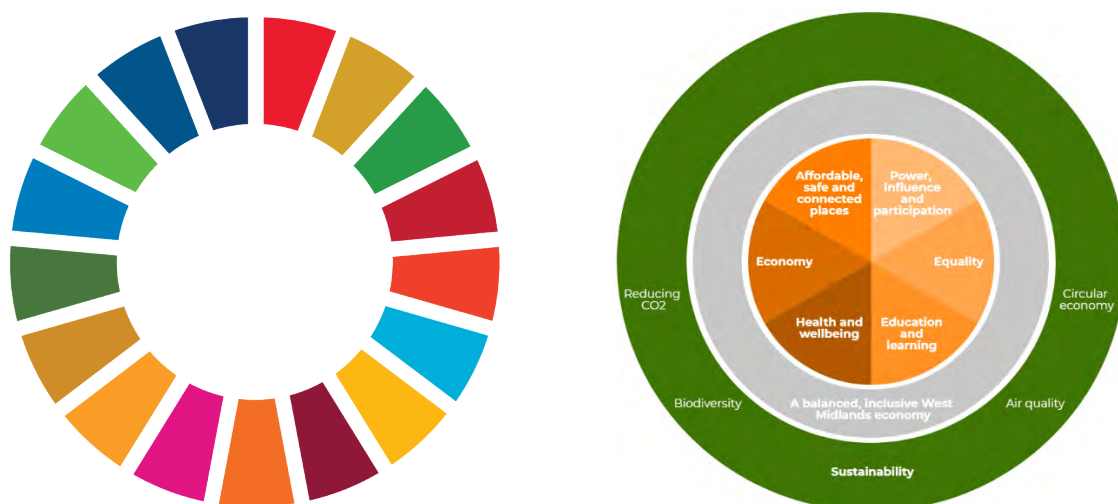


Figure 5 - SDG Wheel alongside WMCA's Inclusive Growth Framework

Throughout this section of the document, you will see icons which denote which SDGs relate to how the West Midlands will meet the climate change challenge<sup>8</sup>.

6. 'Inclusive Growth – Update and Next Steps' WMCA Board, 24 May 2019: <https://governance.wmca.org.uk/documents/s2910/Report.pdf>

7. See: <https://sustainabledevelopment.un.org/sdgs>

8. See Footnote 6, which explains each of the SDGs in detail.



When it comes to assembling investment cases for this work, the SDGs will form an important part of how we demonstrate that we are focusing on the right things, and delivering against the social and environmental outcomes that people of this region will judge us by.

In that spirit, the West Midlands will:

1. **Respect subsidiarity:** leadership on tackling climate change will come from individuals, households, organisations, neighbourhoods, public institutions, universities, central Government, and everything in between. The WMCA will ensure that it creates the right spaces for leadership, partnership and action, and will know when to lead, when to follow, when to ask difficult questions, and when to make space. Furthermore, we will be open to learning from other places – nationally and internationally – that have already made progress on the same journey.



2. **Build wealth, and recycle it throughout the region through skills and community ownership:** people in the West Midlands can become more prosperous as we invest into tackling climate breakdown. Developing skills that meet the challenges of climate breakdown are useful beyond the region, and have a clear, motivating social purpose. The generation and storage of clean energy and heat will always be in demand. Municipal, co-operative or local business ownership of generating capacity provides stability to the region's energy systems, and a revenue stream that can be invested back into places and people.



3. **Boost health and wellbeing:** many aspects of tackling climate breakdown align with improving health and wellbeing. Spending time outdoors in green space. Active travel. Breathing cleaner air. Living in a comfortable home. A steady income. Investments into tackling climate change will put these opportunities front and centre.



4. **Take a 'circular' approach:** circular economies 'design out' waste and pollution, keep products and materials in use, and regenerate natural systems. This encompasses the reduction, re-use, and recycling of waste, as well our commitment to biodiversity net gain and the quality and quantity of our green spaces, canals, rivers, and lakes. There are also economic opportunities – through the bioeconomy, for example – that could be explored in how we work with our waste streams.



5. **Invest in comfortable homes and buildings:** whether a home, commercial unit or community building is old or new, it should be easy and affordable to keep it at a comfortable temperature (encompassing heating and cooling). Investing into the energy performance of buildings can help to achieve this, addressing homelessness, fuel poverty and waste.



- 6. Make space for sustainable transport:** space is precious, and how we use it for travel needs to reflect our priorities. Alongside tackling climate breakdown, our priorities are reducing congestion and pollution. As such, space will gradually and thoughtfully be allocated away from solo occupancy cars, and towards walking, cycling, and mass transit.



- 7. Champion young leadership:** this is a young region, and it is because of young leaders that we are focusing on adapting to and mitigating climate breakdown. Continuing in that spirit, we will invest into the creativity, education, skills and capabilities of young people in this region, and will make space for them to create and lead.



- 8. Unite people across the region by creating common cause and addressing inequalities:** tackling climate breakdown should be seen as a common cause, around which people from the region can unite. In a time where priorities are shifting, we can seize on the movement to ensure that people who are economically and democratically excluded have a part to play – closing gender, ethnicity, and disability employment and activity gaps. Those people are already more likely to be exposed to the negative impacts of climate change. It can also support the region's violence reduction agenda. Neither crime nor violence are inevitable, and we will use investments into tackling climate breakdown to create opportunities for people to live lives free of both.



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# Case study - Core Cities

## Collaboration on shared goals

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Core Cities UK, an advocacy group representing the ten largest cities outside of London (including Birmingham), worked together to create a series of ‘asks’ that each will need from Central Government to meet the climate challenge:

- £1bn Low Carbon City Investment Fund to support and accelerate high impact green projects.
- £1bn Clean Air Fund to support the delivery of clean air zones, estimated to be worth £6.5bn to the economy.
- Tax and incentives to boost and encourage investment in low carbon enterprises.
- A target of 2025 for net-zero buildings to minimise the impact of the millions of homes which the Core Cities will be required to build.
- Whole Building Retrofit fund of at least £1bn a year to enable all homes to have a whole-house efficiency treatment by 2035, focussing on those in fuel poverty first with a ‘able to pay’ initiative for wealthier households.
- Investment in transport infrastructure to reduce road congestion.

## Actions

# We will change our economy without leaving anyone behind

The investments we make in order to meet the climate challenge will be into the people who need them to thrive: tackling fuel poverty, giving people space to change career direction, improving skills, providing affordable connectivity, cleaning the air and ensuring the quality and availability of public spaces and assets.



## What does this look like?

### We prepare thoroughly for the economic shifts we can anticipate

This is about the human side of big economic shifts. No-one wants to look another person in the eye and tell them that, soon, no-one will be able to buy what they are selling. This is a region that remembers what it is like to lose industry, a local brand, or a beloved high street retailer. That isn't just about a job that pays the bills, important as that is. It is about doing something purposeful, something that makes you proud, something that matters to the people you know and the place you call home.

All of this means that we cannot take this part for granted. Some of these changes will be painful, even if we manage them with care and precision. To soothe that sting, our new industries will have a sense of place and pride, a story we can all shape and tell.

### People have space to learn new skills and broaden their horizons without risking poverty

Changing career is not easy, even when you have space to plan. Many people will not have that – every hour they spend in training, development, or even thought is an hour they could be spent earning money, or caring for their families. We need to give people space in their minds and their budgets, so that they can work out what they would like to do, and how they would like to get there, without being pushed into illness or poverty.

### Everyone's air is safe to breathe

The emissions that pollute the air and warm the planet are not always the same ones<sup>10</sup>, but there is a great deal of overlap, and they stem from the same behaviours – burning fossil fuels in the places where people travel, live, work, and play.

### No-one has to choose between heating and eating

People in energy poverty cannot afford energy to meet their needs, and often have to choose what to do without: transport, hot food, or a warm home. The poor energy efficiency of many homes contributes to this dilemma. There are 1.7 million existing houses in the West Midlands, and at least 200,000 of these are in 'energy poverty'. In order for everyone to stay on the journey to 2041, people must be able to afford the energy they need to participate in society.

10. Air pollution tends to be caused by soot (PM10 and PM2.5), oxides of nitrogen (NOx) and ozone (O<sub>3</sub>).

EXAMPLE ACTIONS				
Changing our economy without leaving any of our communities behind				
First five years	Secure Government support for an enhanced 'Clean Air Deal' for the region	Launch communications campaign to celebrate the pride and skill of 'green jobs'	Secure devolution of Energy Company Obligation funding to WMCA	Learn from existing clean air policies and expand in line with network improvements
	Explore partnership with DWP to pilot proactive welfare support for people in at-risk industries	Secure resource to drive energy efficiency standards for private rented sector homes	Strengthen energy efficiency standards for private rented sector homes to EPC 'C'	Introduce LHA+ to incentivise energy efficiency in private rented sector homes
	Design a regional pay-as-you-save home retrofit scheme, backed by a low-cost borrowing line	Secure means to help all places in the region to shift to LED street lighting		
Between five and fifteen years	Collaborate to create joined-up skills support mechanism for people in at-risk industries	Expand 'Mobility Credits' vehicle scrappage scheme to the whole region	Work with Treasury to change Green Book standards for long term investment	
The last five years	The sale of petrol and diesel vehicles is banned by 2040, in line with national targets			

## Changing our economy without leaving anyone behind: the first five years

- New investment standards based on climate impact:** in negotiating the region's next devolution deal, the region will work with Government to broker new investment standards for the West Midlands. In this way, all public spending can be judged by the positive social and environmental outcomes it creates, and not on GVA uplift alone.
- Expansion of low emission places:** learning from the current development work on Birmingham's Clean Air Zones, and the car exclusion zone pilots around schools that have been run in Birmingham and Solihull, places across the region will collaborate to plan how this can be expanded in line with upgrades to the transport network.
- Review of Movement for Growth:** Transport for West Midlands (TfWM) has already started the process of reviewing the strategy, with climate emergency as one of its key themes. This is partly about ensuring credible, sustainable public transport, partly about reducing demand, but also, ensuring that the region is able to balance the delivery of goods to people and businesses with the need to create safe spaces for people to walk and

cycle. The ‘last mile’ is particularly important to get right, notably the demand for home delivery continues to escalate.

- **Enforcement and strengthening of energy efficiency standards:** secure resources to enforce Minimum Energy Efficiency Standards (MEES) regulations for private rented sector (PRS) properties – currently need to achieve an EPC rating of E. In addition, seek Government support to strengthen the MEES threshold from E to C.
- **Introduction of LHA+:** As per the development work of WMCA Homelessness Taskforce<sup>11</sup>, develop a new deal – LHA+<sup>12</sup> - with PRS landlords who are willing to commit to good standards and fair access. This would involve landlords agreeing to meet the Decent Homes<sup>13</sup> standard, provide reasonable lengths of tenancy, and accept tenants referred by local authorities. This could equate to social rents at 50th percentile.
- **ECO devolution:** continue to pursue devolution of Energy Company Obligation (ECO) 3<sup>14</sup> funding, including of the ability to join up fragmented funds for more effective local delivery.
- **Pay-as-you-save energy efficiency scheme:** scope a regional energy efficiency scheme using prudential borrowing, or other financial products like green bonds. These could be backed by various sources, including the UK Municipal Bonds Agency<sup>15</sup>, institutional investors, and innovative start-ups like Bankers Without Boundaries<sup>16</sup>.

## Changing our economy without leaving anyone behind: between five and fifteen years

- **Focused support for people in at-risk jobs:** collaboration to merge resources from education, adult skills, social security, and industry to create focused support for people working in ‘at risk’ industries, as well as for people who would like to return to the labour market.
- **Pride in green jobs campaign:** develop a campaign where the stories of people who do work that contributes to meeting the climate

challenge are given space to tell their stories, so we can share in the pride and purpose of their work.

- **Financial support for people moving from at-risk roles:** develop a protocol which creates financial provision for people working in ‘at risk’ industries, as part of the offer to incentivise retraining.
- **Mobility Credits expansion:** explore creating a regional vehicle scrappage scheme wherein it is more advantageous to swap a petrol powered car for a travel pass or CAZ-compliant secondhand car than it is to trade it for a new vehicle. This is currently being piloted in the West Midlands as ‘Mobility Credits’. A variant on this policy could be introduced for business with significant fleet.

## Changing our economy without leaving anyone behind: the final five years

- **Government:** as outlined by the Government’s Clean Growth Strategy, the sale of new petrol and diesel vehicles will be banned in the UK from 2040 onwards.
- **WMCA/Councils/Government:** there will be no fossil fuel powered vehicles permitted on the roads of the West Midlands, with safer spaces for walking and cycling.

11. See <https://governance.wmca.org.uk/documents/s3029/Report.pdf>

12. Local Housing Allowance – essentially, the rates used to calculate how much housing benefit can be paid in rent to private sector landlords.

13. See [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/7812/138355.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7812/138355.pdf)

14. See <https://www.gov.uk/government/consultations/energy-company-obligation-eco3-2018-to-2022>

15. See: <https://www.ukmba.org>

16. See: <https://www.bwbuk.org>

# We will invest in the resilience of our places

Changes to the climate are likely to mean that the West Midlands experiences higher rainfall and a greater likelihood of extreme temperatures. These changes will occur, even in the IPCC's<sup>17</sup> most optimistic scenario – 1.5 degrees of warming<sup>18</sup>. This means that we need to invest in our ability to live with both of those things: by enhancing green spaces, designing out flooding and extreme temperatures from our places, and upgrading our infrastructure.

If we breach 1.5 degrees of warming, we can expect all of these impacts to intensify, along with increased migration of people globally, and higher potential for biodiversity loss and vector-borne disease. All of this will require a different approach to maintenance, investment and development of our places.



## What does this look like?

### We plant trees and other greenery to help us manage increased temperatures and rainfall

Our investment in tree planting is not about aesthetics alone: we plant strategically, based on evidence around the need for cooling, exposure to flooding, and to achieve maximum carbon sequestration. This means planting in places which we would otherwise develop and improving our approach to forestry management. We will also need to be conscious of the interplay between urban greening and microgeneration – e.g. sometimes you can have a combined green roof and solar array, but on other occasions, you have to choose between them, depending on what is most suitable for the area.

17. Intergovernmental Panel on Climate Change

18. Special Report – Global Warming of 1.5°C: <https://www.ipcc.ch/sr15>

# Case study - Scandiasgade Park, Copenhagen

## A community park that alleviates flooding



Copenhagen is well known for its urban green credentials. Aiming to be carbon neutral by 2025, it is one of Europe's leading cities in addressing climate change.

Nonetheless, it is still looking to improve social inclusion, resilience and liveability in its approach to tackling urban renewal and development. As such, the city has prioritised a number of areas for more in-depth community-facing work around the role that climate change solutions might play in day-to-day life; including the role of nature-based solutions in improving adaptation.

Copenhagen has increasingly suffered detrimental effects from flooding. For example, in July 2011, a huge storm struck the city with rainfall higher than the estimated 2000-year return period. There was significant infrastructure damage across Copenhagen with claims from building owners exceeding £800m. So they took action. In Sydhavnen District a citizen-based approach was taken to develop adaptation measures to reduce the risk of future flooding. What was developed was a pocket park, Scandiasgade Park.

The park that was finally built is around 13m wide and 365m long. It is divided into 'zones' that support nature (for example an area with plants to attract pollinators) as well as community-focused areas – for example a 'beach'-style park, with charging infrastructure so that community events can be held there. These zones are sunk below the level of the pavement and roads, with an elevated walkway across them all. The park, which is yet to be tested by a major flood event, can absorb approximately 1,500m<sup>3</sup> of rainwater.



# Case study - A vision for the Cole Valley

## Investing to benefit wildlife, heritage and people



This vision was published in October 2019 by the Environment Agency and the Tame Valley Wetlands Landscape Partnership. It covers a substantial section of the River Cole, and is split into two elements. Firstly, to drive “cultural interest” in the area, to encourage investment. Secondly,

investing in biodiversity, flood mitigation and water quality enhancements, ensuring that the River Cole and its surrounds continue to benefit the wildlife and residents of Birmingham, Solihull and North Warwickshire for many years to come.

Underpinning the vision are **four** objectives:

- **Create** a high quality blue/green corridor along the River Cole through East Birmingham, North Solihull and North Warwickshire that can be used as an alternative travel route for local or commuting journeys without the car.
- **Enhance** the natural and historic environment, improve biodiversity and water quality, reduce flood risk and highlight the opportunities for natural capital and environmental net gain.
- **Re-connect** local communities and businesses with their local public open space, help them value what the River provides for them, improving wellbeing and resilience through social prescribing and identifying links between behavioural change and flooding/environmental improvements.
- **Stimulate partnership working** across multiple stakeholders to coordinate approaches to catchment-wide issues, deliver local policy aspirations and unlock multiple funding opportunities.

The blend of catchment-wide and locality approaches is consistent with the spirit of this plan, and will boost the resilience of places along the river to climate breakdown.

### We ensure that land is used wisely

It is impossible to become a 'self-sufficient' region when it comes to local food production, but we can ensure that the food we produce has high nutritional value, suits the locality, and makes best possible use of the space. We will also need to think about the resilience of the food we import<sup>19</sup>, which will be subject to increased demand due to population growth, geopolitical tensions and locked-in climate breakdown.

## Case study - Saturn Bioponics

### Space and resource-efficient food production



Saturn Bioponics, based in Birmingham, is one of the first 3D 'vertical farming' businesses to create a business model that can grow and sell healthy food at commercial scale. Their model is based on hydroponics, which has a higher production rate and lower environmental impact than soil farming, and gives people clarity on how their food has been produced.

It also means that land which is unsuitable for soil farming could be used to produce food – an option for brownfield land.

19. See 'Back From The Future' by Birmingham Food Council, which indicates that our imported food – which currently comprises 40% of our intake – is likely to no longer be available by 2050: [https://www.birminghamfoodcouncil.org/wp-content/uploads/2018/09/BackFromTheFuture\\_HorizonScanningProjectReport\\_BirminghamFoodCouncil\\_January2018.pdf](https://www.birminghamfoodcouncil.org/wp-content/uploads/2018/09/BackFromTheFuture_HorizonScanningProjectReport_BirminghamFoodCouncil_January2018.pdf)

EXAMPLE ACTIONS				
Investing in the resilience of our places				
First five years	Deliver Natural Capital Investment Plan (currently in development)	Bus shelters located in places at risk of flooding and overheating to include green roofs	Build a workforce strategy and investment programme for the natural environment	Launch comms campaign to enable people to nurture and develop urban greenery
	Collaborate to strengthen local planning requirements for green spaces	Establish the 'West Midlands National Park', to include active management	Launch West Midlands 'crowd planting' tree challenge: one tree for each resident.	Work with TfWM and partners to create 'climate audit' on resilience of current network
Between five and fifteen years	Expansion of Natural Capital Investment Plan	Create employment 'deal' for the natural environment	Collaborate to create and deliver a sustainable urban drainage investment plan	Planting of 'green barriers' between motorways and homes or workplaces.
	Contribute to the formation of a national Food Security Institute			
The last five years	Sustainable urban drainage plan delivered in vulnerable areas	Investments made into food security, coordinated nationally		

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## Investing in the resilience of our places: the first five years

- **Natural Capital investment begins:** the Natural Capital Investment Strategy and Delivery Programme (currently in its early stages) will be delivered.
- **Urban greening on transport infrastructure:** bus and Metro shelters located in places exposed to heat and flooding could be replaced with 'green roof' shelters.
- **West Midlands National Park:** developing the commitment to creating a regional National Park, building on work developed by Birmingham City University.
- **Expanded natural environment workforce:** explore development of a workforce strategy for the natural environment, drawing on employment pathways that already exist in the sector – e.g. the Heritage Lottery funded 'Natural Prospects' scheme run by the Birmingham & Black Country Wildlife Trust<sup>20</sup>.
- **West Midlands 'crowd planting' tree challenge:** WMCA commitment to plant a tree for every resident, via a 'crowd planting' platform.

## Investing in the resilience of our places: between five and fifteen years

- **Expansion of natural capital investment:** explore expansion of the initial WMCA Natural Capital Investment Plan, enabling investments in green and blue spaces across the region – this will take both biodiversity net gain and boosting resilience to climate breakdown into account.
- **Sustainable Urban Drainage investment plan:** attracting investment in the ability of developed places to deal with increased rainfall via the use of sustainable urban drainage systems.
- **Employment deal for the natural environment:** explore development of an employment deal for the natural environment, working with FE colleges, universities and other training providers to incentivise transition into careers linked with climate adaptation and the natural environment.

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20. See: <https://www.bbcwildlife.org.uk/naturalprospects>

# We will use our industrial past to create a new future

This is a region of many perspectives, and many stories, bound together by challenge and opportunity. The industrial revolution that changed the world, started here. People came to the West Midlands from the world over: to work, create, and trade. The idea of local government shaping its place and economy was brought to life by Joseph Chamberlain. Things have changed a great deal since then but the region is proud of its history, its heritage, and the work that has shaped us all. Today, the West Midlands still has the highest concentration of manufacturers of any region, and accounts for nine percent of all manufacturing employment in Britain.

This identity looks slightly different across the region. In the east, there is an emphasis on transport and mobility, where Coventry's strength in transport and automotive grew out of over 250 companies manufacturing bicycles. In the west, there are still over 240 medium-sized businesses focused on traditional metal forming and component production, largely for the high-technology and demanding aerospace and automotive supply chains.

Now we need to write some new chapters for our new challenges. A West Midlands that is powerful enough to power itself: via its democratic institutions, its businesses, and its energy systems. A West Midlands where smart technology and low carbon connectivity create shared prosperity. A West Midlands where we come up with place and people-focused solutions to big challenges and export them to the world. A West Midlands where anyone and everyone contributes to our shared missions, and where different kinds of contributions are valued equally.

## What does this look like?

We will have an energy system which responds to our needs and is controlled by the region's people, businesses and public sector institutions

Between 2018 and 2030, more than £15bn will be invested in local energy projects across the WMCA. £74bn will be spent on products and services where the quality of local energy systems will determine how well our businesses will perform against global competitors, and how easy and comfortable the lives of citizens will be. Finally, a further £80bn will be spent on fuel and power for our industry, our transport, and our home lives. All of this investment will have to be made in a way which helps us meet the climate challenge while increasing prosperity – and devolution will be fundamental to realising that opportunity.

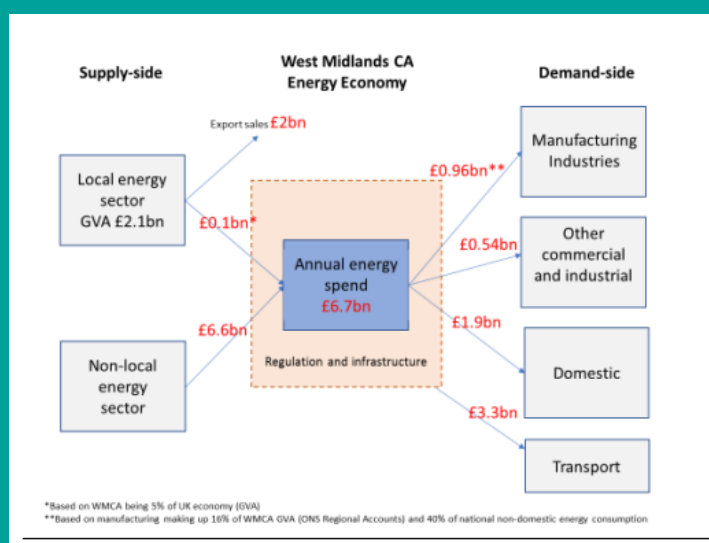


# Work underway - West Midlands Regional Energy Strategy

## Planning for future energy systems

This is the region's vision for energy across the region by 2030. It has been developed by Energy Capital, a regional, cross-sector partnership that has formed to address and overcome the structural issues with the UK energy system. It includes the following aspects:

- Reducing energy costs for our strategic industrial sectors to at least match those of our international competitors.
- Reducing the incidence of fuel poverty across our region by hitting current government targets for energy efficient housing five years ahead of schedule.
- Delivering the West Midlands' share of national and global carbon budgets by reducing regional carbon emissions.
- Creating a regional energy infrastructure that adds £1bn to GVA by 2025 by putting the region at the leading edge of the global energy and transport systems transition.



The main delivery mechanism for this vision is Energy Innovation Zones (EIZs): local partnerships which are brought together to focus on the energy innovation and investment needs of their place. The first four pilot EIZs have already been established, and will act as a focus for energy systems investment of between £270m and £490m over the next 15 years.

There is a significant opportunity for the regional energy economy: the more we can generate, the less we need to import. Although the local energy sector contributes approximately £2.1bn of GVA to the regional economy, most of this is earned outside the region. Furthermore, it is dominated by companies like E.ON, who sell energy nationally. Businesses and households in the West Midlands spend £6.7bn annually on energy, and more on average than their European competitors. Over £960m is spent by the industrial and manufacturing sectors and an additional £540m by the remainder of the commercial and industrial sector.

## Case study - Genius Hub

A heating system that learns from you



Created in Dudley and now based in Birmingham, Genius Hub helps people use smart technology to keep their homes comfortable and energy efficient. They specialise in managing 'complex' environments: large properties (more than three bedrooms) or non-standard heating such as underfloor, ground source heat pump, biomass and solar.

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Our industrial processes will work in 'symbiosis', with waste from one part of production supplying another

# Case study - International Synergies<sup>21</sup>

## Enabling complex industrial networks to design out waste

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International Synergies, which has its head office in Birmingham, is a world leader in 'industrial symbiosis'. In simple terms, this is when surplus resources generated by an industrial process are redirected into another process by one or more other companies, providing a mutual benefit or 'symbiosis'. It works to facilitate links between those companies, by building networks of companies that can use one another's waste. With this expertise in the region, WMCA, local businesses and partners are in a good place to build symbiotic networks in key areas and sectors.

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21. See <https://www.international-synergies.com>



EXAMPLE ACTIONS				
Using our industrial past to create a zero-carbon future				
First five years	Investment prospectus and fund for energy system innovation	Ensure Energy Innovation Zones have the necessary regulatory flexibility	Influence Government policies on renewables and carbon storage	Work with LEPs to ensure LIS maximises climate investment goals
	Commission a regional industrial symbiosis investment plan	Develop fiscal and R&D incentives to support auto OEM shift to EVs	Roll out collaborative solution to EV-charging at-scale (e.g. ULEV strategy)	WM5G team to work with public services to create infrastructure for more remote working
Between five and fifteen years	Work with Government to ensure energy costs are apportioned strategically to boost key sectors	UK Battery Industrialisation Centre in Coventry operational	Roll out in-school education programmes, e.g. UN Climate teachers in schools	Work with Universities and providers to create regional 'cluster' of climate change education

## Using our industrial past to create a zero-carbon future: the first five years

- **Energy systems innovation fund:** create a specialist investment fund to unlock energy systems innovation as part of an overall 'deal' for the energy economy.
- **Create regulatory flexibility for Energy Innovation Zones:** collaborate with legislators and regulators to detail the legal implications and requirements for Energy Innovation Zones (EIZs).
- **Influence energy generation, storage and distribution policies:** in line with the UK Government's own commitments, ensure that the region is able to influence its policies relating to renewable energy, heat, and energy storage.
- **Boost generation and sale of energy in the region:** support existing city-led efforts to create energy infrastructure that keeps money from the sale of energy recirculating in the area. These initiatives could be led in a number of ways and could support people on low incomes through more appropriately

designed social tariffs.

- **Design in industrial symbiosis:** commission an industrial symbiosis investment plan, to work out the areas with most potential for carbon reduction, resource efficiency and return on investment and which could keep resource and build eco-supply chains within the region.

## Using our industrial past to create a zero-carbon future: between five and fifteen years

- **Strategic allocation of energy infrastructure costs:** use regulation to 'favour' key sectors when it comes to the apportionment of energy infrastructure costs. It may not be long until the price of fuels essentially falls to zero. In this situation, it follows pricing cannot meaningfully be based directly on usage. Instead, it will be entirely focused on ensuring infrastructure investment costs are recovered and this may be done in a number of ways to meet industrial strategy or political objectives.

# We will create places and connections that help us to meet the climate challenge

When we build transport infrastructure, or new neighbourhoods, we will use low carbon processes and materials, making use of recycled and repurposed materials. The ways in which we adapt existing places will need to be considered – ensuring that everyone benefits, and that the place retains its identity and appeal. These challenges will enable us to build expertise in ‘urban transition’; essentially, how you change a region from being reliant on fossil fuels, resource extraction and at risk of flooding, to one that is low carbon, resource efficient, and resilient.

The challenges of achieving this are not (on the whole) technical in nature. What is required is innovation in business models, regulations, and in the delivery and financing mechanisms.



## What does this look like?

### All new build infrastructure is constructed thoughtfully and is energy efficient

WMCA has ambitious plans to build a further 215,000 homes by 2031. As well as the emissions associated with construction, this could easily add £100-300m to annual regional energy spending (at current prices). As such, ensuring that new homes are zero carbon and are able to generate and store renewable energy will be an economic boost to the region.

The UK Green Building Council suggests that to put the UK on course to meet both domestic and international climate change commitments, all buildings must be net zero carbon in operation before 2050, with new buildings meeting this standard by 2030. WMCA is aiming to deliver on both sets of commitments so will align with both targets.

# Learning from the past - The Green Deal

## Pay as you save energy efficiency

The Green Deal was a Government-backed ‘pay as you save’ policy that existed between 2013 and 2015.

The concept was simple: people would install energy-saving measures in their homes by taking out a ‘Green Deal Loan’, which remained attached to the house. People paid nothing up front on the expectation that they – and future residents of that home – would pay the loan back via savings realised in their energy bills.

The WMCA could develop a similar policy, but there were a number of faults in the implementation of the original that we need to learn from<sup>22</sup>:

- **Demand:** people did not want the energy saving measures that they needed the most – notably internal and external solid wall insulation. Both measures are disruptive to home life, with long payback times, and were not well understood by homeowners, who had been ‘sold’ the Green Deal based on financial savings rather than thermal comfort. Furthermore, the least efficient homes tended to be in private ownership making it hard to treat multiple properties at once – for example, an entire terrace. This suggests that demand for these measures will need to be stimulated via incentives, regulation, or a combination of the two.
- **Finance:** demand for Green Deal Loans was suppressed by being more expensive<sup>23</sup> than other comparable forms of borrowing. For people who could access credit, it was more cost effective to extend a mortgage, or to take out a secured loan.
- **Value for money:** the Green Deal Finance Company invested £25m in its set-up costs to service activity that was never undertaken, and the Department for Energy and Climate Change (DECC) did not have voting rights on its board (so could not stop this). Being able to start small and scale with demand is key to realising value for money.
- **Data:** it was hard to measure progress on key objectives like fuel poverty because DECC did not have access to the right data – notably on household income. It was also tricky to blend Green Deal measures with existing fuel poverty support.

Crucially, succeeding at delivering energy efficiency at scale will mean that the region will need to be able to pool different kinds of support and investment and set its own definition of what success looks like.

22. Laid out by the Public Accounts Committee, see [https://publications.parliament.uk/pa/cm201617/cmselect/cmpublic/125/125.pdf?utm\\_source=125&utm\\_medium=module&utm\\_campaign=modulereports](https://publications.parliament.uk/pa/cm201617/cmselect/cmpublic/125/125.pdf?utm_source=125&utm_medium=module&utm_campaign=modulereports)

23. Interest rates on Green Deal Loans were between 7% and 10%.

## We move around the region using mass transit and active travel

Car journeys are on the wrong trajectory in this region – anyone who has been stuck in traffic will recognise this. While there has been a small fall in overall emissions, the improving efficiency of vehicles means that the number of car journeys has actually increased.

It is not practical to transfer this use over to electric vehicles. The Regional Energy Strategy sets this out: the 42,547 GWh of energy currently delivered to vehicles in the region as petrol and diesel<sup>24</sup> is nearly equal to the amount of energy delivered through the entire gas network in the region and almost twice that delivered by the electricity system. The implications for local

energy infrastructure of shifting transport fuel use from petrol to electricity or gas are significant. As such, a lot of that demand will need to be met or otherwise eliminated by mass transit or active travel.

If this carries through, by the time we reach 2041, a majority of people will not own cars, with most car use taken up on an ad hoc basis through electric car clubs. All other journeys are completed by walking, cycling, scoots, and use of buses, Metro and trains.

EXAMPLE ACTIONS				
Using our industrial past to create a zero-carbon future				
First five years	Work with Government to improve National Planning Policy Framework	WMCA and Councils explore introduction of zero carbon standard for new builds	Regional Design Guide principles to be applied to new developments	Develop a regional investment plan for renewable heating and cooling
	Partner with Cemex and other industry partners to create low carbon cement supply chain	Develop other industrial symbiosis solutions for key infrastructure	'Sprint' bus rapid transit routes	Explore potential of fiscal levers to manage demand and invest in sustainable infrastructure
	New Metro Lines	Approve strategy for electric car charging infrastructure	Google partnership on Environmental Insights Explorer	Reallocate highway space to walking, cycling and mass transit
	Increased suburban rail and park and ride capacity at train stations	Evaluate the impact of potential bus regulation on climate impact	Accelerated transition of buses to low carbon, low pollution variants	Deliver first tranche of Better Streets Fund
Between five and fifteen years	Councils to use licensing to migrate all taxis to electric cars	Deliver at least one 'electric bus town' with Government investment	Use smart technology to help people save time and energy	Birmingham Airport commits to net zero carbon and is on track for 2041

24. Worth around £3.3bn per year

## Creating and connecting clean, sustainable places: the first five years

- **NPPF reform:** collaborate to reform the National Planning Policy Framework to ensure that planning authorities have a robust basis on which to demand zero carbon / carbon negative developments and to assist localities in improving transport and in planning their decentralised energy and waste systems.
- **Zero carbon homes standard:** explore introducing a zero carbon homes standard for all new builds – this can occur without a change to Building Regulations<sup>25</sup>. Collaborate with other regions to reduce ‘gaming’ of the changes by developers.
- **Design Charter to shape new neighbourhoods:** aim for the Design Charter, which provides guidance to developers building new homes with WMCA resources (including on low carbon construction, operation, and resilience), to be applied to all new developments.
- **Investment plan for renewable heating and cooling:** develop a joint regional investment plan for renewable heating and cooling, including any planned expansions of the region’s existing district heating networks and introduction of technologies like anaerobic digestion<sup>26</sup> (AD). The first investments should be signed off by the end of this period.
- **Decarbonise cement:** create a plan in conjunction with Cemex and other industry partners to replace all cement used in regional construction with low carbon alternatives.
- **Waste into infrastructure:** work with International Synergies and other industrial symbiosis experts to assess the potential in using locally produced industrial waste to create building and construction materials – for example, in creating bitumen surfaces for highways.
- **More green space:** collaborate to increase planning requirements for green space and energy efficiency.
- **Boost numbers of electric taxis:** use licensing to encourage take-up of electric taxis.
- **Reallocate parking spaces:** as pricing structures are updated, explore reallocating parking spaces to car shares and electric vehicles and reduce parking charges for both as an incentive.
- **New fiscal levers:** identify new revenue streams to invest in walking, cycling, and public transport.
- **Fewer parking spaces in new developments:** over the medium-term, ensure that parking spaces per dwelling is reduced across the area, but notably in city centres, where density is highest and existing public transport access is greatest.
- **A regional approach to ULEV:** approve electric vehicle strategy at WMCA Board in early 2020, which outlines a collective approach to installing charging infrastructure across the region.
- **Refresh Movement for Growth:** refresh of the West Midlands Movement for Growth transport strategy to further the detail and thought on how the transport network can help the region meet the climate challenge – both in terms of resilience and the overall carbon budget.
- **More space for walking and cycling:** continue reallocating road space to walking, cycling, and mass transit. Consider creating a regional body for walking and cycling so that investments made as part of Movement for Growth can be held accountable to the overall goal of achieving a modal shift that aligns to the climate challenge. We need to continue to create a ‘buzz’ around walking and cycling – telling stories which show how good life can be when you move around in this way.
- **More powers to invest for change:** assess the powers and investment that are needed at regional and local level to unlock necessary changes in the transport network. This could include analysis to assess whether bus regulation powers as outlined in the 2017 Bus Services Act will help to deliver a low carbon, well-used bus network relative to the status quo.

25. See <https://www.ukgbc.org/ukgbc-work/advancing-net-zero/>

26. AD comes in various forms, but in essence, turns putrescible waste (like food) into biogas, which can be used in gas-fired heating systems.

## Creating and connecting clean, sustainable places: **between five and fifteen years**

- **Net zero airport:** Birmingham Airport commits to reaching net zero, ideally at the same time as the wider region in 2041.
- **Smart places:** learning from the 5G testbed pilots and existing technology, we will deploy smart technology in a way that enables low carbon living whilst respecting people's rights.

# We will decouple prosperity from consumption of energy and resources

We will ensure that people can live good lives without doing irreparable harm to the environment. This is partly about only using low carbon energy but it is also about reducing, reusing, recycling and recovering waste – in our day-to-day lives, but also at work and in our industrial processes. It is also about how we source our food, and how we consume the goods and services that enhance our lives. As businesses, consumers and regulators make the shift to processes and lifestyles that regenerate the environment, boost adaptation and minimise harm, there are exciting business opportunities that we can benefit from.



27. See <https://www.ukgbc.org/news/government-confirms-local-authorities-can-set-energy-standards-beyond-part-l-in-nppf/>

28. AD comes in various forms, but in essence, turns putrescible waste (like food) into biogas, which can be used in gas-fired heating systems.

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# Work underway - setting the WMCA carbon budget

## Ensuring that balancing emissions is taken as seriously as balancing budgets

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The WMCA's 'carbon budget' – the maximum CO<sub>2</sub> associated with energy use in WMCA area – is tethered to the UK's Paris Agreement commitments. The latest scientific consensus on climate change in the IPCC Special Report on 1.5°C<sup>28</sup> is used as the starting point for setting sub-national carbon budgets that enable the UK to meet this commitment. Shipping and aviation are not included, as both are being dealt with in a separate, national carbon budget for those activities. Land use, land use change and forestry (LULUCF) should be seen as a separate piece of work, focused on increasing carbon sequestration from these sources.

Based on these parameters, the Tyndall Centre for Climate Change Research suggests that a budget of 126 million tonnes (MtCO<sub>2</sub>) for the years 2020 to 2100 should amount to a fair contribution. The zero carbon year (2041) is defined as the point at which WMCA's annual average CO<sub>2</sub> emissions fall below a threshold level of 0.9 MtCO<sub>2</sub> – over 96% lower than 2015 levels.

Given that WMCA used 21MtCO<sub>2</sub> in 2016, this will be a huge challenge – if we carried on emitting at that level, we would blow the entire budget in six years, and lock in 3-4 degrees of warming.

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28. See <https://www.ipcc.ch/sr15/>

## What does this look like?

### **We will use innovative financial products to unlock good outcomes**

Everything in this document will require investment – the estimate suggested as part of setting the WMCA Carbon Budget was 1-2 percent of GVA (roughly £2bn per year on average). How we create those investments matters: we want it to lower the cost of living, boost prosperity and to carry on recirculating through the places of the West Midlands.

Some of this will be about the levers of government: borrowing and taxation. But we can also work with financial institutions and investors to create products that unlock positive outcomes, whether it is a revolving loan for energy efficiency investment, a green bond to unlock sustainable urban drainage schemes or a co-operative share issue to deliver community-owned renewable energy system.

# Case study - Climeetrics

## A green rating for pension funds

Climeetrics provides an independent, holistic assessment of a pension fund's climate-related risks and opportunities. It looks inside each fund, measuring its exposure to climate risks and opportunities, as well as the fund's investment policy and the asset manager's public action on climate change.

Climeetrics ratings are free to search, providing investors with transparency on climate change-related risks when comparing funds. These sort of decision-making tools are invaluable in helping institutional investors avoid 'traps' like stranded assets – investments that need to be written down or written off because they are not consistent with the future needs of society.



# Looking to the future - Fewer flights

## Cleaner connectivity



The WMCA carbon budget does not include aviation. Nonetheless, it is useful to reflect on the tension between staying connected to the world around us and our climate change obligations. Globally, emissions from aviation can only grow by 25% if the sector is to deliver on the Paris Agreement – a challenge, given that most of the world’s population does not fly.

Facing this issue is likely to involve the following:

- Collective investment in international rail.
- Collective investment in low carbon flight.
- Frequent flyer levy: everyone gets one tax free return flight per year with a sliding levy scale for each subsequent flight. All returns to be invested into sustainable alternatives.

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## We will ensure that food is local, seasonal and with more plant-based options

We will create a region where it is easy to eat good food without adding to climate breakdown. This means eating meat like beef and lamb more sparingly and eating more seasonal food to ensure low food mileage and low production costs. Per person emissions associated with food are falling.

# Personal action - Becoming flexitarian

## More variety, not less

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Sometimes called ‘casual vegetarianism’, the spirit of flexitarian eating is one of inclusion: introducing more seasonal, plant-based options without completely eliminating meat. This has several advantages:

- A reduction in greenhouse gas emissions – as much as 52 percent, assuming everyone switched to a flexitarian diet<sup>29</sup>. Other research indicates that if every family in the UK swapped a red meat meal to a plant-based meal just once a week, the environmental impact would be the same as taking 16 million cars off the road<sup>30</sup>.
- Reducing demand for meat would reduce the need for intensive animal farming, which has a negative impact on the environment. However, sustainable cattle farming has a role to play in reducing soil erosion by locking in nutrients and sequestering carbon emissions.
- A healthy option with lower cholesterol and plenty of nutrition.
- It is more appealing to more people as it increases options for mealtimes. Furthermore, the meat eaten can be better quality, as people will have more budgetary headroom to eat meat that is organic and locally sourced.

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29. See <https://www.nature.com/articles/s41586-018-0594-0>

30. Research commissioned by The Meatless Farm Company, see <https://meatlessfarm.com/meatless-consumption-target/>

## We will ensure that there is no such thing as waste

Waste and pollution will be designed out of how we live our lives. We will keep products and materials in use, by reducing, reusing, and recycling the things we consume. We will see this as an opportunity to create new economic models, services and businesses, which will help us to achieve this.



Figure 7 – The waste hierarchy, indicating the order of preference for managing waste.

# Case study - The ReUsers

## Secondhand can be first choice

Located at Norris Way Household Recycling Centre in Sutton Coldfield, the ReUsers social enterprise (part of the Jericho Foundation) rescue unwanted items so that they can be resold to someone else at a fair price. They change their offer to meet local needs – for example, opening a Christmas shop to give people a cost-effective, sustainable alternative to buying new Christmas decorations.

This sort of enterprise can be scaled up, to offer people a different shopping experience. Looking to Sweden, the ReTuna shopping centre – located on the outskirts of the small city of Eskilstuna – sells only reused and sustainably produced items<sup>31</sup>.

31. See: <https://bit.ly/2NA7TM2>

# Case study - EBRI

## A regional centre for bioenergy expertise

The Energy and Bioproducts Research Institute (EBRI) at Aston University researches all aspects of bioenergy - an overview of which can be seen in Figure 8.

It acts as a focus for international activities on the scientific and technological aspects of biomass conversion and utilisation of products for renewable power, heat, transport fuels, hydrogen and chemicals. EBRI works to extract the maximum value from all types of biomass, including waste resources. It also furnishes students with the skills and competencies they need to put their academic work into practice.

<p><b>Anaerobic Digestion (AD)</b></p> <p>Optimising the AD process and utilising residues for further processing.</p>	<p><b>Algae Cultivation</b></p> <p>Exploring the exploitation of microalgae for waste remediation and bioenergy production.</p>	<p><b>Biochar</b></p> <p>Testing and analysis of biochar for enhancing poor and high-quality soils.</p>
<p><b>Bioenergy &amp; Bioproduct market opportunities</b></p> <p>Helping businesses develop new products and services from a wide range of waste materials.</p>	<p><b>Catalysis</b></p> <p>Nanostructured catalyst systems for synthesis of biofuels and chemicals.</p>	<p><b>Combined Heat and Power (CHP) engines</b></p> <p>Adaption of CHP engines (internal combustion engines) for bioenergy provision.</p>
<p><b>Feedstock investigation</b></p> <p>Testing and analysis of feedstocks for fuel production.</p>	<p><b>Gasification</b></p> <p>Research and technology demonstration for gasification applications.</p>	<p><b>Pyrolysis</b></p> <p>Research and technology demonstration for pyrolysis processes</p>
<p><b>Torrefaction</b></p> <p>Thermal pre-treatment of biomass to upgrade thermal-chemical properties.</p>	<p><b>Vehicle-to-Grid</b></p> <p>New communication and control platform for Vehicle-to-Grid/Building (V2G/V2B) systems.</p>	

Figure 8 - An overview of EBRI's work

EXAMPLE ACTIONS				
Changing our economy without leaving any of our communities behind				
First five years	Roll out citizen behaviour change campaigns with partners (energy, waste, travel)	Work with other CAs to create climate change devolution framework	Develop a green bond to stimulate investment in low carbon infrastructure	Public sector work to procure food with a smaller climate impact
	Ensure climate smart nutrition is embedded in the school curriculum	Extend WMCA commitment to eliminate single-use plastics from all activities by 2020	NHS regionally to create a climate action plan and target for its operations	WMCA to launch the first Clean Growth Challenge - demand-led innovation
Between five and fifteen years	Divest the Local Government Pension Fund from fossil fuels, and into climate smart investment	Ensure that large infrastructure or service investments balance a carbon budget	Re-fresh the region's SEP incorporating growth goals in line with climate ambitions	
The last five years	No putrescible waste to be sent to landfill or incinerated			

## Decoupling prosperity from consumption: the first five years

- **Balance carbon budgets on long term investments:** collaborate so that large investments balance a carbon budget without offshoring emissions. This would signal serious intent.
- **Devolution framework for climate:** collaborate with the other combined authorities to develop a devolution framework and series of deals which relate to meeting the climate challenge. This should include new powers to generate revenue and to regulate.
- **Create green financial products:** work with financial institutions to design financial products like a 'green bond', to stimulate investment in the region and to boost local businesses. This could position the region to take real commercial advantage of the transition to low carbon economy that we will need to collectively embark on.
- **Factor climate impact into procurement:** all catering contracts to take into account climate impact, including supply chain and freight. Collaborate to learn from what is easiest to measure and to build a supply chain of trusted local suppliers.
- **Embed climate smart eating into the curriculum:** ensure that catering offer is complemented by embedding healthy eating in the curriculum. This can be as part of cooking classes that will also ensure children recognise a wide variety of seasonal foods.
- **Eliminate single-use plastics:** work to eliminate single-use plastics from all activities. This is consistent with a pledge made by the Mayor in September 2019<sup>32</sup>, which promises that single-use plastics will be eliminated from all WMCA/TfWM operations by the end of 2020.

32. See <https://www.wmca.org.uk/news/mayor-commits-west-midlands-combined-authority-to-ditching-single-use-plastics/>

- **Build a case for the NHS contribution:** to develop a plan for its contribution to various elements of the climate challenge: including single-use plastics, catering, waste, transport and estate. To be developed via collaboration between the integrated care systems (ICSs) of the WMCA 3-LEP area.

## Decoupling prosperity from consumption: the last five years

- **No waste:** no putrescible waste is sent to landfill or incinerated – it will be significantly reduced, with the remainder used in compost or anaerobic digestion.

## Decoupling prosperity from consumption: between five and fifteen years

- **Divestment of WM LGPF from fossil fuels:** divest the West Midlands Local Government Pension Fund from fossil fuels and invest in renewable energy.

# Next steps: write our story

This paper is a first attempt at a WMCA position of what actions need to be taken in order to meet the climate challenge without leaving anyone behind. It is the storyboard, waiting for people across this region to bring it to life. Some of the actions are about doing things we already do differently. Some are already being developed and delivered as part of business as usual. Others will require new powers and investment.

Either way, we need to turn to the region's people, businesses, Councils and community organisations, to give us a sense of whether we are in the right place. This will be part of an overarching campaign, 'Let's Talk 2041', which everyone can participate in, championed by the Mayor Andy Street, the Environment Portfolio Holder, Councillor Ian Courts, and the wider leadership of the WMCA.

To get you started, here are some key questions – but your responses can cover anything relevant:

1. **Is anything missing:** do the action areas provide the right impetus for change? Which policies, investments and changes do you think are the most important?
2. **Barriers and opportunities:** many people, places and businesses in this region have been pushing for action on climate change for a long time now, or have been quietly

and diligently delivering that change. What do you see as the main barriers to meeting the climate change challenge, and which opportunities are too good to miss?

3. **Accountability and governance:** how do we ensure that we as a region do what is necessary to avert climate breakdown? Should WMCA and local councils have oversight of this, or do we need to create new partnerships?
4. **Citizen involvement:** people exercise their democratic rights at the ballot box, but there are many other ways for that to happen. Should we create a citizen's assembly or similar, to shape and drive this work? Or are there better ways to involve people?

The responses to this paper, and Let's Talk 2041 will help us to create an investment programme to accompany this report. Now is the time to help us get this right.

Email your thoughts, or offer to host a discussion with your organisation, place, or network: [WM2041@wmca.org.uk](mailto:WM2041@wmca.org.uk). WMCA staff will provide you with a presentation and facilitation notes and will attend where possible.

# Appendix 1: Existing policies and asks

Existing	Asks
Investment in Metro extension to Centenary Square, Wolverhampton City Centre and between Wednesbury and Brierley Hill.	Investment in further extensions of the Metro, including from Birmingham to the HS2 interchange at UK Central.
Pledge to end the use of single-use plastics by WMCA.	Government backing for energy and clean air-themed demand-led innovation challenges.
Increased suburban rail capacity serving central Birmingham with 20,000 extra morning rush hour seats and more new carriages.	Investment in our strategic cycle networks and high-profile engagement and behaviour change programmes inspired by Greater Manchester's Beelines initiative
New suburban rail stations including stations at Moseley, Kings Heath, Hazelwell, Fort Parkway, Castle Bromwich, Darlaston and Willenhall.	Deliver the regions mass transit network - new Tram and Bus Rapid Transit routes by 2026:
Increased park and ride capacity for the West Midlands rail network, including expansion at Tipton, Sandwell and Dudley, Whitlocks End and Longbridge.	Introducing new cleaner rail rolling stock through the West Midlands rail franchise.
Three new Bus Rapid Transit routes ('Sprint') by 2022: <ul style="list-style-type: none"> <li>• Birmingham – Perry Barr –Walsall;</li> <li>• Birmingham - Solihull/Birmingham Airport; and</li> <li>• Birmingham – Langley/Peddimore – Sutton Coldfield.</li> </ul>	Partnership with Google to extend its Environmental Insights Explorer to the West Midlands.
Working with National Express and other operators to expand "low fare zones" to encourage increased bus ridership.	Seeking ways to reduce air pollution from trains stopping and idling at central Birmingham stations, including making the case for national rail services stopping at central Birmingham to be run with non-diesel rolling stock.
Core bus corridor and central Birmingham bus priority improvements.	Collective asks with other Metro Mayors for various 'deals' relating to mass transit, clean air, and energy
Upgrading bus fleet through retrofitting existing buses, new Euro VI buses and hydrogen powered buses, overseen through local Advanced Quality Partnership Schemes and the Bus Alliance.	
UKBIC (Battery Industrialisation Centre) in Coventry.	



**West Midlands  
Combined Authority**

January 2020

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