

# A toolkit for city regions and local authorities



## Climate action co-benefits

Cutting carbon and improving people's lives

## Guide to this toolkit

This toolkit is primarily intended for use by local authority officers when briefing elected members, mayors and senior managers. Each of the co-benefits sections includes facts and figures, links to data for local areas, the business case for taking action, opportunities for action and inspirational examples of successful initiatives from around the country. Case studies are shown in boxes with Ashden Award winning organisations indicated via the Ashden logo.



These can be used as the building blocks for making the case for action in your area; the intention is that users can pick and choose the messages and examples that will resonate in their areas.

The links to films in this toolkit are designed to bring to life some of the challenges that people in towns and cities face. The aim is to facilitate conversations around the co-benefits of climate action, ‘multi solving’ climate and social issues.

## Acknowledgements

This toolkit has been produced with support from CAG Consultants (Denny Gray) and with input from Dr Neil Jennings, Sarah Woods, Paul Bourgeois, Leanne Wilson, Jane Wildblood and Simon Slater. We would like to thank all of the Ashden winners who have allowed us to feature their work in the toolkit.

Cover image produced by  
[www.morethanminutes.co.uk](http://www.morethanminutes.co.uk)

## Contents

<b>Introduction</b>	<b>3</b>
<b>Health and wellbeing</b>	<b>13</b>
<b>Economic opportunity and job creation</b>	<b>28</b>
<b>Resilience</b>	<b>47</b>
<b>Equity and social cohesion</b>	<b>64</b>
<b>Useful resources</b>	<b>80</b>

## Ashden’s work on co-benefits

Ashden is working with UK cities to help them realise their sustainability ambitions. Our vision is of healthy, liveable cities where people want to live and work. Through our Liveable Cities programme, we created the Sustainable City Region Network – to help sustainability leaders to realise this vision and tackle common challenges. Realising the wider benefits of climate change such as better homes, more money in local economies, clean air, healthier travel options, and new employment opportunities is essential to connect climate policy to the needs of all citizens, demonstrating that action to combat climate change can improve lives, not diminish them. We are working with city regions to develop policy that delivers these wider benefits, securing a Just Transition. Find out more about our work: <https://www.ashden.org/programmes/liveable-cities-programme>

# A toolkit for city regions and local authorities:

## Chapter 1: Introduction



**Climate action co-benefits**  
Cutting carbon and improving people's lives

## Foreword

If we are to stay within 1.5°C of warming and avoid catastrophic climate change, we need to move with a sense of urgency that we have not seen since the second world-war. But this cannot just be imposed on citizens and communities. In order to create the consensus that local, regional and national governments need and the funds to deliver the work, we have to take citizens with us.

Protests by Extinction Rebellion, the remarkable wisdom of Greta Thunberg and the powerful film making of David Attenborough have got citizens thinking about climate change and its implications. However, much of the discussion is still about giving things up. At Ashden we have a different view.

By engaging people through structures like citizens' panels and connecting climate policy to the needs of everyone, we can demonstrate that the consequences of climate action improve lives, not diminish them. Better jobs, more money in local economies, clean air, healthier travel options, green spaces, and warm and cheap-to-heat homes – all these engage peoples' values.

By looking at these wider benefits we can solve climate and social issues at the same time and use housing, transport, infrastructure or economic development budgets in a smarter way that delivers urgent climate action. Reducing levels of air pollution, for example will massively reduce the costs of NHS treatment and in turn free-up money to be spent on home energy efficiency improvements or sustainable green transport.

Engaging the population in this way shows them that responding to climate change makes their lives better, and in turn, this gives governments, be they local, regional or national, the agency to implement more radical carbon-cutting measures and the funds to do so.

This co-benefits approach is at the heart of Ashden's liveable cities programme and at the heart of this toolkit.

We need to re-frame climate change to show how it improves quality of life for all of us. There is no better time than now.

## Local authority action on climate change

Local authorities are well placed to drive and influence action on climate change through the services they deliver, their regulatory and strategic functions, and their roles as community leaders, major employers, large-scale procurers and social landlords.

Action on climate change can deliver many local benefits, including lower energy bills, economic

regeneration and creation of local jobs, reductions in fuel poverty and improved air quality.

Furthermore, increasing resilience to climate change risks can result in avoided costs from flood damage to buildings, infrastructure and services, enhanced green spaces and improved health.

**”** *Our vision is of healthy, liveable cities where people want to live and work. Cities that are unpolluted, well-planned, powered by sustainable energy and clean technologies. And cities where a transition to a low carbon economy protects the wellbeing of all citizens.*

Simon Brammer, Head of Cities, Ashden

## The current situation

At present in the UK:

- Around 40,000 people die annually as a result of human-made air pollution; the majority of these will live in urban areas<sup>1</sup>.
- Only half of the UK population has easy access to a green space<sup>2</sup>.
- 30% of the UK's children are living in poverty, rising to almost half of children in some urban constituencies (including constituencies in London, Birmingham and Manchester).

As the world seeks to make more efficient use of its energy resources, increase energy security and meet global climate targets, it is essential that local authorities take a leading role in the energy transition.

There are enormous opportunities from doing so. Low carbon and renewable energy activities generated £44.5 billion turnover in 2017, directly employing 209,500 people (full-time equivalents)<sup>3</sup>. There are opportunities to avoid future costs by improving the resilience of council services to withstand the future climate, which is forecast to comprise hotter, drier summers and greater risk of flooding. Recent winter flooding caused damage to infrastructure such as bridges, roads and drains in excess of £250 million<sup>4</sup>.

With energy bills on the increase, exposure to fuel poverty is rising; health impacts of people living in cold homes costs the NHS around £1.4 billion a year. Tackling the causes of fuel poverty, rather than the symptoms, will result in this bill being reduced, making economic sense as well as increasing wellbeing.

The Climate Change Act requires the UK to reduce its emissions by at least 80% by 2050. This means greenhouse gas emissions falling from around 14 tonnes per person in 1990 to around two tonnes per person in 2050. And in October 2018, the world's leading climate scientists warned that urgent and unprecedented action was required to limit global warming to a maximum of 1.5°C, beyond which even half a degree will significantly worsen the risks of drought, floods, extreme heat and poverty for hundreds of millions of people. In May 2019, the Committee on Climate Change recommended a new emissions target for the UK: net-zero greenhouse gases by 2050<sup>5</sup>.



## The co-benefits of action on climate change

Taking action on climate change is beneficial in many ways:

- Health and wellbeing are improved as a result of improved air quality through reduced use of combustion engine vehicles, increased activity from people walking or cycling more, as well as through reduced fuel poverty from more energy efficient homes.
- Action on climate change can improve equity and social cohesion through focusing on the most vulnerable in society, such as action to alleviate fuel poverty.

- Investing in initiatives to reduce carbon emissions can create a wealth of economic opportunities and jobs in the low carbon economy.
- Action to reduce carbon emissions can also increase the resilience of cities and their communities to future changes in energy prices and energy systems, as well as potentially increasing resilience of communities and infrastructure to the impacts of climate change.



A video providing an introduction to the concept of climate action co-benefits can be found [here](#).

## Multiple co-benefits from climate action – some examples

	Carbon	Health	Economy	Equity	Resilience
Action					
<b>Insulating homes</b> 	Cuts energy demand and cuts carbon emissions	Reduces fuel poverty as people stay warmer	Creates jobs for local people, and people save money on their energy bills which they may spend locally	Increased access to affordable warmth	Households are better placed to withstand future energy price rises as well as overheating during heatwaves
<b>Car sharing</b> 	Reduced fuel consumption cuts carbon emissions	Reduced NOx improves air quality. Improved wellbeing through social interaction	People save money on their fuel, which they may spend locally. People can make journeys (e.g. to work) that they may not otherwise be able to do. Reduced congestion	Brings people together; can reduce isolation and loneliness	Increased resilience to impact of future fuel price rises
<b>Cycling</b> 	Reduced fuel consumption cuts carbon emissions	Reduced NOx from combustion engines improves air quality. Increased activity increases health	Money saved on petrol. Reduced congestion	Increased connections to local community through cycling initiatives	Resilience to future increase fuel costs

“Cities and local authorities are well placed to understand the needs and opportunities in their local area, although there are questions over whether they have sufficient resources to contribute strongly to reducing emissions. They have important roles on transport planning, including providing high-quality infrastructure for walking and cycling, provision of charging infrastructure for electric vehicles, and ensuring that new housing developments are designed for access to public transport. They can improve health outcomes for people who live and work in the area by implementing clean-air zones that discourage use of polluting vehicles and other technologies<sup>6</sup>.

Committee on Climate Change

## The potential for local authorities to take action on climate change

Local authorities are directly accountable to their constituents for their decisions and are better placed to take swift action than national officials. Cities progressing devolution deals can also set the agenda both for their communities and for national government.

Local authorities have powers in relation to planning, transport and skills; these vary depending on the type of authority (see table below). In England, there are ten combined authorities, of which seven have an elected metro mayor and devolution deal. Separate to these, London also has an elected mayor and a combined authority in the form of the Greater London Authority (GLA).



In addition to their formal powers, local leaders can have enormous influence, using their democratic legitimacy, leadership skills and negotiation to achieve outcomes beyond what can be achieved solely through their own legal powers and duties.

The Committee on Climate Change Net Zero report recognises the role of cities and local authorities in achieving net zero.

## Climate emergencies

The early part of 2019 saw unprecedented demands for increased government action on climate change. Protests by Extinction Rebellion, the remarkable wisdom of youth activist Greta Thunberg and the powerful film making of Sir David Attenborough have all got citizens thinking about climate change and its implications. Linked to this, a wide number of local authorities in the UK have declared their own ‘climate emergencies’<sup>7</sup>. These are about reducing carbon emissions at the local level and also putting more pressure on national government to enable and require rapid decarbonisation.

## Relevant functions of local authorities

Tier of government	Functions
<b>District Council</b>	<ul style="list-style-type: none"> <li>• Building regulations</li> <li>• Council tax and business rates</li> <li>• Economic development</li> <li>• Environmental health</li> <li>• Housing</li> <li>• Parking</li> <li>• Planning</li> <li>• Sports centres, parks, playing fields</li> <li>• Waste collection and recycling</li> </ul>
<b>County Council</b>	<ul style="list-style-type: none"> <li>• Economic development</li> <li>• Education</li> <li>• Emergency planning</li> <li>• Highways, street lighting, traffic management</li> <li>• Parking</li> <li>• Passenger transport (buses) and transport planning</li> <li>• Planning</li> <li>• Public health</li> <li>• Social services</li> <li>• Waste disposal</li> <li>• Trading standards</li> </ul>
<b>Unitary and Metropolitan</b>	All of the above.
<b>Combined Authority</b>	<p>Varies depending on the devolution deal but may include:</p> <ul style="list-style-type: none"> <li>• Employment and business support.</li> <li>• Further education and skills (including full devolution of the adult skills budget).</li> <li>• Spatial planning, land and housing, including the power to create a spatial plan for the area.</li> <li>• Transport, including powers to introduce bus franchising.</li> <li>• Wider public services including public health responsibilities.</li> </ul>

## Ashden's work on co-benefits



Ashden supports and promotes sustainable energy projects from around the world. At the heart of our work is our annual awards scheme that rewards and raises the profile of the very best sustainable energy pioneers.

Ashden is working with UK cities to help them realise their sustainability ambitions. Our vision is of healthy, liveable cities where people want to live and work.

## Enabling a just transition

Recently we tested an approach to create policy initiatives that have multiple social outcomes through a one-day event in Birmingham that brought together a diverse range of attendees from city regions and local authorities, the NHS, community groups, Ashden Award winners and policy organisations. Drawing on the lived experience of Birmingham citizens, we gained insight into the pressures on vulnerable people and ways in which taking a low carbon approach

to challenges can offer multiple benefits. The gap in action we identified inspired us to design a programme of work to help embed a new holistic approach to climate policy, one that concurrently tackles inequality and enables a Just Transition.

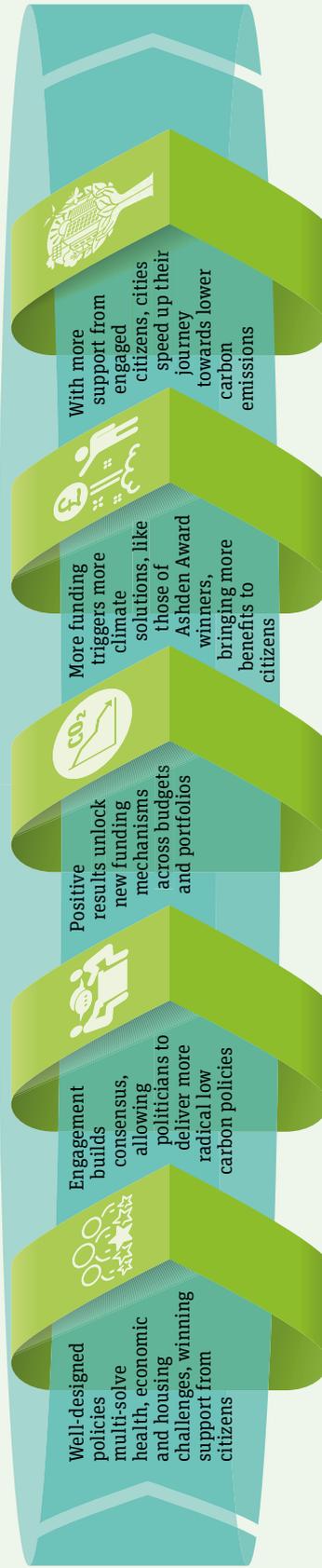
Our theory of change is shown below.



An animation of this diagram can be found [here](#).

## How does citizen engagement drive action on climate change?

To avoid catastrophic climate change, we must radically cut carbon emissions – 80% of which are created by cities. Convincing residents they can benefit from climate action is key to creating change.





## Our city region network

Through our Liveable Cities programme, we created the Sustainable City Region network – to help sustainability leaders to realise this vision and tackle common challenges. Network participants told us that a better understanding of the co-benefits of a low carbon economy would enable them to make a more convincing case for climate action to city leaders, who face a range of competing priorities. So we have created this toolkit for local and combined authorities, particularly those that have declared a climate emergency.

We have also been working with the Grantham Institute who recently published a paper on the co-benefits of climate mitigation in the UK<sup>8</sup>. Through our work with city regions we were able to contribute to the paper's recommendations for policy makers.



## The Ashden Awards process discovers city-wide low carbon solutions

Ashden winners represent pieces of the jigsaw puzzle of solutions that are required to decarbonise our cities. Our work with cities is identifying missing pieces in the jigsaw puzzle – which we can help find through our Awards programme. We have over 90 winners in the UK who we support, helping them to scale up and replicate their work.

- <sup>1</sup> Public Health England, “Associations of long-term average concentrations of nitrogen dioxide with mortality (2018): COMEAP summary”, August 2018. Available at: <https://www.gov.uk/government/publications/nitrogen-dioxide-effects-on-mortality/associations-of-long-term-average-concentrations-of-nitrogen-dioxide-with-mortality-2018-comeap-summary> [Accessed 8 May 2019]
- <sup>2</sup> Defined as being within 300m.
- <sup>3</sup> ONS, “UK environmental accounts: Low carbon and renewable energy economy survey, final estimates: 2017”, January 2019. Available at: <https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2017> [Accessed 9 May 2019]
- <sup>4</sup> BBC, “Winter floods cost councils £250m, says LGA”, March 2016. Available at: <https://www.bbc.co.uk/news/uk-35891857> [Accessed 8 May 2019]
- <sup>5</sup> See: <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>
- <sup>6</sup> Commission on Climate Change, 2019, Net Zero – the UK’s contribution to stopping global warming <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>
- <sup>7</sup> See: [https://www.campaigncc.org/councils\\_climate\\_emergency](https://www.campaigncc.org/councils_climate_emergency)
- <sup>8</sup> See: <https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/briefing-papers/Co-benefits-of-climate-change-mitigation-in-the-UK.pdf>

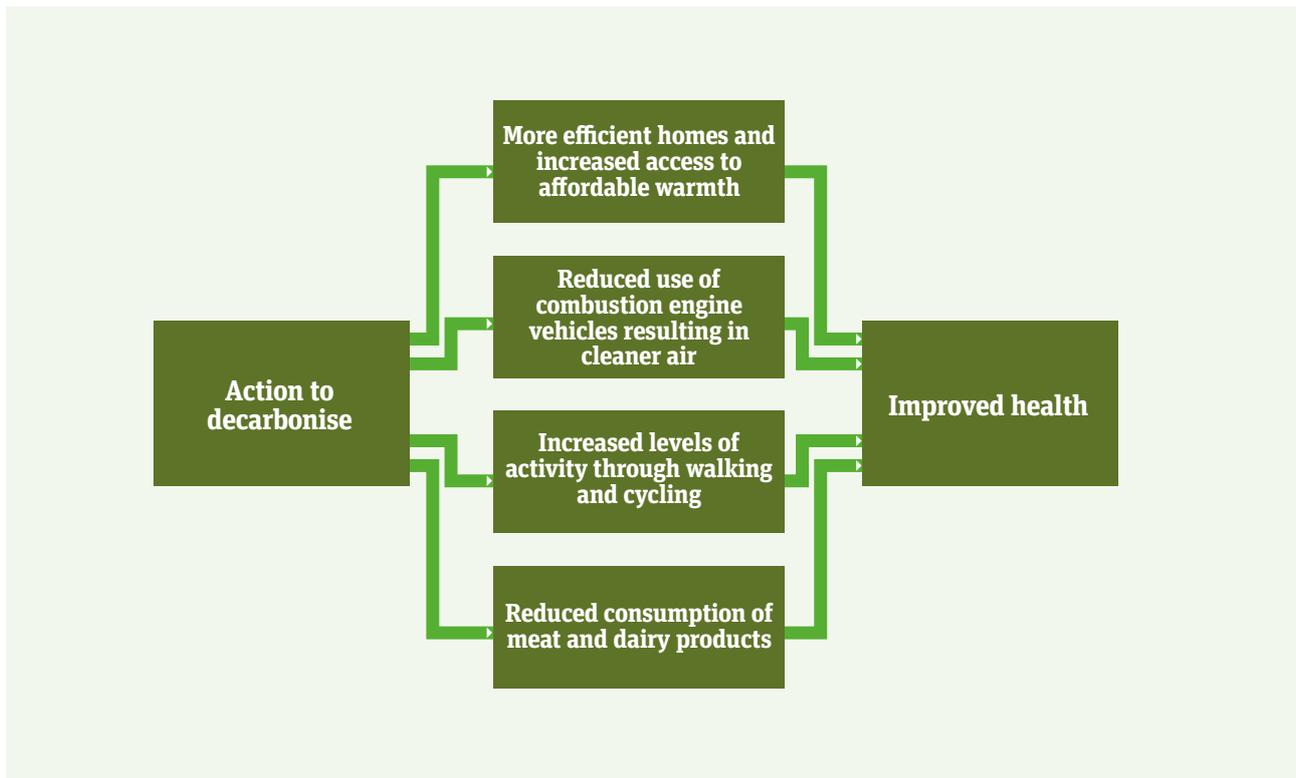
# A toolkit for city regions and local authorities:

## Chapter 2: Health and wellbeing



**Climate action co-benefits**  
Cutting carbon and improving people's lives

## Climate action co-benefits – health and wellbeing



### Climate action and health – key facts

- Particulate matter and nitrous oxides contribute to around 40,000 air pollution-related deaths per year in the UK<sup>1</sup>.
- Active travel promotes good health: an increase in physical activity in the UK has been estimated to generate a potential saving to the NHS of £17 billion within 20 years<sup>2</sup>.
- The cost of cold homes to the NHS is estimated at £2.5 billion/year<sup>3</sup>.
- Those living closer to green space in urban areas have been found to experience lower rates of anxiety<sup>4</sup>.
- Extreme weather events, such as heatwaves and flooding, have significant health impacts; UK heatwaves in summer 2016 resulted in 908 excess deaths<sup>5</sup>.
- If the average dietary intake in the UK complied with the recommendations of the World Health Organisation, a reduction in greenhouse gas emissions of 17% could be achieved whilst increasing average life expectancy by over 8 months<sup>6</sup>.
- Research commissioned by the Climate Change Committee found that the health benefits of reduced car travel (and corresponding increase in walking and cycling), uptake of low carbon vehicles and a shift towards less meat-intensive diets could generate annual net benefits of up to 0.6% of GDP<sup>7</sup>.

## Accessing facts that relate to your area

Topic	Source	Description	Link
<b>Travel</b>	Gov.uk – National Travel Survey and Active Lives Survey	National walking and cycling statistics, including local authority-level data	<a href="https://www.gov.uk/government/collections/walking-and-cycling-statistics">https://www.gov.uk/government/collections/walking-and-cycling-statistics</a>
<b>Air quality</b>	UK Air: Air Information Resource	A library of data on air quality including local air pollution forecasts and modelled data	<a href="https://uk-air.defra.gov.uk">https://uk-air.defra.gov.uk</a>
	London Atmospheric Emissions Inventory (LAEI) 2013	Borough-level emissions and concentrations data	<a href="https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013">https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013</a>
<b>Fuel poverty</b>	Fuel poverty sub-regional statistics	Includes local authority-level data on the number and proportion of households in fuel poverty	<a href="https://www.gov.uk/government/collections/fuel-poverty-sub-regional-statistics">https://www.gov.uk/government/collections/fuel-poverty-sub-regional-statistics</a>
<b>Excess winter mortality</b>	ONS – Excess winter mortality in England and Wales	Excess winter mortality figures by local authority and other demographics	<a href="https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/excesswintermortalityinenglandandwales/referencetables">https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/excesswintermortalityinenglandandwales/referencetables</a>
<b>Green space</b>	Ordnance Survey Green Space Map	Depicts the location and extent of spaces such as parks and sports facilities that are likely to be accessible to the public and, where appropriate, their access points	<a href="https://data.gov.uk/dataset/5d009d8a-702b-4a88-bf71-d4d6df87df53/os-open-greenspace">https://data.gov.uk/dataset/5d009d8a-702b-4a88-bf71-d4d6df87df53/os-open-greenspace</a>
<b>Flood risk</b>	Flood risk map	Map showing degree of flood risk (from rivers and sea, and from surface water) by place or postcode	<a href="https://flood-warning-information.service.gov.uk/long-term-flood-risk/map">https://flood-warning-information.service.gov.uk/long-term-flood-risk/map</a>

## Why it matters

Taking action on climate change can have substantial benefits for public health and wellbeing:

- Decarbonising the transport sector has the potential to make considerable improvements to air quality and public health;
- Improving the energy efficiency of homes can help to alleviate fuel poverty;
- Access to good quality green space and nature is a significant contributory factor for mental and physical wellbeing, particularly in urban areas;
- Changing weather patterns, more frequent extreme weather episodes and rising temperatures have direct implications on our health and pose challenges to the way in which the public health and social care systems operate.

## The business case for action; what difference can taking action make?

### Health, travel and air quality



A video telling the story of someone whose health is affected by poor air quality can be found [here](#).

Decarbonising the transport sector by promoting active forms of travel such as walking and cycling, making vehicles more fuel efficient and moving from petrol and diesel to electric or hydrogen-powered vehicles, has the potential to make considerable improvements to air quality across the UK, improve physical and mental health, and reduce the strain on the NHS.

- More than 40 towns and cities in the UK reach or exceed air pollution limits<sup>8</sup> with poor air quality linked to around 40,000 deaths per year in the UK<sup>9</sup>.
- The economic cost to the UK economy of premature deaths from air pollution is approximately £54 billion a year<sup>10</sup>.

- It is estimated that between 2017 and 2035 there will be approximately 2.5 million air pollution related cases of disease. The cumulative cost of this to the NHS and social care is predicted to be £18.57 billion<sup>11</sup>.
- 60% of deaths related to the combustion of fossil fuels are caused by the transport sector<sup>12</sup>.
- People's levels of physical activity can be increased through facilitating active travel; increased physical activity could potentially save the NHS £17 billion within 20 years by reducing the prevalence of type-2 diabetes, dementia, heart disease, cerebrovascular disease, and cancer<sup>13</sup>.

Action to decarbonise travel can also address health inequalities. Air pollution levels in the UK have been shown to have strong associations with deprivation. Those who live in low-income areas are the most affected by air pollution and yet are often those least responsible for producing it<sup>14</sup>.



### The Active Wellbeing Society

The Active Wellbeing Society (TAWS)<sup>15</sup> runs programmes to increase physical activity in the Midlands and beyond. Originally part of Birmingham City Council, TAWS now operates as a separate community benefit society.

Their Big Birmingham Bikes<sup>16</sup> scheme, which won an Ashden Award in 2017, has provided thousands of free bikes for adults and children living in high areas of deprivation, where sedentary lifestyles can be more common. For communities where cycling is not widespread, and where cost is often a prohibitive barrier, free cycle training gives people the confidence to go out and cycle safely, especially if others from similar backgrounds are joining in too. One unique aspect of the programme is the GPS tracking of cyclists (with permission given by participants). The tracking data shows thousands of bike recipients cycling at least 30 minutes a week, with hundreds cycling for 30 minutes at least five times per week. Their latest initiative is funded by the National Lottery/Sport England.



## Health and housing

Homes account for 22% of the UK's carbon emissions. Poor energy efficiency in housing has a direct effect on the physical and mental health of those living in the worst quality housing. Improving the energy efficiency of the UK housing stock provides an opportunity to reduce costs to the NHS, tackle inequality and improve the productivity of the UK workforce.

- The cost to the NHS of ill health from cold homes is estimated at £2.5 billion/year<sup>17</sup>.
- Children living in inadequately heated households are more than twice as likely to suffer from conditions such as asthma and bronchitis than those living in warm homes<sup>18</sup>.
- These conditions are exacerbated or brought on by exposure to mould and dampness that are more likely to be present in cold homes<sup>19</sup>.
- In the 2016/17 winter period, there were an estimated 34,300 excess winter deaths, a large share of which were attributable to living in a cold home<sup>20</sup>.
- Individuals living in homes with a bedroom temperature below 15°C are 50% more likely to suffer from mental health problems compared to those whose bedrooms are heated to 21°C<sup>21</sup>.
- The detrimental physical and mental health effects of inefficient housing also result in economic losses through missed work associated with cold-related illnesses, and impacts on productivity and educational attainment. The Healthy Homes Barometer estimates that minor illnesses such as coughs, colds, flu and other illnesses can be attributed to 27 million lost working days a year in the UK, affecting morale and productivity. The direct cost to the UK economy due to these absences was estimated at £1.8 billion in 2013<sup>22</sup>.



### Oldham warm homes

The Warm Homes Oldham scheme was set up by Oldham Council, NHS Oldham Clinical Commissioning Group and Oldham Housing Investment Partnership (OHIP) in 2013. It offers advice, support and energy saving measures to residents in fuel poverty. Sheffield Hallam University have evaluated this programme, considering savings to the NHS as well as wider economic benefits, using self-reported health outcomes. An investment of £250,000 per year from Oldham CCG resulted in a monetary benefit from an increase of Quality Adjusted Life Years (QALYs) of between £399,000 and £793,000 depending on the method used. The study reported £178,000 of extra GDP due to higher employment rates, £37,700 of extra GDP due to reductions in sickness absence, and £137,300 of reductions in benefits claims<sup>23</sup>.



A video telling the story of someone suffering the impacts of fuel poverty can be found [here](#).

### Liverpool healthy homes

Liverpool City Council have been running their Healthy Homes programme since 2010 and targets the private rented sector. Over 25,000 priority homes have been surveyed with 'cold home hazards' removed in over 1000 homes. The Healthy Homes team works in partnership with Citizens Advice Bureaux at 39 health centres to refer residents. The programme cost was initially £1.3 million per year but since 2013 the budget runs at £650,000 per year. The Building Research Establishment evaluated the programme and estimated that the programme could save the NHS and wider society £55 million over 10 years. Details are included in NICE's shared learning database<sup>24</sup>.



## SHINE – lessons from a successful fuel poverty scheme

Ashden award winner, SHINE (Seasonal Health Intervention Network), based in Islington, works with over 80 partners including GP surgeries, health visitors, and housing and community organisations to refer vulnerable people for energy efficiency interventions and advice. John Kolm-Murray, who set up SHINE and now leads on fuel poverty for the GLA, offers the following advice for making the most of health co-benefits:

- Engage with the right health professionals – specialists in respiratory disease and mental health are most likely to see benefits; there is less evidence for impact on cardio-vascular conditions.
- Guarantee delivery of interventions – if a GP refers a patient for a hip replacement, they know that it will happen eventually. But if a new boiler is prescribed but the energy company paying for interventions has hit their ‘boiler cap’, then there is no treatment, and trust between health professionals and energy officers can be lost. So understand what you can definitely deliver and provide regular feedback to referrers on outcomes.
- Ensure ventilation as well as insulation – otherwise health gains from warmer homes may be lost due to poor air quality. The GLA has put forward extra money for ventilation since this is not something that can be funded through ECO (the Energy Company Obligation)<sup>25</sup>.
- Learn the language of health professionals – understand what the clinical priorities and targets are for your local CCGs and other health professionals and align the benefits from your programme to those.
- Find a champion – health professionals are more likely to be persuaded by other health professionals.





## Cosy homes in Lancashire

Cosy Homes in Lancashire (CHiL) won an Ashden Award in 2016. Lancashire's Public Health directors recognised the effect of cold homes on people's health and, in 2014, helped fund the creation of CHiL, a partnership between 14 local authorities in the county, with the goal of improving the energy efficiency of privately owned and privately rented homes. By pooling the members' resources, CHiL has been able to improve domestic energy efficiency despite government programmes such as the Energy Company Obligation (ECO) being scaled back. Thousands of residents have benefited from warmer homes and have reported improvements in both physical and mental health<sup>26</sup>.

### Michael's story

Michael, aged 59, is a former lorry driver who has lived in Preston for most of his life. He lived alone in a house with no central heating, with a single gas fire to keep him warm. Michael's mental health was poor and he says he had a fixation with "building an MDF snow scene comprising of wolves and polar bears and putting up a tent with a sleeping bag to keep warm". He also had vitiligo and regular chest infections in winter. CHiL installed a new boiler and cavity wall insulation in Michael's home. After the work, Michael said, "Since I've had heat, I keep my home at 20 degrees. My mental state has changed which is a surprise. I had formed an addiction to gambling and that has fallen away. I no longer have a chest infection and my vitiligo has started to fill in."



## Green space

Parks and public gardens – as well as ‘blue spaces’ such as rivers and lakes - are associated with health and wellbeing at the community level, including satisfaction with ‘place’, increased social cohesion and interaction, increases in volunteering, and opportunities for more creative ‘play’ among children, as well as better educational performance.

- If everyone had access to sufficient green space, the benefits associated with increased physical activity could save the health system £2.1 billion per year<sup>27</sup>.
- Proximity to green space also has mental health benefits. Those living closer to green space in urban areas have been found to experience lower rates of anxiety or mood disorder treatment<sup>28</sup>, while studies have shown a link between access to green space and reduced levels of stress<sup>29</sup>.

Green spaces also help to regulate temperature and water flow, reduce noise and air pollution, and can also reduce the energy consumption of buildings. The integration of green space into urban areas can play an important role in helping to reduce extremes of temperature and associated admissions to the NHS, while simultaneously reducing carbon emissions.



## Newcastle City Council's Green Infrastructure Delivery Framework

Newcastle City Council published a detailed Green Infrastructure Delivery Framework in December 2018. Newcastle was a demonstration City for the Blue Green Cities Research Consortium, leading research into cutting edge techniques for advancing Blue-Green approaches to combat flood risk (i.e. natural flood risk management). The Framework builds on this work, identifying co-benefits of green infrastructure including mental and physical health improvements.

A green infrastructure steering group has been established with representatives from across the council, planning, sport and leisure, the Lead Local Flood Authority, and Transport. A detailed delivery and monitoring plan are included to ensure that these co-benefits are delivered<sup>30</sup>.

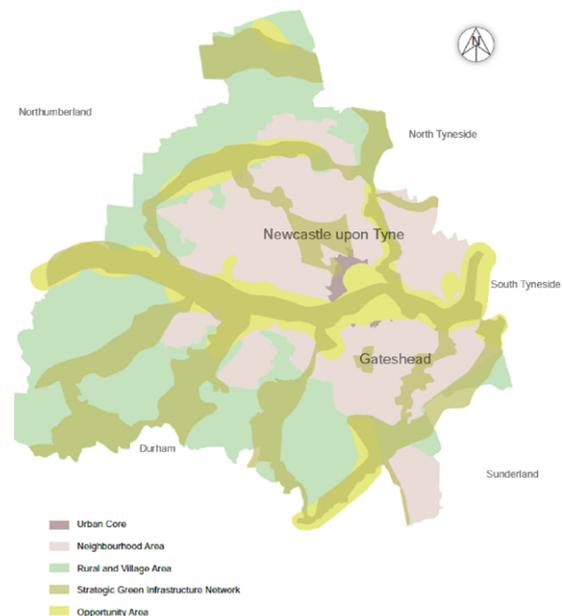


Figure 1: Strategic Green Infrastructure Network and Opportunity Areas identified in Core Strategy and Urban Core Plan (2015-2030)

© Ordnance Survey [100019569]. Copyright and database right [2017].

## Climate

Extreme weather events, such as heatwaves and flooding, are predicted to become more common as a result of climate change and have significant health impacts.

Public Health England research found that over a third of people who were flooded in 2014 suffered with depression, anxiety or PTSD, and nearly a quarter of people were still experiencing these negative mental health impacts two years later<sup>31</sup>.

Heatwaves are associated with increased excess mortality. Public Health England found that in England in 2006 there were an estimated 75 extra deaths per week for each degree of increase in temperature above 25°C<sup>32</sup>.



## Health and food

The World Health Organisation (WHO) estimates that greenhouse gas emissions could be reduced if the average dietary intake in the UK complied with its own dietary recommendations (i.e. reducing consumption of red meat, dairy products, eggs and sweet and savoury snacks). Complying with the WHO's dietary recommendations could also have health benefits:

- Diets with relatively high amounts of beef, lamb and pork are associated with higher risks of cardiovascular disease, stroke and certain types of cancer<sup>34</sup>.

## Exeter City Council – Passivhaus

Exeter City Council has taken a planned approach to low energy development for ten years. The council has already developed over 103 certified Passivhaus\* homes and there are multiple other low energy projects in the pipeline including a leisure centre, swimming pools, offices and care homes.

Key factors that shape their developments are low energy Passivhaus, climate readiness and improving health through building biology, including elements of permaculture\*\* landscape. Working with Exeter University and the Met Office (which is based in Exeter), Exeter Council has tested building designs against predicted future climate conditions to ensure resilience to 2080 and beyond. This approach is already delivering benefits, with residents reporting significant health improvements and better air quality<sup>33</sup>.

\* Passivhaus buildings provide a high level of occupant comfort while using very little energy for heating and cooling. Thermal comfort is achieved solely by post-heating or post-cooling the fresh air flow required for good indoor air quality, without the need for additional recirculation of air.

\*\* Permaculture is a set of design principles centred around whole-systems-thinking simulating or directly utilizing the patterns and resilient features observed in natural ecosystems.

- It would increase average life expectancy at birth by over 8 months and save almost seven million years of life lost prematurely in the next 30 years<sup>35</sup>.
- It could also help to reduce the incidence of obesity and type-2 diabetes thereby reducing the strain on the NHS and saving public money.



Photo credit: Nottingham Good Food Partnership

### **Nottingham Good Food Partnership – improving health and cutting the carbon footprint of food**

Part funded by Nottingham City Council, the Nottingham Good Food Partnership is an ever expanding coalition of over 50 member organisations working together to transform the sustainability of Nottingham's local food system. As part of the Sustainable Food Cities (SFC) Network, the Partnership aims to improve the health and well-being of all and to create a more connected, resilient and sustainable Nottingham. It is addressing six key issues including: promoting the importance of healthy and sustainable food to the diverse local communities; and working towards a circular food economy, radically reducing the ecological footprint of the food system and aiming for zero edible food waste<sup>36</sup>.

## Links to statutory duties

### Public health

#### Health and Social Care Act 2012

The Health and Social Care Act 2012 introduced a new duty for all upper-tier and unitary local authorities in England to take appropriate steps to improve the health of the people who live in their areas<sup>37</sup>.

#### Joint Strategic Needs Assessments

In England, local authorities, Clinical Commissioning Groups and other public sector partners are required to produce a Joint Strategic Needs Assessment to provide evidence on the health and wellbeing needs of their local community. As an example of good practice, Wirral Council have included a detailed section on climate change and health in their Joint Strategic Needs Assessment. Wirral have identified the groups that will be most vulnerable to climate change and the specific health impacts such as increased respiratory diseases, cardio-vascular illnesses, skin Cancer and mental health<sup>38</sup>.

### Air quality

#### 2008 ambient air quality directive (2008/50/EC)

The 2008 ambient air quality directive (2008/50/EC) sets legally binding limits for concentrations in outdoor air of major air pollutants that impact public health, including nitrogen dioxide<sup>39</sup>. Note that the WHO air quality guidelines set stricter standards for particulate matter<sup>40</sup>.

### Health and housing

#### Housing Health Safety Rating System (HHSRS)

The HHSRS is a risk-based evaluation tool to identify hazards within homes, including Excess Cold. The operating guidance says that dwellings *should be provided with adequate thermal insulation and a suitable and effective means of space heating*. Local authorities have a duty to keep housing conditions in their area under review with a view to identifying and enforcing any action that may be needed around HHSRS.

#### Minimum Energy Efficiency Standards

The Energy Act 2016 required that from 1st April 2018, any properties rented out in the private rented sector should have a minimum EPC rating of E, unless there is an applicable exemption. Local authorities, through trading standards, have a responsibility for enforcing this legislation.

#### Home Energy Conservation Act (HECA)

The 1995 Home Energy Conservation Act requires all of England's local authorities to report on action to improve energy efficiency in all residential accommodation in their area and to report every two years to BEIS on progress in implementing improvements.

### Climate

#### Flood and Water Management Act 2010

In England, county councils and unitary authorities, as Local Lead Flood Authorities (LLFAs), are required to lead in managing local flood risks. LLFA responsibilities include the preparation and maintenance of a strategy for local flood risk management, and a duty to cooperate with other Risk Management Authorities.

## What role can decision makers play?



**Leadership** – Councils can then play a leadership role through declaring a climate emergency and through encouraging and supporting residents and businesses on health and wellbeing improvements.



**Partnership** – Councils can work with different partners to encourage coordinated action. Organisations like the NHS and local community groups can be key partners in the delivery of fuel poverty and health improvement projects.



**Communicating** – Councillors can explain the opportunities to improve health and prosperity e.g. by raising awareness on air quality mitigation and reduction.



**Public health** – Councils can use public health responsibilities and powers to support and encourage action on improving health and the environment.



**Planning** – Councils can use planning powers to improve access to green space and improve infrastructure for active travel modes.



**Signposting** – Councils can signpost households and organisations to existing support, as necessary.



## Waltham Forest – using Section 106 funding to increase walking and cycling

Ashden Award 2019 finalist Waltham Forest Council has allocated Section 106 health funding to increasing walking and cycling as part of its Enjoy Waltham Forest programme. Developers of new housing pay Section 106 funding to upgrade existing infrastructure and facilities to support the additional population. Across England, Section 106 funding paid by housing developers provides around £150 million each year to ‘community’ funding, much of which goes on health<sup>41</sup>. In Waltham Forest, £500,000 of section 106 money was identified for funding health ‘prevention’ initiatives in 2017. Childhood obesity in the borough is higher than the national average,



and the Commission for Prevention group led by Waltham Forest’s public health team decided to allocate some of this funding to initiatives that promote active travel, providing a useful source of additional money<sup>42,43</sup>.



## Opportunities for action

Topic	Health
<b>Procurement</b>	<ul style="list-style-type: none"> <li>· Require contractors to operate low or zero emission vehicles.</li> <li>· When procuring food and catering services and meals on wheels services, specify food that is low in red meat and dairy products and, where possible, local and seasonal.</li> </ul>
<b>Delivering services</b>	<ul style="list-style-type: none"> <li>· Reduce carbon emissions through measures to increase access to affordable warmth.</li> <li>· Put health and wellbeing at the heart of local planning.</li> </ul>
<b>In plans and strategies</b>	<ul style="list-style-type: none"> <li>· Ensure transport strategies promote and enable sustainable and active modes of travel.</li> <li>· Improve access to, and the quality of, green and blue space.</li> <li>· Use planning guidance to encourage active travel and encourage car-free new developments.</li> <li>· Use public health plans and strategies, including Joint Strategic Needs Assessments, to support action on climate change that improves health.</li> </ul>
<b>In partnership</b>	<ul style="list-style-type: none"> <li>· Work with NHS, energy providers and retrofit organisations to support those vulnerable to ill health from cold homes or effect of severe weather events.</li> <li>· Work with travel authorities and organisations to encourage low carbon transport.</li> <li>· Work with relevant organisations and the wider community to develop strategic plans for green space within broader neighbourhood plans.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>· Work with partners to offer training for front line staff to identify and offer advice to those in fuel poverty.</li> <li>· Offer training for energy/transport officers to understand health priorities and targets.</li> </ul>

- <sup>1</sup> Royal College of Physicians, “Every breath we take: the lifelong impact of air pollution. Report of a working party,” RCP, London, 2016.
- <sup>2</sup> J. Jarrett, J. Woodcock, U.K. Griffiths, Z. Chalabi, P. Edwards, I. Roberts and A. Haines, “Effect of increasing active travel in urban England and Wales on costs to the National Health Service,” *The Lancet*, vol. 9832, no. 379, pp. 2198–2205, 2012.
- <sup>3</sup> S. Nicol, M. Roys and H. Garrett, “The cost of poor housing to the NHS,” Building Research Establishment, 2015.
- <sup>4</sup> D. Nutsford, A. Pearson and S. Kingham, “An ecological study investigating the association,” *Public Health*, vol. 127, pp. 1005–1011, 2013.
- <sup>5</sup> Public Health England, “PHE Heatwave Mortality Monitoring: Summer 2016”, June 2018. Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/714933/PHE\\_heatwave\\_mortality\\_monitoring\\_report\\_2016.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714933/PHE_heatwave_mortality_monitoring_report_2016.pdf) [Accessed 24 February 2019]
- <sup>6</sup> J. Milner, R. Green, A.D. Dangour, A. Haines, Z. Chalabi, J. Spadaro, A. Markandya and P. Wilkinson, “Health effects of adopting low greenhouse gas emission diets in the UK,” *BMJ Open*, no. 5, p. e007364, 2015.
- <sup>7</sup> CCC (2013) The Fourth Carbon Budget Review – part 2: the cost effective path to the 2050 target.
- <sup>8</sup> World Health Organisation, “World Health Organisation Global Ambient Air Quality Database (update 2018)”, 2018 [Online]. Available: <http://www.who.int/airpollution/data/cities/en/> [Accessed 4 May 2019]
- <sup>9</sup> Royal College of Physicians, “Every breath we take: the lifelong impact of air pollution. Report of a working party,” RCP, London, 2016.
- <sup>10</sup> WHO Regional Office for Europe, OECD, “Economic cost of the health impact of air pollution: Clean air, health and wealth,” WHO Regional Office for Europe, Copenhagen, 2015.
- <sup>11</sup> L. Pimpin, L. Retat, D. Fecht, L. de Preux, F. Sassi, J. Gulliver, A. Belloni, B. Ferguson, E. Corbould, A. Jaccard and L. Webber, “Estimating the costs of air pollution to the National Health Service and social care: An assessment and forecast up to 2035”, 10 July 2018, *PLOS Medicine*. Available: <https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002602> [Accessed 8 May 2019]
- <sup>12</sup> S. Yim and S. Barrett, “Public health impacts of consumption emissions in the United Kingdom,” *Environmental Science and Technology*, vol. 46, no. 8, p. 4291–4296, 2012.
- <sup>13</sup> J. Jarrett, J. Woodcock, U.K. Griffiths, Z. Chalabi, P. Edwards, I. Roberts and A. Haines, “Effect of increasing active travel in urban England and Wales on costs to the National Health Service,” *The Lancet*, vol. 9832, no. 379, pp. 2198–2205, 2012.
- <sup>14</sup> I. Rivas, P. Kumar and A. Hagen-Zanker, “Exposure to air pollutants during commuting in London: Are there inequalities among different socio-economic groups?,” *Environment International*, vol. 107, pp. 143–157, 2017
- <sup>15</sup> See: <https://theaws.co.uk/>
- <sup>16</sup> See: <https://www.ashden.org/winners/birmingham-bikes>
- <sup>17</sup> S. Nicol, M. Roys and H. Garrett, “The cost of poor housing to the NHS,” Building Research Establishment, 2015.
- <sup>18</sup> Friends of the Earth and The Marmot Review Team, “The Health Impacts of Cold Homes and Fuel Poverty,” Friends of the Earth England, London, 2011.
- <sup>19</sup> D. Caillaud, B. Leynaert, M. Keirsbulck and R. Nadif, “Indoor mould exposure, asthma and rhinitis: findings from systematic reviews and recent longitudinal studies,” *European Respiratory Review*, vol. 27, p. 170137, 2018.
- <sup>20</sup> Office for National Statistics, “Excess winter mortality in England and Wales: 2016 to 2017 (provisional) and 2015 to 2016 (final)”, 22 November 2017. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/2016to2017provisionaland2015to2016final> [Accessed 8 May 2018].
- <sup>21</sup> Friends of the Earth and The Marmot Review Team, “The Health Impacts of Cold Homes and Fuel Poverty,” Friends of the Earth England, London, 2011
- <sup>22</sup> R. Michael K, F. Lone, B. Ulrich, C. Jens, B. M. E. Katrine, H. Nina, J. Christina and K.S.B. Lotte, “Healthy Homes Barometer 2016,” VELUX Group, 2016.
- <sup>23</sup> See: [https://www.oldham.gov.uk/downloads/file/5168/warm\\_home\\_oldham\\_-\\_evaluation\\_report](https://www.oldham.gov.uk/downloads/file/5168/warm_home_oldham_-_evaluation_report)
- <sup>24</sup> See: <https://www.nice.org.uk/sharedlearning/liverpool-healthy-homes-programme-7-years-of-pre-empting-nice-guideline-ng6-excess-winter-deaths-and-morbidity-and-the-health-risks-associated-with-cold-homes>
- <sup>25</sup> See: <https://www.ashden.org/winners/shine>
- <sup>26</sup> See: <https://www.ashden.org/winners/cosy-homes-in-lancashire-1>
- <sup>27</sup> Defra, “Defra’s climate change plan. Department for Environment, Food and Rural affairs”, 2010 London.
- <sup>28</sup> D. Nutsford, A. Pearson and S. Kingham, “An ecological study investigating the association,” *Public Health*, vol. 127, pp. 1005–1011, 2013.
- <sup>29</sup> J. Roe, C. Thompson, P. Aspinall, M. Brewer, E. Duff, D. Miller, R. Mitchell and A. Clow, “Green space and stress: Evidence from cortisol measures in deprived urban communities,” *International Journal of Environmental Research and Public Health*, vol. 10, pp. 4086–2103, 2013.
- <sup>30</sup> See: [https://www.newcastle.gov.uk/sites/default/files/wwwfileroot/planning-and-buildings/planning-policy/green\\_infrastructure\\_delivery\\_framework\\_final\\_2019.pdf](https://www.newcastle.gov.uk/sites/default/files/wwwfileroot/planning-and-buildings/planning-policy/green_infrastructure_delivery_framework_final_2019.pdf)
- <sup>31</sup> Waite, T.D. et al, “The English national cohort study of flooding and health: cross-sectional analysis of mental health outcomes at year one”, 2017, *BMC Public Health* 17:129. Available at: <https://bmcpubhealth.biomedcentral.com/articles/10.1186/s12889-016-4000-2> [Accessed 28 February 2019]
- <sup>32</sup> Public Health England, “Heat Wave Plan for England 2013”, 2013. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/201150/Heatwave\\_plan\\_2013\\_-\\_Making\\_the\\_case\\_Accessible\\_updated.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/201150/Heatwave_plan_2013_-_Making_the_case_Accessible_updated.pdf) [Accessed 25 February 2019]
- <sup>33</sup> See: <https://www.houseplanninghelp.com/wp-content/uploads/2016/09/Exeter-City-Council-Scheme-Information.pdf>
- <sup>34</sup> A. Pan, Q. Sun, A.M. Bernstein, M.B. Schulze, J.E. Manson, M.J. Stampfer, W.C. Willett and F.B. Hu, “Red Meat Consumption and Mortality Results From 2 Prospective Cohort Studies,” *Archives of Internal Medicine*, pp. 555–563, 2015
- <sup>35</sup> J. Milner, R. Green, A.D. Dangour, A. Haines, Z. Chalabi, J. Spadaro, A. Markandya and P. Wilkinson, “Health effects of adopting low greenhouse gas emission diets in the UK,” *BMJ Open*, no. 5, p. e007364, 2015.
- <sup>36</sup> See: <https://nottinghamgoodfoodpartnership.co.uk/>

- <sup>37</sup> House of Commons, “Local authorities’ public health responsibilities (England)”, 2014. Available: <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SNO6844> [Accessed 24 February 2019]
- <sup>38</sup> See: <https://www.wirralintelligenceservice.org/jsna/climate-health/>
- <sup>39</sup> European Commission, “Air Quality – Existing Legislation”, Available at: [http://ec.europa.eu/environment/air/quality/existing\\_leg.htm](http://ec.europa.eu/environment/air/quality/existing_leg.htm) [Accessed 8 May 2019]
- <sup>40</sup> World Health Organisation, “Ambient (outdoor) air quality and health”, May 2018. Available at: [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health) [Accessed 8 May 2019]
- <sup>41</sup> See: <https://improvement.nhs.uk/resources/obtaining-funds-through-section-106-s106-and-community-infrastructure-levy-cil/>
- <sup>42</sup> Personal conversation with Waltham Forest public health team, 2019.
- <sup>43</sup> See: <https://www.enjoywalthamforest.co.uk/>

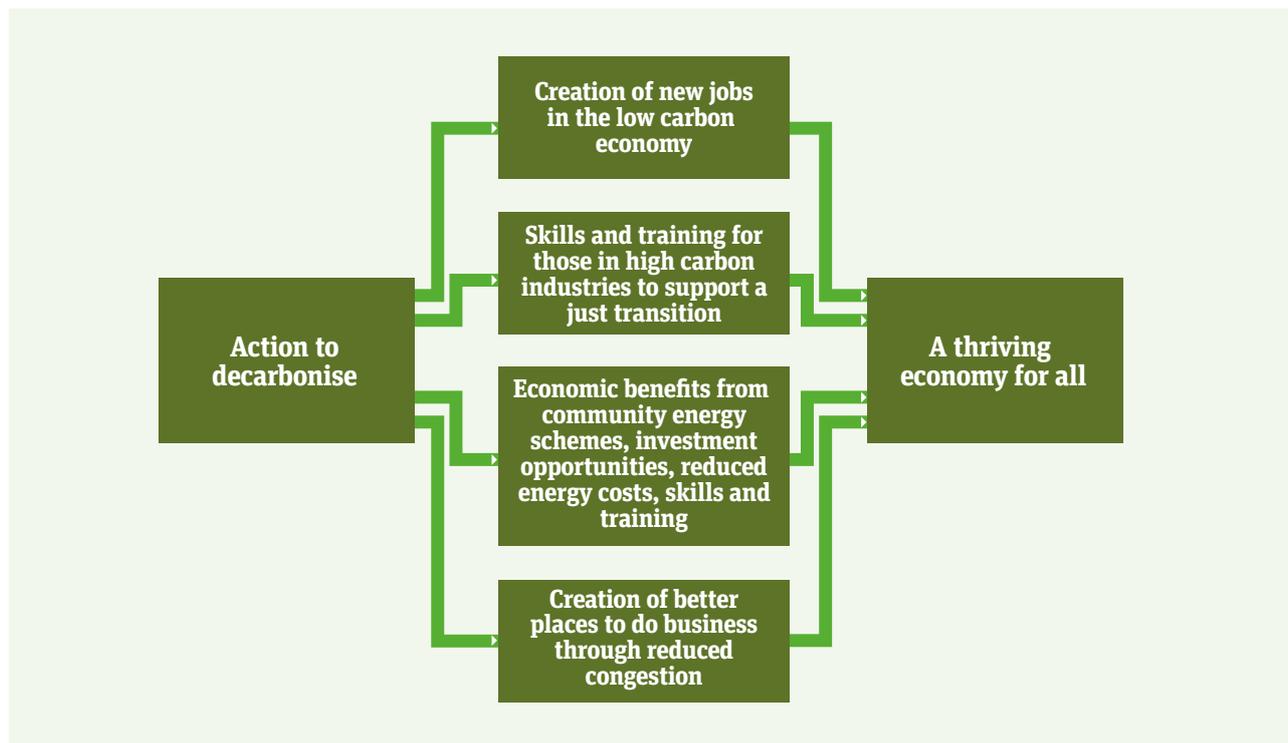
# A toolkit for city regions and local authorities:

## Chapter 3: Economic opportunity and job creation



**Climate action co-benefits**  
Cutting carbon and improving people's lives

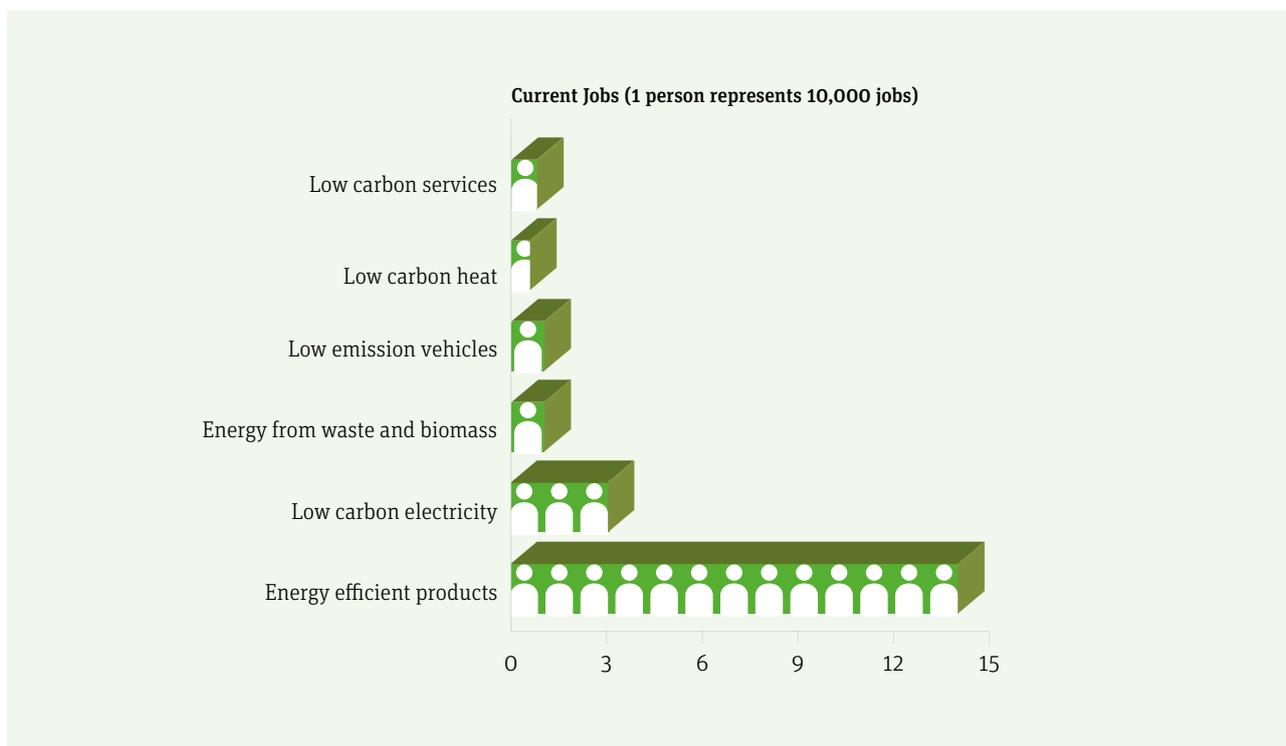
## Climate action co-benefits – economic opportunity and job creation



### Climate action and economy – key facts

- The UK low carbon and renewable energy economy grew by 6.8% in 2017 to reach almost £45 billion by the end of 2017<sup>1</sup>.
- Over the last ten years, annual growth of the UK Gross Domestic Product (GDP) has been between 1.5% and 3.1% while the green economy has consistently grown at around 5%.
- Over 200,000 people (full time equivalents) currently work in the low carbon and renewable energy economy with many more employed through supply chains.
  - Over two thirds of these jobs, and almost half of this turnover, are in the energy efficient products sector.
  - The second largest sector within this area is the low carbon electricity group, which covers electricity generation from renewables and nuclear.
  - Renewable heat saw the biggest growth within this sector, to £1.7 billion in 2017.
- Analysis for the Committee on Climate Change estimated that the low carbon economy has the potential to grow 11% per year between 2015 and 2030 – four times faster than the rest of the economy – and could deliver between £60 billion and £170 billion of export sales of goods and services by 2030<sup>2</sup>.
- Local authorities are key players in the local economy, spending over £100 billion<sup>3</sup> annually, providing them with an opportunity to drive growth in the low carbon goods and services sector. In the fiscal year ending in 2019, total UK public spending is expected to be £817.5 billion<sup>4</sup>.
- According to a recent BEIS survey, 65% of all 18–24 year olds (which equates to 3.7 million people in the UK) were interested in working in the green economy<sup>5</sup>.
- The government estimates that the green economy will create two million jobs between now and 2030<sup>6</sup>.
- The UK cycle industry is worth three times more than the UK steel industry and employs twice as many people. Cycling related businesses currently generate at least £5.4 billion for the UK economy each year, and they sustain 64,000 jobs<sup>7</sup>.

## Employment in the low carbon economy<sup>8</sup>



## Accessing facts that relate to your area

Topic	Source	Description	Link
<b>Interest in working in the green economy</b>	BEIS, 2018, 'Perceptions of the green economy'	Young people by region interested in a job in the green economy	<a href="https://www.gov.uk/government/publications/views-on-the-green-economy-survey-of-young-people">https://www.gov.uk/government/publications/views-on-the-green-economy-survey-of-young-people</a>
<b>LCRE data</b>	Grantham Institute, London School of Economics	LCRE data is only available by nation, not by region. However, LSE has done some analysis that indicates low-carbon employment levels are highest in Scotland, with around 30,000 low-carbon employees, followed by the Southeast and Northwest of England, and then the Yorkshire and Humber region.	<a href="http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/12/Sustainable-Growth-in-the-UK_Full-Report_78pp.pdf">http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/12/Sustainable-Growth-in-the-UK_Full-Report_78pp.pdf</a>
<b>BRES data</b>	ONS	Business Register and Employment Survey. Provides data by combined authority and local authority. Job classifications do not specify low carbon; but approximate data can be derived from standard industry codes e.g electricity transmission/distribution.	<a href="https://www.nomisweb.co.uk/datasets/newbres6pub">https://www.nomisweb.co.uk/datasets/newbres6pub</a>

## The UK's low carbon economy – driving regional growth

- **Scotland:** Turnover of the low carbon economy was £5.5 billion in 2015, supporting 31,000 jobs and 20,000 businesses

- **North:** Low carbon investment has encouraged innovation and generation of clean energy, and developed local supply chains, all of which has helped drive regeneration

- **North East:** Low, environmental goods and services sector supports around 20,000 jobs in the North East, with high proportions of the national employment in offshore wind, geothermal, hydroelectric, and biomass energy, alternative fuels, heat networks and electric vehicles

- **Northern Ireland:** Turnover was almost £1 billion, supporting 5,000 jobs and 4,000 businesses

- **East:** Great Yarmouth port is being used as the construction base for a new offshore wind farm, and has a maintenance deal for another two wind farms. These contracts will create up to 150 jobs for 25 years, with hundreds more in the supply chain

- **Midlands:** Leading region for the design and manufacture of low carbon vehicles, with more than £1.5 billion (more than 60%) of UK automotive R&D carried out in the region

- **Wales:** Turnover was £1.7 billion in 2015 (more than 60%) of UK automotive R&D carried out in the region

- **South West:** The low carbon sector in Bristol employs over 9,000 people and over 19,000 in the whole of the West of England, generating £2.4 billion

- **South East:** The low carbon economy in Oxfordshire has a turnover of £1.15 billion supporting 8,800 jobs, and is 7% of the local economy

## Why it matters

Taking action on climate change can have substantial economic benefits:

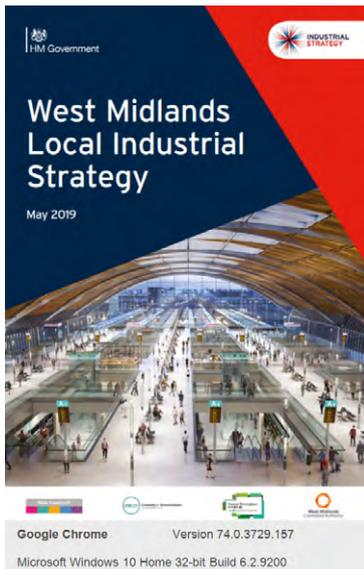
- Clean growth will increase productivity, create good jobs, boost earning power for people right across the country and help protect the climate and environment upon which we and future generations depend.
- Promoting local investment, growth, jobs and skills are key priorities for all cities and most local authorities. Focusing these on opportunities in relation to clean growth – i.e. growing the UK's national income while cutting greenhouse gas emissions<sup>9</sup> – will help to make the local economy fit for the future.
- Focusing on enabling local people to access the necessary skills to meet the future needs of a low carbon economy can help to protect against unemployment as the economy changes.
- Supporting local businesses in a changing economy can help protect them against future threats to their business (e.g. low emission zone charges for diesel vehicles).

- Focusing on sustainable transport and tackling congestion can create a better place to do business.

These principles are at the heart of the Government's Clean Growth Strategy; and achieving clean growth, while ensuring an affordable energy supply for businesses and consumers, is at the heart of the UK's Industrial Strategy.

As a response to the UK Government Industrial Strategy and Clean Growth Strategy, all local areas are expected to work with Government to produce joint Local Industrial Strategies to help focus future funding and coordinate support for business growth.





## West Midlands – the UK’s first clean and inclusive Local Industrial Strategy<sup>10</sup>

The West Midlands Combined Authority produced the UK’s first Local Industrial Strategy, launched by the West Midlands Mayor and Government Ministers in May 2019. The strategy has a clear clean and inclusive growth strand at its heart by:

- Incorporating carbon emissions reduction, air quality and natural environment as part of the current and future growth objectives.
- Setting out key local strengths and sectors which will make the best of this opportunity – e.g. future mobility.
- Identifying how to integrate into other local sector support – e.g. innovation, housing.
- Supporting infrastructure investment will help the foundation of all local business and clean growth e.g. energy, transport, natural capital.

“Last year at a Green Alliance event, Mayor Andy Street said he wanted the West Midlands to be the heart of the clean industrial revolution. The launch of his local industrial strategy shows he has begun to make good on that promise. Commitment to further reductions in carbon emissions, increasing natural capital and going big on key regional clean growth opportunities – electric cars, batteries, energy efficient design and innovation – demonstrates what local industrial strategies should be doing. Now government needs to back leading metro mayors with similarly ambitious strategies with the funding and powers to make local clean growth happen.

Dustin Benton, Policy Director, Green Alliance

## Redcar & Cleveland – Grangetown Training and employment hub

The award winning Grangetown Training and Employment Hub is a partnership between Redcar & Cleveland Council, the Future Regeneration of Grangetown (FROG) and MGT Teeside, which owns and operates the new Teeside biomass power station. To-date, more than 850 people have successfully found work through the hub, including many at the biomass power station site<sup>10</sup>.



Photo credit: [www.stuartboultonphotography.com](http://www.stuartboultonphotography.com)

### Alan's story:

Unemployed for over six months, 52-year-old Alan Gray (pictured) felt his future looked bleak. But thanks to the advice and support he received from the Hub, including skills training and CV writing, Alan has a new job with Bentall Rowlands assisting the building of the silos at the under-construction MGT Power Plant. "I had loads of support with my CV and training and if it wasn't for them, I wouldn't have this job."

## The business case for action; what difference can taking action make?

Clean growth can make a real difference to people's lives, from reducing energy bills and improving air quality, to supporting new technologies and boosting earning power in high-quality jobs.

### Cost of unemployment

In the financial year ending 2017, the UK government spent £264 billion on welfare, which made up 34% of all government spending<sup>11</sup>. £44 billion of this was on unemployment benefit.

By separating emissions from growth and fostering a low-carbon economy, competition will be encouraged and new jobs created.

### Potential for employment generation in the low carbon economy

New high value jobs, industries and companies have been created which are driving a technologically innovative, high growth and high value 'low carbon' sector of the UK economy. Parts of the domestic economy are rapidly decarbonising and, thanks to the UK's world leading expertise in technologies such as offshore

wind, power electronics for low carbon vehicles and electric motors, and global leadership in green finance, the UK is now successfully exporting goods and services around the world – for example, one in every five electric vehicles driven in Europe is made in the UK. There is also considerable potential for employment through the retrofit of energy efficiency measures.

This progress now means there are more than 430,000 jobs in low carbon businesses and their supply chains, employing people in locations right across the country<sup>17</sup>.

Local Industrial Strategies, led by Mayoral Combined Authorities or Local Enterprise Partnerships, will promote the coordination of local economic policy and national funding streams and establish new ways of working between national and local government, and the public and private sectors. Given the speed with which the low carbon economy is due to grow, these strategies should include provision for supporting and enabling this sector of the economy.



## RetrofitWorks



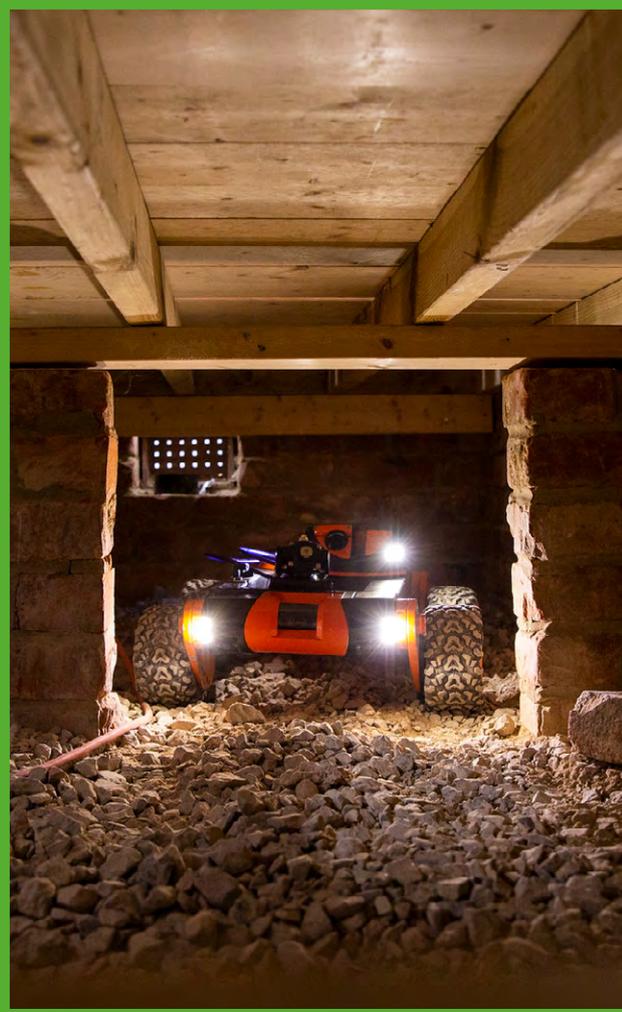
Ashden winner Parity Projects set up the RetrofitWorks cooperative to boost the able-to-pay market for energy efficient retrofit by providing access to this market for small local installers who are ‘practitioner members’ of the co-operative. RetrofitWorks is running three out of six pilot schemes funded by BEIS to test approaches for increasing the rates of energy efficiency improvements by providing support for local supply chain integration. These pilots are taking place in six different areas: West of England, Oxfordshire, Sussex, London, Manchester and Cornwall. RetrofitWorks have modelled the potential for job creation and estimate that at the end of a four-year programme, over 7,000 retrofit jobs could be created in each of their pilot areas (Oxfordshire, Sussex and London) with nearly 2,000 jobs sustained beyond the project completion (see table below)<sup>12</sup>.

	Value of Work Delivered	Number of Retrofit Jobs	Jobs Sustained (FTE)
Oxfordshire	£33.2m	7,742	672
East and West Sussex	£56m	6,960	750
London	£67.9m	7,295	579

## Zedify

Zedify, a finalist for the 2019 Ashden UK Clean Air in Towns and Cities Award, operate a fleet of e-cargo bikes. Operating from hubs in Cambridge, Brighton, Norwich, Glasgow, Edinburgh, Southampton, east and central London, their bikes make nearly 30,000 deliveries each month. The parcel delivery market is growing rapidly at around 7% per year but is well known for poor employment conditions. In contrast, Zedify’s 75 riders are all paid the living wage. As more towns and cities adopt restrictions on deliveries during peak hours to reduce congestion and pollution, Zedify offers a valuable zero-emission service to businesses while providing good employment opportunities<sup>13</sup>.





## Q-Bot – creating attractive, highly skilled jobs in energy efficiency retrofit

Millions of homes in the UK have ‘suspended floors’ – a ground floor built from wood with a ventilated gap underneath – and up to 25% of their heat loss can be through the floor. Q-Bot has developed a robot that can apply a layer of insulation beneath suspended floors. There’s no need to pull up carpets or create disruption because Q-Bot’s robots can gain access through the exterior wall or a small hole in the floor and use on-board sensors to create dynamic 3D maps to guide installation and identify hazards.

Q-Bot’s work is creating attractive, highly skilled jobs, increasing productivity, reducing waste, and improving safety and accountability. These jobs appeal to school-leavers and graduates, whether in the design and maintenance of robots or in the installation process<sup>16</sup>.



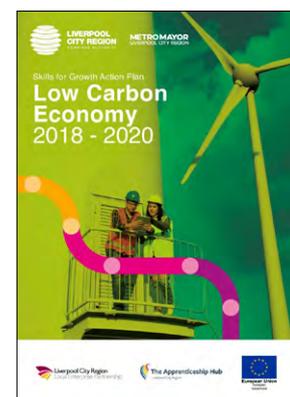
## Liverpool city region – £2 billion low carbon economy

In February 2019, Liverpool’s Metro Mayor Steve Rotheram announced plans for a new £10 million Green Investment Fund, which will back renewable energy projects and support his ambition for a zero-carbon city region by 2040.

Liverpool City Region has assessed potential employment and enterprise growth in the low carbon sector. The Low Carbon economy in the City Region experienced a net increase in employment of 7.75% (2,645 jobs) over the period 2010 to 2016, employing over 22,000 people in 1,400 companies. The sector contributes over £2 billion to the City Region’s economy.

The decision by Government to designate the City Region as a Centre for Offshore Renewable

Engineering (CORE Status) is recognition of Liverpool’s continued potential in the low carbon and renewable sector. Growth is being stimulated through £3.5 billion of investment in Liverpool Bay, the exploitation of commercial opportunities in low carbon environmental goods and services, development of energy and heat networks and the imperative for a modal shift in transport<sup>14</sup>. Gross Value Added (GVA) of the sector is expected to rise by 34% by 2030<sup>15</sup>.



### Cutting the cost of congestion and creating a better place to do business

The UK is the world's 10th most congested country and London is Europe's second most gridlocked city; UK drivers wasted an average of 31 hours in rush-hour traffic in 2017, costing each motorist £1,168<sup>17</sup> and costing UK businesses over £700 million each year. Reducing traffic congestion will improve air quality and reduce these costs whilst also helping to create a more attractive place to do business.

“We can only tackle congestion in the long term by making public transport more affordable, and making cycling and walking more appealing choices for all Londoners.

London Mayor Sadiq Khan, 2016<sup>18</sup>



### Nottingham Workplace Parking Levy – cutting congestion and investing in sustainable transport

To tackle traffic congestion, Nottingham City Council introduced a Workplace Parking Levy in 2011<sup>19</sup>. This levy places a modest charge on employers providing 11 or more parking places and invests the revenue in sustainable transport measures such as new tram infrastructure and routes, electric buses, cycling and public transport real time bus display equipment. Since the introduction of the levy, journey time per vehicle mile increased more slowly in Nottingham than in comparable cities, despite strong jobs growth. According to an evaluation undertaken by Loughborough University, there is positive evidence from case studies of major inward investments due to the public transport improvement components of the Workplace Parking Levy package which is making Nottingham more attractive for employers<sup>20</sup>.



### Decentralised energy

Local energy schemes offer the potential to save both councils and their communities money and/or generate revenue.

Community renewables schemes can deliver a range of social and economic benefits to local communities, including increased autonomy,

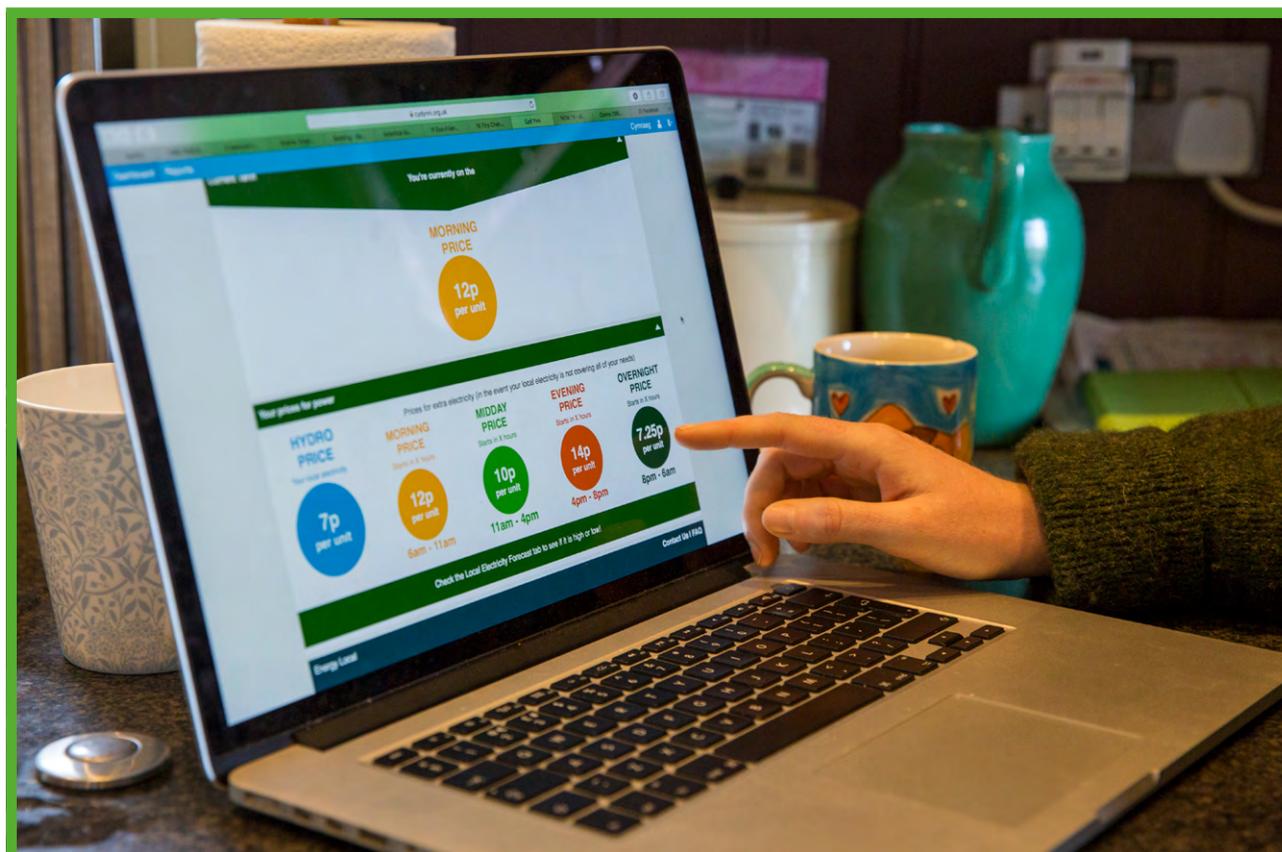
empowerment and resilience, by providing a long-term income and local control over finances, often in areas where there are few options for generating wealth. Other benefits include opportunities for education, a strengthened sense of place and, potentially, an increase in visitors to the area.



### Community wind farms in Scotland – benefiting the local economy

A Scottish study<sup>21</sup> found that the involvement of local contractors in on-site works for new community energy schemes can bring in around £10,000 (based on a 900kW turbine) to the local economy. Income from operation and maintenance of the project (typically land rental and local management charges) are estimated at £20,000 per annum. Operational income can range from £100–250,000 per annum (the latter being in exceptional island locations). Local investors will typically be offered a 2% premium over other locally available investment opportunities. Where local investors take up 25% of a £1 million share offer – representing a combined investment of £250,000 – an additional £5,000 per annum will accrue to local investors within the community, a portion of which will be spent on local goods and services.

Most community energy schemes feed directly into the grid without any capacity for local people to use this energy at preferential rates. However, new smart meter technology can be used to allow households to match their use to local renewables, reducing their bills and giving more value to the generator whilst also keeping energy spend in the local community.



### **Energy Local – matching local energy demand with local supply**

Energy Local CIC has introduced a game-changing solution to large discrepancies in the amount households pay and the amount generators earn from distributed, renewable energy generated at a local level, with its match tariff. Most community energy schemes feed directly into the grid without any capacity for local people to use this energy at preferential rates. Members of an Energy Local Club, the first of which is in Bethesda, Wales, are able to use local hydro-generated electricity at a price that is mutually beneficial.

Small-scale renewable energy is sold to energy suppliers at 5–6p per kWh, but people living nearby buy electricity back at up to three times that price. However, Energy Local uses new smart meter technology to allow households to match their use to local renewables. This is having a direct impact on fuel poverty, generating additional funds for renewable generators and keeping energy spend in the local economy<sup>22</sup>.



### Opportunities for investment by local citizens

Most local authority capital projects are typically funded by loans from the Public Works Loan Board (PWLB). However, some councils are beginning to explore ‘municipal community bonds’ where residents can invest small sums in local projects, including sustainable housing, renewable energy and transport.

### Ensuring a just transition<sup>25</sup>

Past economic transitions characterised by rapid technological change have had immense impacts on labour markets. Job displacement and loss of livelihoods are common during these periods, which can increase inequality and social discord. High-carbon jobs disappear and new technologies such as artificial intelligence are expected to go beyond replacing mechanical and manual labour to replacing some cognitive ‘thinking’ workers.

Some estimates suggest automation could replace over half of all jobs by 2055 and, when combined with further globalisation, this could accelerate the trend in the hollowing out of middle-skill jobs that require routine manual and cognitive skills such as machine operators and clerical workers. This could make the low carbon transition much harder for some workers, in particular those in middle-skill, middle-level high-carbon jobs that may disappear.

Local government should actively consider how to maximise the opportunities that arise out of decarbonisation, in terms of fair work and tackling inequalities, while delivering a sustainable and inclusive labour market. This could involve supporting labour market flexibility by facilitating access to appropriate training and retraining.



A video telling the story of someone threatened by the changes of transitioning to a low carbon economy can be found [here](#).



### Abundance – testing municipal community bonds

Crowd-funding platform Abundance won an Ashden Award in 2014<sup>23</sup>. Abundance and the University of Leeds have just completed a Department for Digital, Culture, Media & Sport -funded project, Financing Society, helping three UK local authorities and three NHS bodies to conduct feasibility studies on using investment-based crowdfunding to finance specific infrastructure projects in their area.

One of these case studies is Leeds City Council which has an ambitious plan to decarbonise the city’s infrastructure and is looking to commercialise an estimated annual £277 million of profitable low carbon projects. Leeds wants to ensure that the economic benefits of these projects are captured locally and that residents of Leeds participate in the low carbon transition. The Council’s finance team has undertaken a technical and commercial assessment of a community municipal bond to finance a rooftop solar project across the council’s estate; the council are currently assessing a 2019 pilot.

The other two local authority case studies are Bristol, which is considering a community municipal bond to finance energy efficiency retrofit work in the Council estate, and the Isle of Wight, which has looked at investor-based crowdfunding to supplement other funding for regeneration projects<sup>24</sup>.





### **Repowering – training young people in renewable energy**

Ashden award-winner Repowering delivers community-based renewable energy. They have delivered projects in some of the most deprived councils in London including Lambeth and Hackney. These projects get local people involved, providing opportunities to gain skills and confidence. Repowering provides a paid youth training programme to do this. The accredited programme is targeted at upskilling 16–25 year olds and gives an insight to sustainable energy, social enterprise and community development. Training includes activities such as solar panel making, visits to renewable energy technology sites, discussions with industry specialists and more general skills such as digital marketing, brand building, community engagement and surveying. By involving communities, rather than imposing projects on them, they've successfully implemented projects in areas previously deemed hard to reach<sup>26</sup>.



## Job losses and potential job creation in the North East

The IPPR has predicted that up to 28,000 jobs could be lost in the north of England in the next 12 years under the government's drive towards a low-carbon economy. The region is home to the largest number of coal and gas power stations in England, which is where job losses are likely. However, with the right support in place, the region, which currently produce almost half of the UK's renewable energy, could be at the heart of a 'clean energy revolution' – with a potential for 46,000 new green jobs. The IPPR has criticised the government's failure to include proposals within its industrial or clean growth strategies to limit the damaging effect on communities and help workers retrain. This risks job losses or forced acceptance of low-quality jobs, an increase in numbers on welfare benefits and an increase in local deprivation. Locally, training and skills can be offered to help workers transition to the low carbon economy<sup>27</sup>.



## Councils in Norfolk and Suffolk fund a new training centre on offshore wind

In the past decade, the UK has emerged as a world leader in offshore wind energy. And some of the biggest winners from the multi-billion pound investment look set to be coastal towns searching for their industries of the future.

One such town is Great Yarmouth, which is ranked 20th amongst local authority districts with the highest proportion of their neighbourhoods in the most deprived 10% of neighbourhoods nationally. The town's port is being used as the construction base for ScottishPower's £2.5 billion East Anglia One wind farm, due for completion in 2019. It has also secured an operations and maintenance deal for Swedish energy firm Vattenfall's two wind farms, which will be the biggest in the world. These contracts will create up to 150 jobs for 25 years, creating hundreds more in the supply chain.

To help ensure local people can benefit from these opportunities, the East of England Offshore Wind Skills Centre opened in the town in December 2018. It's a collaborative regional training and competence facility that will support local people wishing to reskill and gain sustainable employment in the offshore wind industry on the New Anglia Energy Coast. The Centre has been made possible by a £1.1 million grant from the New Anglia Skills Deal Programme, provided by Norfolk County Council, Suffolk local authorities and the Education and Skills Funding Agency<sup>28</sup>.

### **Saving money on energy bills**

A key economic benefit of energy efficiency programmes is reducing expenditure on energy. This leads to healthier balance sheets (for organisations) and increased disposable income (for non-fuel poor households). In a single street of 100 ‘average’ homes, the combined spend on energy will be around £140,000 a year, of which around £28,000 a year could typically be saved through cost effective measures; money that could then potentially be spent in the local economy. Similarly, a secondary school or college spending £100,000 a year on energy could save around £20,000 a year through implementing low cost energy efficiency measures.

### **West Midlands – calculating the potential for energy savings**

There are 1.7 million homes in the West Midlands, forecast to increase to £1.9 million by 2030, which will add £100–300 million to the regional energy spending. In principle, energy bills and carbon emissions can be cost effectively reduced by 10–30%, equating to up to £600 million per annum for the region<sup>29</sup>.

### **Cambridgeshire County Council – helping schools to slash energy bills and generate revenue**

Cambridgeshire County Council has used the Ashden-award winning Re:fit Programme to deliver guaranteed energy-efficiency savings in schools across the county.

The council provides loans or managed service arrangements to pay for the energy saving measures and is able to draw down public sector capital from its Local Energy Investment Fund to pay for the works up front. The aim is to help schools plan for the future and manage their energy bills, as well as operate more efficiently and reduce their carbon emissions. For example: Great Paxton Primary School was spending £11,000 on energy each year. A range of energy efficiency and renewable solutions were installed through this programme, halving the school’s energy bill and generating over £4,500 in income each year. This represents a total saving on annual energy costs of almost 90%<sup>30</sup>.

**”** *It’s been a huge success. After one year we are cash positive and our electricity and gas bills have halved. We have generated income and reduced our carbon footprint, but most importantly, we have provided a better environment for our children to learn in. With the savings made we are in a position to provide more for our pupils.*

Lee Frost, Headteacher, Great Paxton Primary School

## Links to statutory powers

### Economic growth

The directly-elected metro mayors are responsible for setting out a strategy for growing the city region economy and will have certain powers over issues such as housing, transport and skills. Previously the majority of these powers lay either with individual local authorities, such as most planning or local transport decisions, or with national decision makers, such as the adult skills budget administered through the Skills Funding Agency (see below).

### Skills

Local Democracy Economic Development and Construction Act 2009 and Apprenticeships Skills Children and Learning Act 2009

The government plans to devolve control of the adult education budget to six combined authority areas and the Greater London authority in 2019. This will involve devolution of around £700 million.

Education and Skills Act 2008

As part of this Act, local authorities have duties to secure education/training provision for all young people over compulsory school age and under 19, and those aged 19-25 for whom an Education, Health and Care (EHC) plan is maintained.

### Procurement

Public Services (Social Value Act) 2012

The SVA requires local authorities to consider, at the pre- procurement stage, how procurement could improve the social, economic and environmental well-being of the area.

## What role can decision makers play?



**Leadership** – Councils can play a leadership role through declaring a climate emergency and developing a plan to encourage and support low carbon businesses.



**Partnership** – Councils can work with different partners to encourage coordinated action. Organisations like LEPs and Chambers of Commerce can be key partners in delivering initiatives to support the low carbon economy.



**Communicating** – Councillors can explain the opportunities that the low carbon economy presents e.g. by raising awareness of growth in this sector and the sorts of skills needed to capitalise on opportunities.



**Planning** – Councils can use planning powers to create designated low carbon enterprise zones and provide the necessary infrastructure for low carbon growth, including electric vehicle charging points.



**Skills** – Metro mayors can use their newly devolved powers in relation to skills to focus on providing the training and upskilling needed by a low carbon economy and to help ensure that those with a history of working in carbon intensive industries are not left behind in the transition.

## Opportunities for action

Topic	Economic opportunity
<b>Procurement</b>	<ul style="list-style-type: none"> <li>• Where possible, include social value clauses relating to supporting local R&amp;D at higher education establishments on new and innovative ways of generating energy.</li> <li>• Provide opportunities for local SMEs to respond to council tenders for de-carbonisation work.</li> </ul>
<b>Delivering services</b>	<ul style="list-style-type: none"> <li>• Use procurement to drive decarbonisation through strong procurement criteria and requirements on suppliers.</li> <li>• Transport plan to include provision for low carbon transport which can reduce congestion thus creating a better place to do business.</li> </ul>
<b>In plans and strategies</b>	<ul style="list-style-type: none"> <li>• Put development of the low carbon economy at the heart of the council's local economic strategy and Local Plan.</li> <li>• Ensure skills and training are in place to support the transition to a low carbon economy.</li> <li>• Support local businesses in the change towards a clean economy e.g. EVs.</li> </ul>
<b>In partnership</b>	<ul style="list-style-type: none"> <li>• Work with local transport authorities and others to create a better place to do business through sustainable transport and tackling congestion.</li> <li>• Work with LEP to nurture low carbon businesses and with education providers to ensure skills and training are provided.</li> <li>• Work with community energy providers to encourage/enable development of community energy schemes that generate local employment.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• Work with local employment agencies to raise awareness of new opportunities and ensure referral to low carbon training opportunities.</li> </ul>

<sup>1</sup> Royal World Health Organisation, "Ambient (outdoor) air quality and health", May 2018. Available at: [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health) [Accessed 8 May 2019]

<sup>2</sup> See: <https://www.gov.uk/government/publications/clean-growth-strategy>

<sup>3</sup> England: the total revenue expenditure by all local authorities for 2018–19 is budgeted to be £95.9bn [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/720336/RA\\_Budget\\_2018-19\\_Statistical\\_Release.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/720336/RA_Budget_2018-19_Statistical_Release.pdf); Wales: the total revenue expenditure by all local authorities for 2018-19 is budgeted to the £8,110,798 <https://stats.wales.gov.wales/Catalogue/Local-Government/Finance/Revenue/Budgets/budgetedrevenueexpenditure-by-authority-service>; Scotland: net revenue expenditure budget of £12.137 billion <https://www.gov.scot/publications/provisional-outturn-budget-estimates-2018/pages/1/> (information not found for Northern Ireland)

<sup>4</sup> See: [https://www.ukpublicspending.co.uk/local\\_spending](https://www.ukpublicspending.co.uk/local_spending)

<sup>5</sup> BEIS, "Views on the green economy: survey of young people", 2018. Available at: [https://www.gov.uk/government/publications/views-on-the-green-economy-survey-of-young-people?utm\\_source=b83c87db-31b4-4ba9-a46f-62e3efc49944&utm\\_medium=email&utm\\_campaign=govuk-notifications&utm\\_content=immediate](https://www.gov.uk/government/publications/views-on-the-green-economy-survey-of-young-people?utm_source=b83c87db-31b4-4ba9-a46f-62e3efc49944&utm_medium=email&utm_campaign=govuk-notifications&utm_content=immediate)

<sup>6</sup> See: <https://www.bikebiz.com/bicycle-association-launches-cross-departmental-industrial-case-for-cycling/>

<sup>7</sup> See: <https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalesimates/2017>

<sup>8</sup> See: <https://www.gov.uk/government/publications/clean-growth-strategy/clean-growth-strategy-executive-summary>

<sup>9</sup> See: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/802091/west-midlands-local-industrial-strategy-single-page.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/802091/west-midlands-local-industrial-strategy-single-page.pdf)

<sup>10</sup> See <https://www.gazettelive.co.uk/news/teesside-news/around-40-new-jobs-available-13316694>

<sup>11</sup> See: <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/publicsectorfinance/articles/howisthewelfarebudgetspent/2016-03-16>

<sup>12</sup> See: <http://retrofitworks.co.uk/schemes/>

<sup>13</sup> See: <https://www.zedify.co.uk/>

<sup>14</sup> See: <https://www.liverpoolcityregion-ca.gov.uk/steve-rotheram-announces-plans-for-a-10-million-green-investment-fund/>

<sup>15</sup> See: [https://www.liverpoolcityregion-ca.gov.uk/wp-content/uploads/LCRCA\\_SFGAP\\_LOWCARBON.pdf](https://www.liverpoolcityregion-ca.gov.uk/wp-content/uploads/LCRCA_SFGAP_LOWCARBON.pdf)

<sup>16</sup> See: <https://www.ashden.org/winners/q-bot>

<sup>17</sup> See: <https://www.bbc.co.uk/news/uk-42948259>

<sup>18</sup> See: <https://www.london.gov.uk/press-releases/mayoral/mayor-of-london-vows-to-tackle-londons-congestion>

<sup>19</sup> See: <http://www.nottinghamcity.gov.uk/>

<sup>20</sup> See: <https://dSPACE.lboro.ac.uk/dSPACE-jspui/bitstream/2134/26231/1/TRA%20Economic%20Evaluation%20Paper.pdf>

<sup>21</sup> See: [http://www.communityenergyscotland.org.uk/userfiles/file/stevens\\_uploaded\\_documents/Measuring-the-Local-Economic-Impact-of-Community-Owned-Energy-Projects-2014-pdf.pdf](http://www.communityenergyscotland.org.uk/userfiles/file/stevens_uploaded_documents/Measuring-the-Local-Economic-Impact-of-Community-Owned-Energy-Projects-2014-pdf.pdf)

<sup>22</sup> See: <http://www.energylocal.co.uk/>

<sup>23</sup> See: <https://www.abundanceinvestment.com/>

<sup>24</sup> See: <https://baumaninstitute.leeds.ac.uk/research/financing-for-society/>

<sup>25</sup> See: [http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/12/Sustainable-Growth-in-the-UK\\_Full-Report\\_78pp.pdf](http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/12/Sustainable-Growth-in-the-UK_Full-Report_78pp.pdf)

<sup>26</sup> See: <https://www.repowering.org.uk/>

<sup>27</sup> See: <https://www.theguardian.com/uk-news/2018/oct/22/28000-jobs-at-risk-in-north-of-england-over-low-carbon-economy>

<sup>28</sup> See: <https://www.orbisenergy.co.uk/news/3sun-group-leads-pioneering-training-flow-skilled-offshore-wind-workers/>

<sup>29</sup> See: <https://www.energycapital.org.uk/wp-content/uploads/2018/11/regional-energy-strategy-west-midlands-final.pdf>

<sup>30</sup> See: <https://www.mlei.co.uk/projects/school-programme/>

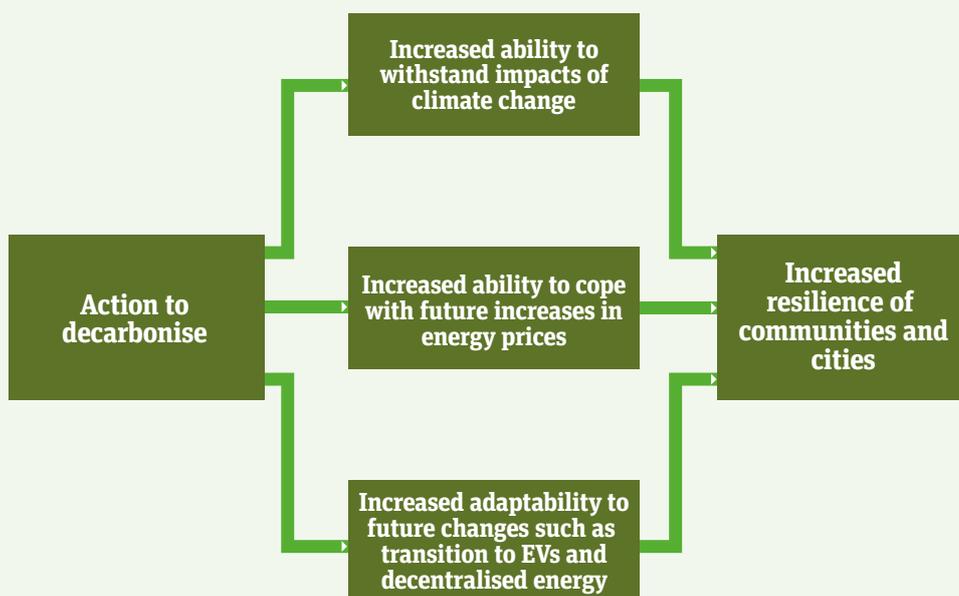
# A toolkit for city regions and local authorities:

## Chapter 4: Resilience



**Climate action co-benefits**  
Cutting carbon and improving people's lives

## Climate action co-benefits – resilience



### Climate action and resilience – key facts

- In England temperatures are, on average, between 0.5–1°C higher than they were in the 1970s. Sea levels have risen by an average of 3mm each year in recent decades and could increase by 12–76 cm by the end of the century (compared to 1990 levels)<sup>1</sup>.
- Recent storms have led to significant direct costs for councils. The winter storms of 2013/14 directly cost Kent County Council an estimated £4.4 million, rising to over £11 million when taking into account the necessary repairs and investment to infrastructure. Looking ahead, the costs to councils of climate impacts are likely to grow<sup>2</sup>.
- Heat related mortality is projected to increase steeply in the UK – by around 70% in the 2020s. Heatwaves increase the number of visits to GPs and hospitals, calls to NHS and social care referrals. This leads to costs to health and social care providers, including councils, of £266 to £625 per patient per day<sup>3</sup>. Some of these costs will fall on council budgets due to the new roles and responsibilities for local authorities under the Health and Social Care Act.
- Vulnerable groups of people such as those affected by poverty, poor health and disabilities will tend to experience disproportionate negative effects from extreme weather and climate impacts such as flooding<sup>4</sup>.
- Average domestic fuel bills have more than doubled in the last ten years in real terms, pushing large numbers of households into fuel poverty<sup>5</sup>.

## Accessing facts that relate to your area

Topic	Source	Description	Link
<b>Renewable energy</b>	Government statistics	Renewable electricity installations by technology by local authority. Latest data is end 2017. Data showing installed capacity also available.	<a href="https://www.gov.uk/government/statistics/regional-renewable-statistics">https://www.gov.uk/government/statistics/regional-renewable-statistics</a>
<b>Climate impacts – flood risk</b>	Environment Agency	Map showing degree of flood risk (from rivers and sea, and from surface water) by place or postcode.	<a href="https://flood-warning-information.service.gov.uk/long-term-flood-risk/map">https://flood-warning-information.service.gov.uk/long-term-flood-risk/map</a>
<b>Green space</b>	Ordnance Survey	Ordnance Survey Green Space maps, providing information on public parks, playing fields, sports facilities, play areas and allotments, along with access points for entering and exiting urban and rural greenspaces.	<a href="https://www.ordnancesurvey.co.uk/opendatadownload/products.html#OPGRSP">https://www.ordnancesurvey.co.uk/opendatadownload/products.html#OPGRSP</a>
	Ordnance Survey and Jurys Inn	Percentage green space by cities; Jurys Inn has used the above data to rank UK cities by percentage of open space.	<a href="https://www.jurysinns.com/blog/news-and-events/uk-greenest-cities">https://www.jurysinns.com/blog/news-and-events/uk-greenest-cities</a>

## Why it matters

Action to decarbonise can help to increase resilience to future climate impacts as well as potential increases in energy costs and changes to our energy system.

- Making buildings more energy efficient: Can reduce their risk of overheating; an increasing risk as heatwaves are forecast to become more frequent. Reduces energy demand, improving the UK's energy security and reducing reliance on imported energy.
- Ensuring new development is designed to be able to accommodate likely changes such as increased uptake of electric vehicles and heat pumps will ensure it is well placed to adapt to future changes in our energy systems.
- Development of local, decentralised energy schemes involving community owned renewable generation, similarly improves the UK's energy security and reduces the likelihood of future energy shocks.
- Action to encourage sustainable transport, which may involve reducing the space taken up by cars, can provide potential for more tree planting and green space. This can increase the resilience of urban areas to withstanding heatwaves and also increase absorption of heavy rainfall, thus reducing flooding.
- The nature, scale and frequency of severe weather events are hard to predict but when these events occur, councils are on the frontline in providing an immediate response. They are also responsible for dealing with many of the longer-term consequences, such as damaged roads and infrastructure.
- Some households will be less resilient than others to future changes, whether these are climate impacts or energy costs. Councils can work to identify the most vulnerable groups and target resources at reducing their vulnerability or increasing their resilience.

## The business case for action; what difference can taking action make?

### Enabling local energy generation and reducing energy demand

Increasing the proportion of energy generated by renewable technologies (particularly coupled with the growth in energy storage technologies) and making improvements in the energy efficiency of domestic and commercial buildings, all increase the energy security of the UK by reducing our reliance on imports of oil and gas. Given the volatility of international oil prices and our reliance on oil supplies from areas of the world that have historically been politically unstable, increasing our energy security can provide a more stable foundation for members of the public and businesses to budget for their energy expenditure while reducing our vulnerability to wider geopolitical events<sup>6</sup>.

### Reducing energy demand

Domestic fuel bills have risen considerably in the past ten years<sup>7</sup>.

As well as reducing fuel poverty, making homes more efficient can also reduce overheating during heatwaves. Some of the costs associated with such severe weather events will fall on council budgets

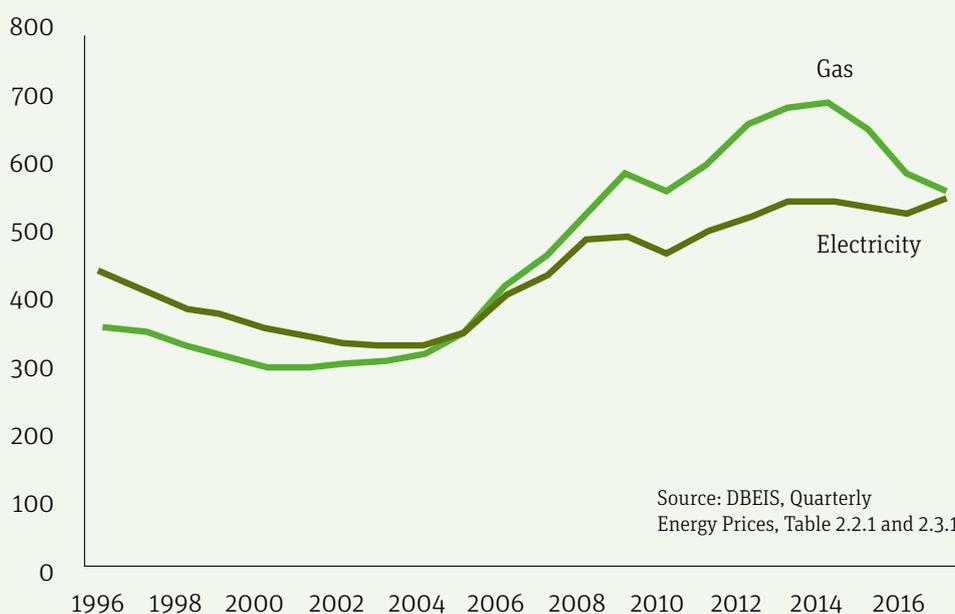
due to the new roles and responsibilities for local authorities under the Health and Social Care Act.

There are also benefits to social landlords from investing in the energy efficiency of their homes. Research carried out by Sustainable Homes found that<sup>8</sup>:

- As homes become more energy efficient, they are void for a shorter length of time – on average, 31% shorter for band B properties compared to those in bands E and F.
- Landlords with more energy efficient stock spend less on refurbishing void homes, less on repairs and less on staff time to manage voids.
- Rent arrears are on average half a month higher in Band F properties than in other bands.
- Other cost savings identified include time spent seeking overdue rent payment, legal costs and court costs which decline by around 35% for more energy efficient homes.

### AVERAGE DOMESTIC FUEL BILL

Typical consumption, all payment methods, 2010 prices





## Glasgow City Council – high standards for energy efficiency in new developments

Glasgow City Council is leading the way in Scotland in terms of energy efficiency standards for new-build domestic developments. As of 2018, homes are expected to comply with the demanding gold standard for sustainability set as part of the Scottish Building Standards<sup>9</sup>.

New homes must demonstrate an improvement of 27% against the Target Emissions Rate over the 2015 Building Regulations. The gold standard also sets requirements for water efficiency and provision for sustainable transport options as well as minimum noise and natural lighting levels. Pilot programmes to build social housing to near Passivhaus\* standards are underway.

\* Passivhaus buildings provide a high level of occupant comfort while using very little energy for heating and cooling. Thermal comfort is achieved solely by post-heating or post-cooling the fresh air flow required for a good indoor air quality, without the need for additional recirculation of air.

## Parity Projects – supporting cost effective, high quality housing retrofit

Ashden winner Parity Projects has developed market-leading housing stock assessment tools that help Registered Providers, local authorities and private landlords design and implement strategic retrofit programmes for their housing stock. Carbon Reduction Options for Housing Managers (CROHM) has been used to undertake assessments covering around 2.5 million homes across the UK, in all sectors of the market. The software enables housing managers to identify cost-effective retrofit programmes, analyse and report on energy performance data for their property portfolio, and make considerable savings on the cost of work programmes through having high quality



data for individual properties, prices and applicable measures<sup>10</sup>.



### Enabling local energy generation

Diversifying and decentralising energy supply can increase the resilience of communities to withstand both energy price increases and extreme weather events. This involves increasing the number of smaller-scale sources of energy such as solar panels, heat pumps and district heating networks.

Relying on a centralised supply of heat and power, mostly generated from fossil fuels, makes our energy network vulnerable to numerous threats,

including energy supply issues, potential water shortages brought on by climate change, cyber security attacks.

Cities are well placed to take a lead in this area; localised control and decision-making can make energy supply increasingly resilient. Decentralised power systems can also offer more competitive prices than traditional energy suppliers, with decentralised tariffs creating more stable costs, creating resilience to future increases in fossil fuel costs.

“When you’ve seen extreme weather events like hurricane Sandy, or when you look at systems failures like the New York blackout, the only buildings that were still functioning were those that had on-site, decentralised energy systems.

Syed Ahmed, director, Energy for London<sup>11</sup>

### Energy Local – cutting electricity costs for those using locally generated power

Energy Local CIC is enabling communities to purchase locally generated renewable energy at a preferential price. Most community energy schemes feed directly into the grid (with energy suppliers typically paying 5–6p/kWh) and people living nearby buy it back at three times the price. But thanks to Energy Local, members of an Energy Local Club, the first of which is in Bethesda, Wales, are able to use local hydro-generated electricity at a price that is mutually beneficial.

The scheme involves using new smart meter technology to allow households to match their use to local renewables. This is directly reducing fuel poverty, generating additional funds for renewable generators and keeping energy spend in the local economy<sup>12</sup>.





## **Repowering – bringing local energy to hard to reach communities**

Ashden award winner Repowering delivers community-based renewable energy. They have worked with housing estates which have often been given up on in the past and delivered projects in some of the most deprived councils including Lambeth and Hackney. These projects get local people involved, providing opportunities to gain skills and confidence. Their grass roots approach, which involves communities, rather than imposing projects on them, means they can identify the most useful opportunities for local residents and help facilitate engagement between neighbours that might otherwise have never happened. This approach is behind the success of implementing projects in areas which were previously deemed 'hard to reach'.





### Reduce overheating

As our climate changes, more buildings will be prone to overheating. The Climate Change Committee recently reported that around 4.5 million UK homes are already overheating, even in relatively cool summers<sup>13</sup>.

New buildings need to be designed to be adapted to our future climate – i.e. hotter summers as well as increased flood risk in certain areas. The Good Homes Alliance has commissioned a project to better support local authorities and project teams in the evaluation of overheating risk in new residential planning applications, and to raise awareness of possible design solutions. The guidance is due to be published in summer 2019<sup>14</sup>.

For existing buildings, low energy cooling systems such as Monodraught's COOL-PHASE® units, will offer cooling without the energy consumption, and associated carbon emissions, of air conditioning. For homes, there are a number of retrofit options; insulating homes properly can prevent heat loss in the winter (thus cutting carbon and costs) and also cut down on overheating in the summer. Planting deciduous shade trees can reduce overheating in the summer whilst also acting as a carbon sink.

### Exeter City Council – developing Passivhaus homes

Exeter City Council has taken a planned approach to low energy development for ten years. The council has already developed over 103 certified Passivhaus homes and there are multiple other low energy projects in the pipeline including a leisure centre, swimming pools, offices and care homes.

Key factors that shape their developments are low energy Passivhaus, climate readiness and improving health through building biology, including elements of permaculture landscape. Working with Exeter University and the Met Office (which is based in Exeter), Exeter Council has tested building designs against predicted future climate conditions to ensure resilience to 2080 and beyond. This approach is already delivering benefits, with residents reporting significant health improvements and better air quality<sup>15</sup>.

## Monodraught – low energy cooling systems to prevent overheating

While it is possible to design new buildings in the UK to keep cool using natural ventilation, there are many existing buildings that overheat in the summer. Offices and classrooms in older buildings are particularly prone to overheating, as the installation of IT equipment has added heat sources that were not present when the buildings were first designed. And this risk of overheating becomes greater as our climate warms. Installing cooling systems, such as traditional air conditioning, can be very energy intensive. Ashden winner Monodraught has developed a low energy cooling and ventilation system – COOL-PHASE® – which reduces electricity consumption by up to 90% compared to standard air conditioning.



A significant proportion of COOL-PHASE® units sold so far have been installed in schools, colleges and universities. As well as saving money for the customers, there are also benefits to the students, as research has shown that temperature and CO<sub>2</sub> levels can affect concentration and learning outcomes, and COOL-PHASE® works to keep these within acceptable limits.



## Passivhaus Trust – promoting the principles of Passivhaus design

Buildings have a huge impact on the environment and on people's quality of life but, once in use, they often fail to achieve the level



of energy efficiency they were designed to. The end result is buildings that aren't comfortable to live or work in, higher energy bills and higher CO<sub>2</sub>-emissions. Passivhaus buildings use passive design techniques and controlled ventilation to reliably achieve significant energy savings whilst providing high levels of comfort and good indoor air quality. Ashden winner the Passivhaus Trust is an independent, non-profit organisation that exists to promote the principles of Passivhaus design as an effective way of reducing energy use while providing high standards of comfort. It aims to preserve the integrity of Passivhaus standards and methodology, promote Passivhaus principles to industry and government, and to undertake research and development on Passivhaus standards in the UK.



### Ensuring new development can accommodate likely changes

City regions in particular, and all local authorities to some degree, can use their planning powers to ensure that new developments are designed in a way that they can accommodate future low carbon technologies, thus increasing resilience to future changes while minimising carbon emissions. This can include:

- Ensuring provision for electric vehicles; the Government's Road to Zero Strategy outlines a number of ambitious measures including a push for chargepoints to be installed in newly built homes, where appropriate, and new lampposts to include charging points, potentially providing a massive expansion of the plug-in network. Local authorities can ensure that their planning

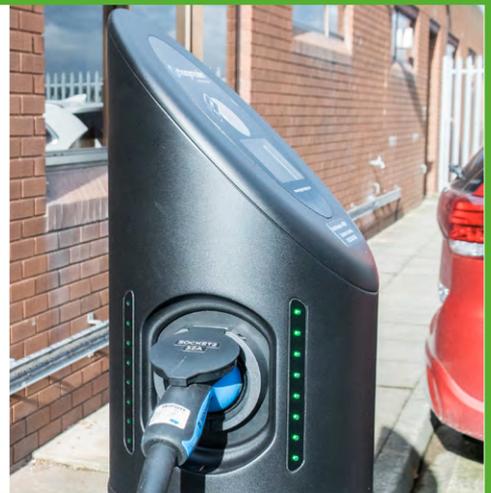
documents are updated in line with these suggestions and can also consider how to support EV charging infrastructure for existing homes.

- Designing properties to be suitable for heating systems that use heat pumps rather than gas central heating; e.g. with underfloor heating.

Planning powers can also be used to ensure that new developments are designed to be appropriate for the changing climate. For example, The Committee on Climate Change Adaptation Sub-Committee has stated that action is needed to begin to adapt the UK's built environment, so that homes and other buildings can be comfortable and safe in the higher temperatures that are forecast with climate change<sup>17</sup>.

### London Plan – ensuring new development accommodates electric vehicles

The London Plan Policy 6.13 stipulates that developments in all parts of London must ensure that 20% of parking spaces (both active and passive) provide an electrical charging point to encourage the uptake of electric vehicles. It also states that in locations with high public transport accessibility, car-free developments should be promoted, while still providing for disabled people<sup>18</sup>.





## Edinburgh City Council's Electric Vehicle Framework

Edinburgh Council has introduced an Electric Vehicle Framework which mandates that for residential developments where there are ten or more parking spaces, every six spaces should include an electric vehicle charging point which will be counted as part of the overall spaces provided. For all residential developments, fast charging points are to be provided, while for all non-residential developments rapid charging points are required. The policy also calls for provision to be made for infrastructure to allow all new individual dwellings with a driveway or garage to have vehicle chargers in the future. This includes ensuring that there is capacity in the connection to the local electricity distribution network. Provision should also be made for the connection infrastructure required to meet future demand for electric vehicles<sup>19</sup>.

### Reducing car use and ensuring some of the freed-up space is depaved and planted

Schemes to encourage walking within cities may include narrowing roads and widening pavements. Adding planting to the pavements, particularly in the form of a buffer between pedestrians and traffic, creates a more pleasant environment and can further encourage walking<sup>20</sup>. At the same time, introducing a planted strip between pavement and road, with trees and vegetation, can provide natural cooling – thus helping to mitigate the impact of heatwaves – and reduced surface flooding during extreme weather events.

Reducing the impact of extreme weather events can directly benefit the local economy. For example, small firms directly affected by the 2013/14 winter storms suffered average damages of £1,531 per business<sup>21</sup>.

### Reducing car use and travel costs through encouraging car sharing

Encouraging car sharing will reduce carbon emissions and can also help to protect people from the impact of rising fuel prices. One of the fantastic things about car sharing is that, as a driver, you can cut your travel costs by filling your empty seats, and as a passenger, car sharing is often much more cost-effective than public transport.

## Medellin, Colombia – developing urban green corridors

The city of Medellin in Colombia is a finalist for the 2019 Ashden Cooling for People Award. In the 1990s Medellin had an unenviable reputation as the world's most dangerous city.

Now the city is embracing the fight against climate change with an ambitious urban greening project, Green Corridors. This initiative has multiple goals, including improving appearance, reducing the urban heat island effect, increasing biodiversity and reducing air pollution. Working with the city's botanical gardens, Medellin has planted 65 hectares of greenery on the central reservations of 18 major roads and 12 waterways (the city is surrounded by mountains, and streams flow down gorges to the Medellín river). Many of the waterways run through poor suburbs that sprung up in the last 50 years as informal settlements.



One of the major impacts has been a reduction of littering, with communities undertaking maintenance of the plants. There are over 75 city gardeners who have worked on this project and been trained by the Botanical Gardens including many from disadvantaged backgrounds. The project is expected to reduce urban temperatures by 4 degrees once the trees are fully grown in the next 25 years<sup>22</sup>.





Photo copyright Liftshare

## How local authorities and city regions can foster lift sharing

We asked Ashden winner Liftshare what local authorities can do to encourage lift sharing; this is their step by step guide.

1. Start by **analysing the current situation** to determine current car occupancy levels. This data will both act as a very useful benchmark but also show policy makers just how huge the potential is. This can be done by using IR cameras on key roads to count how many people are in each car, and/or using mobile phone data to determine where people travel from to. Employers can be asked to carry out Liftshare's mobility scoping exercise using employee postcodes to determine all the travel options available to all staff as well as gaps in provision.
2. Set up a **city/regionwide lift sharing scheme**. This makes promoting the concept and tracking the impact much easier – e.g. [www.carsharewarwickshire.com](http://www.carsharewarwickshire.com)
3. **Promote lift sharing** to the public, for example through utilising variable road signs to promote sharing when they are not being used for other things and having a 'liftshare' week campaign each year. For example, see Manchester's [www.shareyourjourney.co.uk](http://www.shareyourjourney.co.uk), which links to [liftshare.com/uk/community/tfgm](http://liftshare.com/uk/community/tfgm)
4. Have a clear **strategy for engaging with employers**. Liftshare has found that undertaking a 'Smart Mobility Scoping' report for as many large employers across the region as possible, as quickly as possible, provides a powerful route to engagement. It helps secure buy-in from senior stakeholders at employers and encourages them to invest in sustainable travel options. It is also providing the local authority with valuable

aggregated data and analysis of journey options available to commuters to each location, helping to build additional capacity efficiently. Liftshare have developed a simple cost benefit calculator that clearly shows the financial benefits of an employer setting up a Liftshare scheme – so if limited budgets are a challenge, they can help cities make a compelling business case to local employers.

5. Ensure **lift sharing features in any wider plans to introduce a Clean Air Charging Zone (CAZ)**, workplace parking levy, congestion charging or similar. When London introduced its congestion charge, the increase in bus use was well reported. However, car occupancy actually increased even more than bus use. When prices go up, people start sharing; there is a huge opportunity to make the most of this shift through initiatives and marketing to encourage even more sharing. Many of those affected by the CAZ will have the most polluting vehicles that they will no longer be able to afford to drive. Lift sharing increases people's resilience to these price rises whilst reducing the number of cars on the road.

Liftshare are working with Enterprise on an innovative Shared Asset Model, which has the potential to give people access to an electric shared car at a cost that is far lower than if they were to drive their own car (even an 'old banger'). They believe that this model could fundamentally disrupt the need for anyone in an urban area to own a car.



### Increasing resilience amongst the most vulnerable

Some households, businesses and communities will be more resilient to adapting to future changes – be they in terms of climate, energy costs or other changes in the energy system such as the prevalence of electric vehicles or the introduction of time of use energy tariffs. Tools are available to help councils identify vulnerable communities and there is guidance on how they can best be supported. This could involve action like the fuel poverty referral networks referred to in the Health Co-benefits section. Or it could involve providing support to SMEs to help them switch from diesel to electric vehicles.

### Vulnerability to climate impacts or energy price rises

The main drivers of vulnerability to climate impacts or energy price rises include:

- Personal features of the individual, such as age and health, which affect sensitivity to climate impacts;
- Environmental characteristics, such as the availability of green space, quality of housing stock or elevation of buildings, which can increase or offset exposure to flooding or heat;
- Social and institutional context, such as levels of inequality and income, the strength of social networks, the cohesion of neighbourhoods and the day-to-day practices of institutions, such as care regimes in nursing homes, which affect people's ability to adapt.

### Wirral JSNA – inclusion of climate change

In England, local authorities, Clinical Commissioning Groups and other public sector partners are required to produce a Joint Strategic Needs Assessment to provide evidence on the health and wellbeing needs of their local community. One local authority, Wirral Council have included a detailed section on climate change and health in their Joint Strategic Needs Assessment. Wirral have identified the groups that will be most vulnerable to climate change and the specific health impacts such as increased respiratory diseases, cardio-vascular illnesses, skin cancer and mental health<sup>23</sup>.



### Islington – targeting support at vulnerable households

About 30% of Islington's residents are faced with the dilemma of heating their homes or eating properly.

Organisations, from GP surgeries and health visitors to housing and community organisations, refer vulnerable people to the SHINE team. SHINE then gives advice on fuel debt and energy efficiency, and helps residents access discounts on fuel bills and grants for new boilers. This has led SHINE to save 3,200 tonnes of CO<sub>2</sub> and £700,000 annually for its beneficiaries<sup>24</sup>.



## Links to statutory duties

### Emergency planning

#### The Civil Contingencies Act (CCA) 2004

This Act establishes a clear set of roles and responsibilities for those involved in emergency preparation and response at the local level and requires organisations including emergency services, local authorities and NHS bodies to prepare for adverse events and incidents. This would include responding to severe weather events such as flooding or heatwaves.

### Health and wellbeing

#### Joint Strategic Needs Assessments

In England, local authorities, Clinical Commissioning Groups and other public sector partners are required to produce a Joint Strategic Needs Assessment to provide evidence on the health and wellbeing needs of their local community.

#### Health and Social Care Act 2012

The Health and Social Care Act 2012 introduced a new duty for all upper-tier and unitary local authorities in England to take appropriate steps to improve the health of the people who live in their area<sup>25</sup>.

### Energy

#### Home Energy Conservation Act (HECA)

The 1995 Home Energy Conservation act requires all of England's local authorities to report on action to improve energy efficiency in all residential accommodation in their area and to report every two years to BEIS on progress in implementing improvements.

### Flood risk

#### Flood and Water Management Act 2010

In England, county councils and unitary authorities, as Local Lead Flood Authorities (LLFAs), are required to lead in managing local flood risks. LLFA responsibilities include the preparation and maintenance of a strategy for local flood risk management, and a duty to cooperate with other Risk Management Authorities.

## What role can decision makers play?



**Leadership** – Councils can ensure that emergency plans, community risk registers and associated risk assessments take into account the impacts of climate change.



**Partnership** – Councils can facilitate collective, coordinated action by a range of organisations including emergency services, the electricity distribution network operator and community groups.



**Communicating** – Councils can raise awareness amongst the communities they serve about the risks posed by climate change and advocating for their community in seeking to build resilience to those risks.



**Planning** – Councils can use planning powers to reduce car use and increase green spaces, ensure provision of electric vehicle charging infrastructure, and homes that can be fitted with heatpumps in the future.



**Signposting** – Councils can signpost vulnerable households to existing support, as necessary.

## Opportunities for action

Topic	Resilience
<b>Procurement</b>	<ul style="list-style-type: none"> <li>Where appropriate, include social value clauses relating to energy supply procurement requiring provision of energy audits for council buildings.</li> </ul>
<b>Delivering services</b>	<ul style="list-style-type: none"> <li>Invest in council stock/buildings to reduce need for energy, limit their tendency to overheat and enable EV access.</li> <li>Ensure contingency plans are in place for council services where they impact on vulnerable groups, e.g. continuity of social care in the event of flooding.</li> </ul>
<b>In plans and strategies</b>	<ul style="list-style-type: none"> <li>Ensure policies reflect and respond to evidence on key local climate risks and opportunities.</li> <li>In planning policies, include provision for EV charging points to enable properties, including those without off-street parking, to access EVs.</li> <li>Reduce paving and increase planting in urban areas to reduce surface water runoff, encourage walking and reduce overheating.</li> </ul>
<b>In partnership</b>	<ul style="list-style-type: none"> <li>Work with Local Enterprise Partnerships to ensure climate risks and opportunities are built into economic growth plans.</li> <li>Work with housing providers to ensure homes are built/retrofitted to reduce need for energy, limit overheating and enable EV access.</li> <li>Work with DNOs to ensure that additional electricity loads arising from electrification of heat/transport as well as from new developments are supported at lowest cost.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>Work with partners to establish high-quality training programmes that address the needs of residents and the low carbon sector.</li> </ul>

- <sup>1</sup> See: [www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change](http://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change)
- <sup>2</sup> See: <https://www.sustainabilitywestmidlands.org.uk/wp-content/uploads/FINAL-CR-Business-Case-for-Adaption-Report.pdf>
- <sup>3</sup> See: <https://www.local.gov.uk/sites/default/files/documents/climate-ready-councils-bu-351.pdf>
- <sup>4</sup> See: [www.climatejust.org.uk/about](http://www.climatejust.org.uk/about)
- <sup>5</sup> See: <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SNO415>
- <sup>6</sup> Jennings N, Fecht D, de Matteis S, 2019. Co-benefits of climate change mitigation in the UK: What issues are the UK public concerned about and how can action on climate change help to address them?. Grantham Institute, Imperial College
- <sup>7</sup> See: <http://researchbriefings.files.parliament.uk/documents/SNO4153/SNO4153.pdf>
- <sup>8</sup> Sustainable Homes, 2015, Touching the Voids
- <sup>9</sup> See: <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=40325&p=0>
- <sup>10</sup> See: [www.parityprojects.com](http://www.parityprojects.com)
- <sup>11</sup> See: <https://www.theguardian.com/sustainable-business/2014/nov/20/resilient-energy-systems-uk-adapt>
- <sup>12</sup> See: <http://www.energylocal.co.uk/>
- <sup>13</sup> See: <https://www.theccc.org.uk/2019/02/21/uk-homes-unfit-for-the-challenges-of-climate-change-ccc-says/>
- <sup>14</sup> See: <http://goodhomes.org.uk/research/early-stage-overheating-guidance>
- <sup>15</sup> See: <https://www.houseplanninghelp.com/wp-content/uploads/2016/09/Exeter-City-Council-Scheme-Information.pdf>
- <sup>16</sup> See: <https://www.gov.uk/government/news/government-launches-road-to-zero-strategy-to-lead-the-world-in-zero-emission-vehicle-technology>
- <sup>17</sup> See: <https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/how-the-uk-is-preparing/>
- <sup>18</sup> See: <https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan/london-plan-chapter-six-londons-transport/pol-27>
- <sup>19</sup> See: [http://www.edinburgh.gov.uk/downloads/file/11650/edg\\_amended\\_october\\_2018](http://www.edinburgh.gov.uk/downloads/file/11650/edg_amended_october_2018)
- <sup>20</sup> A Safe Pedestrian Walkway; Creation a Safe Public Space Based on Pedestrian Safety Sepideh Movahed, Sepideh Payami Azad & Homa Zakeri\* *Procedia – Social and Behavioral Sciences* 35 (2012) 572 – 585
- <sup>21</sup> See: <https://www.local.gov.uk/sites/default/files/documents/climate-ready-councils-br-ad1.pdf>  
<https://www.local.gov.uk/sites/default/files/documents/climate-ready-councils-br-ad1.pdf>
- <sup>22</sup> See: <https://www.acimedellin.org/medellins-green-corridors-nominated-to-the-ashden-2019-international-awards/?lang=en>
- <sup>23</sup> See: <https://www.wirralintelligenceservice.org/jsna/climate-health/>
- <sup>24</sup> See: <https://www.islington.gov.uk/energy-and-pollution/energy/shine>
- <sup>25</sup> House of Commons, “Local authorities’ public health responsibilities (England)”, 2014. Available: <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SNO6844> [Accessed 24 February 2019]

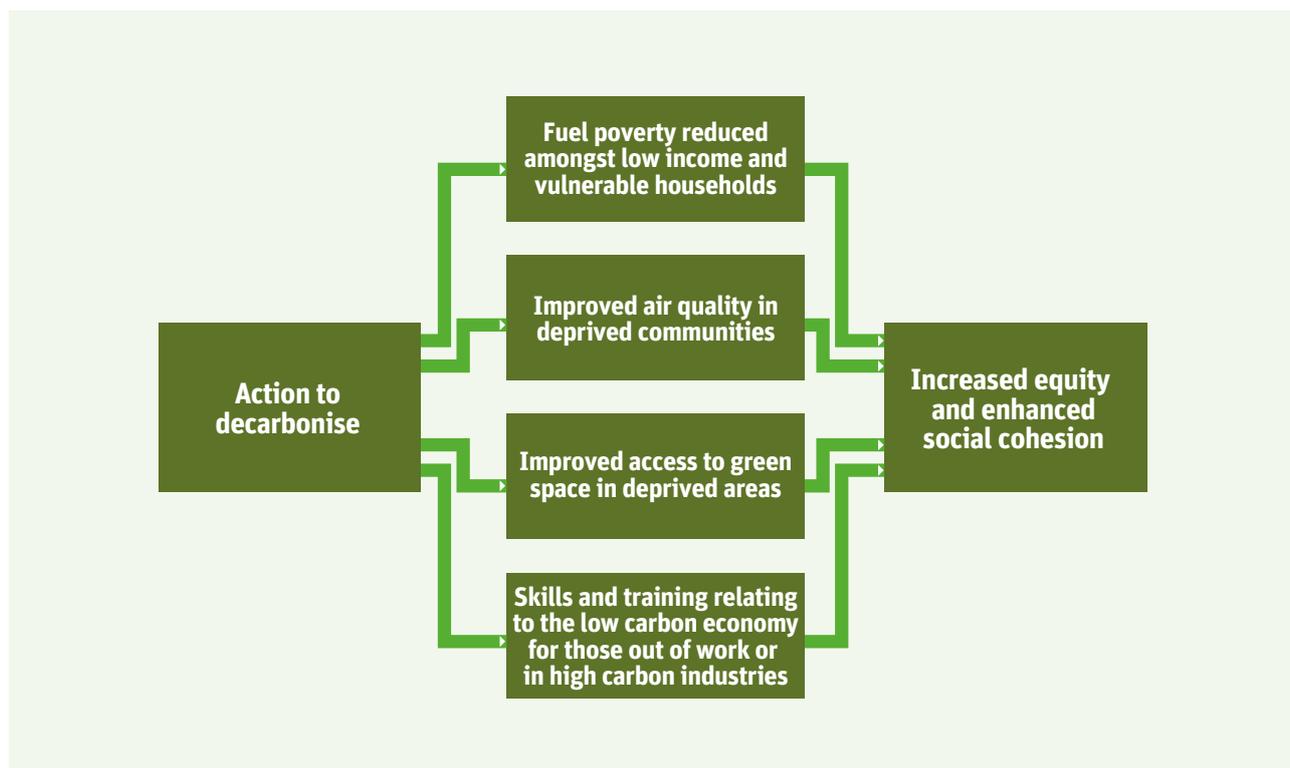
# A toolkit for city regions and local authorities:

## Chapter 5: Equity and social cohesion



**Climate action co-benefits**  
Cutting carbon and improving people's lives

## Climate action co-benefits – equity and social cohesion



### Climate action and equity – key facts

- 11% of English households are in fuel poverty<sup>1</sup>.
- 40% of low-income households face the choice between ‘heating or eating’<sup>2</sup>.
- People living in the most deprived urban areas are more exposed to poor air quality than those in less deprived areas<sup>3</sup>.
- In the most deprived groups, the number of mortalities is halved in areas with the greenest space<sup>4</sup>.
- Community energy projects can deliver economic and social benefits for disadvantaged groups with the potential for significant reductions in energy bills.

## Accessing facts that relate to your area

Topic	Source	Description	Link
Air quality	UK Air: Air Information Resource	A library of data on air quality including local air pollution forecasts and modelled data	<a href="https://uk-air.defra.gov.uk">https://uk-air.defra.gov.uk</a>
	London Atmospheric Emissions Inventory (LAEI) 2013	Borough-level emissions and concentrations data	<a href="https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013">https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory-2013</a>
Fuel poverty	Fuel poverty sub-regional statistics	Includes local authority-level data on the number and proportion of households in fuel poverty	<a href="https://www.gov.uk/government/collections/fuel-poverty-sub-regional-statistics">https://www.gov.uk/government/collections/fuel-poverty-sub-regional-statistics</a>
Excess winter mortality	ONS – Excess winter mortality in England and Wales	Excess winter mortality figures by local authority and other demographics	<a href="https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/excesswintermortalityinenglandandwales/referencetables">https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/excesswintermortalityinenglandandwales/referencetables</a>

## Why it matters

Through joined-up thinking, action on climate change can also help to address inequalities and improve social cohesion:

- Making homes more efficient and supporting people to reduce their energy bills can help some of the most vulnerable in our society.
- Vulnerable people and those on lower incomes are often those who are most disadvantaged in relation to issues like poor air quality, energy costs, and access to green space.
- Community energy projects can play a key role in tackling fuel poverty, making carbon savings and delivering a range of other social and economic benefits, like building stronger community ties, local jobs and skills.
- With targeted investment in skills and training, jobs can be created in low carbon sector for those previously not in employment or whose high-carbon jobs are under threat.
- ‘Green and blue infrastructure’ (trees, parks and green spaces) can increase life expectancy and reduce health inequalities. If you live in a deprived inner-city area you have access to five times fewer public parks and good-quality general green space than people in more affluent areas.

## The business case for action; what difference can taking action make?

### Housing and inequality

11% of households in England are considered to be in fuel poverty. Small measures (energy switching, insulation, behaviour change) can make a significant difference to people's incomes, especially those with low incomes or who are vulnerable to the impacts of the cold.

- Improving the energy efficiency of individual properties has a significant impact on how much it costs to heat them.
- A disproportionate number of individuals who experience fuel poverty live in the private rented sector: rented accommodation has the lowest energy efficiency rating of any housing sector<sup>5</sup>.
- Over 320,000 fuel poor households in England live in properties rated below a band E EPC rating (F and G ratings) and these properties cost an average of £1,000 more per year to heat compared to a typical home<sup>6</sup>.
- Increasing the energy efficiency of properties can therefore save a significant amount of

money for the fuel poor while reducing carbon emissions<sup>7</sup>. Given that the fuel poor spend a disproportionate of their income on energy consumption, energy efficiency measures can have a positive financial redistributive effect if those measures are funded appropriately.

Household energy efficiency improvement projects can create jobs, upskill the workforce and improve productivity<sup>8</sup>.

They can also help to improve equality of opportunities for those from lower-income groups:

- Poor quality housing negatively affects the ability of young people to learn at school and study at home, leading to lower educational attainment<sup>9</sup>, subsequently increasing their chance of unemployment and poverty.
- Nearly a fifth of parents say that they regularly go without food to ensure that their children have enough to eat<sup>10</sup>, with knock-on impacts on nutrition and household relationships.



### **Switchee – smart heating controls for social housing tenants**

Effective use of domestic heating controls can minimise energy use, saving money and CO<sub>2</sub>, and smart thermostats make it easier for households to optimise their heating. However, they are often not suitable for social housing, as they usually require wifi to work effectively, and not all tenants have this.



Switchee has developed a smart thermostat which works without wifi or mobile phone apps, and automatically adjusts a household's heating with minimal interaction from residents. Energy use can be cut by up to 15%, and data fed back to housing associations and local authorities helps them to monitor the state of their housing stock and deliver better outcomes for their tenants<sup>11</sup>.



### **Islington Council – cutting fuel bills through external wall insulation**

Islington Council installed external wall insulation on 269 properties in the Holly Lodge Estate in 2014. An evaluation survey conducted a year after the insulation had been installed showed that the proportion of people who restricted their heating due to concern over their bills decreased from 73% (110 out of 150 people) before the insulation was installed to 20% (28 out of 140 people). The median monthly bill amount over winter decreased by £10 from before the insulation was installed to the final survey: from £70 per month to £60 per month<sup>12</sup>.

### **Swaffham community heat scheme – bringing low cost renewable heat to an off-gas community**

The Swaffham Prior Community Land Trust approached Cambridgeshire County Council in 2017 to collaborate on a community heat scheme which will enable the village to stop relying on oil and move to a renewable heat source for heating and hot water needs. After exploring numerous low carbon heating options, a detailed feasibility study suggested that a district heat network with an energy centre, which has a combination of heat being extracted from groundwater and mains gas, would be the most viable option. As a self-sustaining and low carbon fuel system, this community heat project would ensure that off-gas households are no longer vulnerable to the fluctuating prices of oil. The proposed project will act as a pilot project for both the government and similar villages looking to convert to sustainable heat systems<sup>13</sup>.

### Air quality inequalities

Decarbonising the transport sector will provide health benefits that save the NHS money while simultaneously addressing health inequalities<sup>14</sup>.

Air pollution affects everyone, but the most socio-economically disadvantaged almost always suffer the most from the health effects of pollution. Other groups disproportionately affected include older people, children, pregnant women, individuals with existing medical conditions, and communities in areas of higher pollution.

There are strong geographical differences in the occurrence and concentration of pollutants. Analysis shows that these patterns, which vary by pollutant type, are related to measures of

socio-economic status, with pollution sources and higher concentrations of ambient pollution typically found in more socially disadvantaged areas<sup>15</sup>.

Those most affected by air pollution in the UK are often those least responsible for producing it – vehicles passing through neighbourhoods are primarily responsible for causing the pollution rather than travel by those living within the area, as low-income communities are more likely to use public transport than private vehicles<sup>16</sup>.



A video telling the story of someone whose health is affected by poor air quality can be found [here](#).



## Funding for green screens to protect schools in the most polluted areas

The Mayor of London offers funding to schools located next to the city's most polluting roads to create pollution barriers<sup>17</sup>.

Greening playgrounds with climbing plants across entire walls, hedges, and wider green infrastructure can be beneficial to boosting air quality and reducing exposure to harmful emissions from busy roads. A recent report by the Air Quality Expert Group found a 'green barrier' between cars and pedestrians can halve the levels of pollution behind the barrier'. The plants also act as a carbon sink.

The photos below show green screens installed at a primary school located close to London Victoria train and bus stations with high levels of air pollution. A series of ivy screens were planted, with herb at the base of the



Photo credit: [www.MeristemDesign.co.uk](http://www.MeristemDesign.co.uk)

screens. As well as improving air quality in the playground, the school plans to incorporate the green screen and planting into the children's education, helping them to become, "the adults who can help reduce the harmful impact of climate change and create a better London and world".



## Sustrans school streets – cutting air pollution close to schools

Streets around schools are often dominated by idling cars and speeding traffic at drop-off and pick-up times, resulting in air pollution and an environment that is generally unpleasant for walking and cycling. Sustrans School Streets is a test programme that aims to ease the congestion, poor air quality and road safety concerns that many schools experience during drop-off and pick-up times, by facilitating timed traffic restrictions on the road outside the school gates. The initiative is being implemented by a number of London boroughs as well as Edinburgh and Solihull<sup>18</sup>.



### Green space

Increasing the number of green and blue spaces (such as parks, trees, green roofs and ponds) within a community provides a multitude of benefits; as well as reducing flood risk, they can also reduce overheating and improve air quality. They have also been shown to have a positive impact on life expectancy and physical and mental wellbeing.

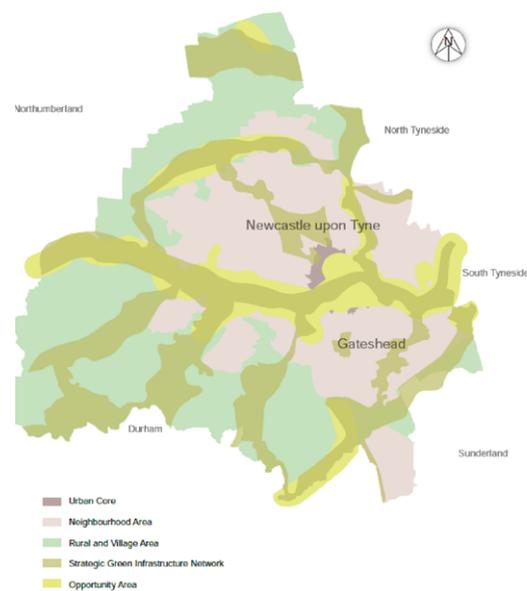
However, access to green space is not equal across the population of England. People living in the most deprived areas are less likely to live

in the greenest areas and will therefore have less opportunity to gain the health benefits of green space compared with people living in the least deprived areas<sup>19</sup>.

Increasing the use of good quality green space for all social groups is likely to improve health outcomes and reduce health inequalities. It can also bring other benefits such as greater community cohesion and less social isolation<sup>20</sup>.

### Newcastle's Green Infrastructure Delivery Framework

Newcastle City Council published a detailed Green Infrastructure Delivery Framework in December 2018. Newcastle have built on their Open Space assessment to identify areas where green space is inadequate, particularly play areas. This is informing a 3-year upgrade programme starting in 2019, which includes better use of green space e.g. for community food growing<sup>21</sup>.



1: Strategic Green Infrastructure Network and Opportunity Areas identified in Core Strategy and Urban Core Plan (2015-2030)  
© Copyright and database right [2017]. Ordnance Survey [100019569].

### Access to skills

As explained in Chapter 4, the transition to a low carbon economy risks leaving some workers behind. Councils can support labour market flexibility by providing training, or funding towards training, for individuals. There is also scope to work with and support initiatives, such as Repowering, which offer work placements and apprenticeships to local people.

## Repowering – training young people in deprived communities

Ashden award winner Repowering<sup>22</sup> delivers community-based renewable energy. They have worked with housing estates which have often been neglected in the past and delivered projects in some of the most deprived parts of London including Hackney and Brixton. These projects get local people involved, providing opportunities to gain skills and confidence. Repowering provides a paid youth training programme to do this. The accredited programme<sup>23</sup> is targeted at upskilling 16–25 year olds and gives an insight to sustainable energy, social enterprise and community development. Training includes activities such as solar panel making, visits to renewable energy technology sites, discussions with industry specialists and more general skills such as digital marketing, brand building, community engagement and surveying. The grass roots approach it takes in involving communities, rather than imposing projects on them, means that they can identify the most useful opportunities for local residents and help facilitate engagement between neighbours that might otherwise have never happened. This approach is behind the success of implementing projects in areas which were previously deemed ‘hard to reach’.



## Councils in Norfolk and Suffolk fund a new training centre on offshore wind

Great Yarmouth, on the Norfolk coast, is ranked 20th amongst local authority districts with the highest proportion of their neighbourhoods in the most deprived 10% of neighbourhoods nationally.

The town’s port is being used as the construction base for ScottishPower’s £2.5 billion East Anglia One wind farm, due for completion next year. It has also secured an operations and maintenance deal for Swedish energy firm Vattenfall’s two wind farms, which will be the biggest in the world. These contracts will create up to 150 jobs for 25 years, creating hundreds more in the supply chain.

To help ensure local people can benefit from these opportunities, the East of England Offshore Wind Skills Centre opened in the town in December 2018. It’s a collaborative regional training and competence facility that will support local people wishing to reskill and gain sustainable employment in the offshore wind industry on the New Anglia Energy Coast. The Centre has been made possible by a £1.1 million grant from the New Anglia Skills Deal Programme, provided by Norfolk County Council, Suffolk local authorities and the Education and Skills Funding Agency<sup>24</sup>.



Photo credit: East Coast College

## Climate change – a shared issue across all communities

Climate change is one of the few issues that has a global impact and provides an opportunity for getting all sections of the community involved in identifying solutions, increasing social cohesion.



### Engaging BAME communities in environmental sustainability

Bristol Green & Black ambassadors was a joint project run by Ujima Radio (a station targeted at Bristol's Afro-Caribbean community), the Bristol Green Capital Partnership and Bristol University. Activities included conducting community research and projects to encourage stronger engagement across BAME and environmental sustainability communities, creating media projects and monthly radio shows focussed on sustainability and engaging with organisations in the city to constructively challenge and influence how decisions are made, to ensure a stronger voice for marginalised communities<sup>25</sup>.

### The Active Wellbeing Society – free cycle training for communities where cycling is not widespread

The Active Wellbeing Society (TAWS)<sup>26</sup> runs programmes to increase physical activity in the Midlands and beyond. Originally part of Birmingham City Council, TAWS now operates as a separate community benefit society. Their Big Birmingham Bikes<sup>27</sup> scheme which won an Ashden Award in 2017 has provided thousands of free bikes for adults and children living in high areas of deprivation, where sedentary lifestyles can be more common. For communities where cycling is not widespread, and where cost is often a prohibitive barrier, free cycle training gives people the confidence to go out and cycle safely, especially if others from similar backgrounds are joining in too. One unique aspect of the programme is the GPS tracking of cyclists (with permission given by participants). The tracking data shows thousands of bike recipients cycling at least 30 minutes a week, with hundreds cycling at least



five times per week. The GPS tracking data also provides invaluable data for council planners; interestingly TAWS found that the types of journey made were different in deprived communities – more of a spider's web than direct routes into the city centre. This allows councils to plan cycling infrastructure that works for all communities, and not just commuters. Their latest initiative is funded by the National Lottery/Sport England.



### Access to low carbon transport

Access to low carbon transport is patchy, with some groups having little option to make a low carbon choice.

Cycling is a very low-cost low carbon transport option. But certain groups are much less likely to cycle than others. Working at a grassroots level to teach those with little or no cycling experience to ride confidently in the city can lay the foundations for a cycling culture.

Another low carbon transport option is car sharing. This can be particularly valuable for equity and social cohesion in areas where there is little option for public transport or in cases where people are no longer able to drive, e.g. through illness. In these circumstances, car sharing can offer a cost effective and relatively low carbon option to access workplaces and other facilities.



A video showing the importance of ensuring a Just Transition can be found [here](#).

### Avoiding car dependency

Enabling people to travel by public transport, cycling or walking is critical for meeting our climate change targets and also for delivering the health benefits of cleaner air and increased physical activity. However, recent research has found that many new housing developments are still being designed in a way that forces inhabitants to be car dependent. This research found that the scramble to build new homes is producing houses next to bypasses and link roads which are too far out of town to walk or cycle, and which lack good local buses.

To help overcome this, the report recommends that land use and transport should be planned together, with local authorities working cross-boundary to analyse, design and fund public transport in tandem with the expansion of a whole area.

### Poundbury – avoiding car dependency

A recent report by Transport for New Homes<sup>28</sup> found that councils are still allowing edge-of-town housing estates to be built where car travel is the only option for residents. The report praises Poundbury in Dorset – situated on the outskirts of Dorchester – as a development designed around people rather than the car.

It's built to a traditional high-density urban pattern and has shops, businesses, and 35% affordable housing. Instead of having a supermarket situated off a roundabout, a business park on a link road and a pub next to a distributor road junction, everything in Poundbury has been arranged as a truly walkable neighbourhood.

Key to its success is having a layout of connected streets with interesting squares and courtyards, coupled with the way that offices, small shops, cafés, pubs and even a garden centre have been integrated with the homes. The effect is that Poundbury has the feel of an authentic small town, rather than a car-dependent suburb.

The report acknowledges that the architecture and 'olde world' feel of Poundbury may not be popular with everyone but concludes that it seems to be successful as an urban extension.

## Liftshare – enabling those who can't drive to get to work

The Ashden award winning car sharing scheme Liftshare enabled one of its members, Tim, to get to work after his driving licence was revoked after a diagnosis of epilepsy.

Not wanting to have to give up work, he tried cycling to work, but this extended his travel time by 80 minutes a day which was not ideal. Instead he registered with Liftshare and started sharing his commute with two other members. “I met two chaps to share with”, he says: “The one who was on Liftshare and then his pal who shared the journey with him – They're actually



half my age but they've really helped me, so I've tried to always be on time and we get on very well"<sup>29</sup>.



Another low carbon transport option are electric vehicles (EVs). At present, EVs cost considerably more than combustion engine vehicles to purchase, making them inaccessible to large swathes of the population. However, their running costs can be considerably lower. These barriers can be overcome by offering EV car sharing schemes to social housing tenants, for example.

### Community energy and social benefits

A study by the National Trust found that community renewables schemes can deliver a range of social and economic benefits to local communities including increased autonomy, empowerment and resilience by providing a long-term income and local control over finances, often in areas where there are few options for generating wealth. Other benefits include opportunities for education, a strengthened sense of place and an increase in visitors to the area<sup>30</sup>.

Community energy schemes can also offer training and apprenticeships to local people to increase their skills whilst also offering local people the chance to invest in energy generation with a very low minimum investment threshold. And several schemes use part of their profits to fund, for example, energy efficiency measures in fuel poor households.

With smart metering technology, there is also the potential to offer local people discounted energy linked to local energy generation.

## Upside Energy – bringing the benefits of local energy to more people

Upside Energy is working with Bristol Energy, Bristol City Council, Regen SW, and community groups including Bristol Community Transport, SevernNet and Bristol Energy Network on the BESST (Bristol Energy Smart System Transformation) project. Together they are designing new propositions for delivering local energy to people through innovative service-based offerings. For example, a heat-as-a-service offering will allow people to buy ‘hours of comfort’ for their homes rather than kilowatt hours. These offerings put the complex concept of energy into terms that people understand, such as warmth for their homes or miles for their (electric) cars.

Such service offerings offer convenience and certainty. People know that their energy bill won’t increase during a cold snap, for example, making it easier for them to manage household budgets. And they create incentives for Bristol Energy and the City Council to improve home energy efficiency: investments in better insulation or improved heating can be funded from the underlying energy cost savings. Upside’s smart flexibility platform supports this by allowing Bristol Energy to manage electrical loads in the home to optimise the way it buys energy for these services.



By focusing on local energy, the project will help create jobs in local supply chains. And it will ensure that money is recycled within the local economy, further supporting jobs and growth. Bristol City Council’s involvement means that there is also a strong focus on using the service to deliver warmer homes to vulnerable consumers, with resulting benefits for health and social care. Finally, by exploring smart ways to support mobility, and especially electric vehicles, the project also has potential to create benefits for air quality and traffic congestion.

The project is part funded by the Industrial Strategy Challenge Fund Prospering From the Energy Revolution programme<sup>31</sup>.



## Energy Local – cutting costs for people living close to renewable generation

Energy Local CIC is addressing the discrepancy between how much households pay and the amount generators earn from distributed, renewable energy generated at a local level, with its match tariff.

Members of an Energy Local Club, the first of which is in Bethesda, Wales, can use local hydro-generated electricity at a price that is mutually beneficial.

Small-scale renewable energy is sold to energy suppliers at 5–6p per kWh, but people living nearby buy electricity back at up to three times that price. However, Energy Local uses new smart meter technology to allow households to match their use to local renewables.

This is reducing fuel poverty – with households reporting savings on their electricity bills of 24% – as well as generating additional funds for renewable generators and keeping energy spend in the local economy.<sup>32</sup>



## Links to statutory duties

### Public health

#### Health and Social Care Act 2012

The Health and Social Care Act 2012 delegated duties to local authorities to improve public health and reduce health inequalities<sup>33</sup>.

### Health and housing

#### Housing Health Safety Rating System (HHSRS)

The HHSRS is a risk-based evaluation tool to identify hazards within homes, including Excess Cold. The operating guidance says that dwellings should *be provided with adequate thermal insulation and a suitable and effective means of space heating*. Local authorities have a duty to keep housing conditions in their area under review with a view to identifying and enforcing any action that may be needed around HHSRS.

#### Minimum Energy Efficiency Standards

The Energy Act 2016 required that from 1st April 2018, any properties rented out in the private rented sector should have a minimum EPC rating of E, unless there is an applicable exemption. Local authorities, through trading standards, have a responsibility for enforcing this legislation.

### Air quality

#### 2008 ambient air quality directive (2008/50/EC)

The 2008 ambient air quality directive (2008/50/EC) sets legally binding limits for concentrations in outdoor air of major air pollutants that impact public health, including nitrogen dioxide (NO<sub>2</sub>)<sup>34</sup>. Note that the WHO air quality guidelines set stricter standards for particulate matter<sup>35</sup>.

## What role can decision makers play?



**Leadership** – Councils have an important leadership role through declaring a climate emergency and in ensuring that equity and social cohesion are addressed through environmental activity.



**Partnership** – Councils can work with different partners to encourage coordinated action. Organisations like the fuel poverty organisations and local community groups can be key partners in the delivery of equity and social cohesion projects.



**Communicating** – Councils can explain the opportunities to improve social outcomes e.g. by raising awareness on energy switching opportunities, lift sharing opportunities etc.



**Public health** – Councils can use public health responsibilities and powers to support and encourage action to take actions on improving health and the environment for the most vulnerable in society.



**Planning** – Councils can use planning powers to improve access to green space and improve infrastructure for active travel modes for the most vulnerable.



**Signposting** – Councils can signpost vulnerable households to existing support, as necessary.

## Opportunities for action

Topic	Resilience
<b>Procurement</b>	<ul style="list-style-type: none"> <li>· Include social value clauses requiring contractors to offer skills and associated apprenticeships relating to the low carbon economy.</li> </ul>
<b>Delivering services</b>	<ul style="list-style-type: none"> <li>· Support social outcomes through delivery of housing services, transport services and parks and leisure.</li> </ul>
<b>In plans and strategies</b>	<ul style="list-style-type: none"> <li>· Identify location of vulnerable groups and review key strategies to improve outcomes for these groups.</li> <li>· Ensure transport strategies and plans enable vulnerable and disadvantaged groups to access key services, green spaces etc.</li> <li>· Use Joint Strategic Needs Assessment to support activity that improves equity.</li> <li>· Specify in planning policies that new developments must not build-in car dependency.</li> </ul>
<b>In partnership</b>	<ul style="list-style-type: none"> <li>· Work with the NHS and other healthcare providers, with travel authorities and organisations.</li> <li>· Work with energy providers, fuel poverty organisations groups to reduce fuel poverty.</li> <li>· Work with those supporting vulnerable groups or tackling specific inequalities as well as housing providers and community groups.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>· Support a 'just transition' for workers by supporting those in 'traditional' high carbon industries to retrain.</li> </ul>

- <sup>1</sup> Department for Business, Energy and Industrial Strategy, “Annual Fuel Poverty Statistics Report, 2018 (2016 Data)”, June 2018. Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/719106/Fuel\\_Poverty\\_Statistics\\_Report\\_2018.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/719106/Fuel_Poverty_Statistics_Report_2018.pdf) [Accessed: 25 February 2019]
- <sup>2</sup> N. Cooper, S. Purcell and R. Jackson, “Below the Breadline: The relentless rise of food poverty in Britain,” Oxfam, 2014.
- <sup>3</sup> Aether, “Updated Analysis of Air Pollution Exposure in London, Report to GLA”, February 2017. Available at: <https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/updated-analysis-air-pollution-exposure-london-final.pdf> [Accessed: 25 February 2019].
- <sup>4</sup> Marmot, M, “Fair Society Healthy Lives (Full Report)”, 2010, London: The Marmot Review
- <sup>5</sup> Department for Communities and Local Government, “English Housing Survey,” [Online]. Available: <https://www.gov.uk/government/statistics/english-housing-survey-2013-energy-efficiency-of-english-housing-report> [Accessed 14th May 2018].
- <sup>6</sup> HM Government, “Cutting the cost of keeping warm: A Fuel Poverty Strategy for England,” HM Government, 2015.
- <sup>7</sup> It is important to recognise that in some fuel poor households, improving domestic energy efficiency may not reduce overall energy usage. This is because some households currently under-heat their property so improving the energy efficiency of their home will allow them to live in a warmer property for an equivalent amount of energy usage.
- <sup>8</sup> Cambridge Econometrics and E3G, “Building the Future: Economic and fiscal impacts of making homes energy efficient,” Cambridge Econometrics, 2014
- <sup>9</sup> Shelter, “Chances of a lifetime: the impact of bad housing on children’s lives,” Shelter, 2006.
- <sup>10</sup> E. A. Dowler, M. Kneafsey, H. Lambie, A. Inman and R. Collier, “Thinking about ‘food security’: engaging with UK consumers,” *Critical Public Health*, vol. 21, no. 4, pp. 403–416, 2011.
- <sup>11</sup> See: [www.switchee.co.uk](http://www.switchee.co.uk)
- <sup>12</sup> See: <https://democracy.islington.gov.uk/documents/s6631/2015-12-21-Holly-Park-EWI-evaluation-Final.pdf>
- <sup>13</sup> See: <https://www.mlei.co.uk/projects/community-projects/swaffham-prior-community-heat-scheme/>
- <sup>14</sup> Jennings N, Fecht D, de Matteis S, 2019, Co-benefits of climate change mitigation in the UK: What issues are the UK public concerned about and how can action on climate change help to address them? Grantham Institute, Imperial College
- <sup>15</sup> D. Fecht, P. Fischer, L. Fortunato, G. Hoek, K. de Hoogh, M. Marra, H. Kruize, D. Vienneau, R. Beelen and A. Hansell, “Associations between air pollution and socioeconomic characteristics, ethnicity and age profile of neighbourhoods in England and the Netherlands,” *Environmental Pollution*, vol. 198, pp. 201–210, 2015.
- <sup>16</sup> I. Rivas, P. Kumar and A. Hagen-Zanker, “Exposure to air pollutants during commuting in London: Are there inequalities among different socio-economic groups?,” *Environment International*, vol. 107, pp. 143–157, 2017.
- <sup>17</sup> See: <https://www.london.gov.uk/press-releases/mayoral/mayors-green-fund-helps-schools-fight-toxic-air-0>
- <sup>18</sup> See: <https://www.sustrans.org.uk/SustransSchoolStreets>
- <sup>19</sup> Public Health England and UCL, “Local action on health inequalities: improving access to green spaces”, Health Equity Evidence Review 8: September 2014. Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/357411/Review8\\_Green\\_spaces\\_health\\_inequalities.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/357411/Review8_Green_spaces_health_inequalities.pdf) [Accessed 1 March 2019]
- <sup>20</sup> Public Health England and UCL, “Local action on health inequalities: improving access to green spaces”, Health Equity Evidence Review 8: September 2014. Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/357411/Review8\\_Green\\_spaces\\_health\\_inequalities.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/357411/Review8_Green_spaces_health_inequalities.pdf) [Accessed 1 March 2019]
- <sup>21</sup> See: [https://www.newcastle.gov.uk/sites/default/files/wwwfileroot/planning-and-buildings/planning-policy/green\\_infrastructure\\_delivery\\_framework\\_final\\_2019.pdf](https://www.newcastle.gov.uk/sites/default/files/wwwfileroot/planning-and-buildings/planning-policy/green_infrastructure_delivery_framework_final_2019.pdf)
- <sup>22</sup> See: <https://www.repowering.org.uk/>
- <sup>23</sup> See: <https://www.repowering.org.uk/get-involved/>
- <sup>24</sup> See: <https://www.orbisenergy.co.uk/news/3sun-group-leads-pioneering-training-flow-skilled-offshore-wind-workers/>
- <sup>25</sup> See: <https://www.bristol.ac.uk/cabot/news/2018/green-and-black-project.html>
- <sup>26</sup> See: <https://theaws.co.uk/>
- <sup>27</sup> See: <https://www.ashden.org/winners/birmingham-bikes>
- <sup>28</sup> See: <http://www.transportfornewhomes.org.uk/wp-content/uploads/2018/07/transport-for-new-homes-summary-web.pdf>
- <sup>29</sup> See: <http://blog.liftshare.com/liftshare/how-liftshare-can-help-epilepsy-sufferers-stay-mobile>
- <sup>30</sup> National Trust, Clore Social Leadership Programme and Shared Assets, “Social and Economic Benefits of Community Energy Schemes”. Available at: [http://www.ukcec.org/sites/default/files/files/NT%20Report\\_%20Social%20and%20Economic%20Benefits%20of%20Community%20Energy.pdf](http://www.ukcec.org/sites/default/files/files/NT%20Report_%20Social%20and%20Economic%20Benefits%20of%20Community%20Energy.pdf) [Accessed 1 March 2019]
- <sup>31</sup> See: <https://www.ashden.org/winners/upside-energy>
- <sup>32</sup> See: <https://www.ashden.org/winners/energy-local#continue>
- <sup>33</sup> House of Commons, “Local authorities’ public health responsibilities (England)”, 2014. Available: <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SNO6844> [Accessed 24 February 2019]
- <sup>34</sup> See: [http://ec.europa.eu/environment/air/quality/existing\\_leg.htm](http://ec.europa.eu/environment/air/quality/existing_leg.htm)
- <sup>35</sup> See: [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health)



## Climate action co-benefits – useful resources

Resource	Link
<b>Ashden resources</b>	
Co-benefits videos	
Detailed case studies on all the Ashden Awards winners	<a href="https://www.ashden.org/winners/awards-winners">https://www.ashden.org/winners/awards-winners</a>
Ashden news	<a href="https://www.ashden.org/news-and-events/news-and-opinion">https://www.ashden.org/news-and-events/news-and-opinion</a>
The LESS CO <sub>2</sub> sustainable schools programme is a free energy efficiency programme available to any UK school. Through a series of half day workshops spread through the year, peer mentoring, expert advice and resources, staff are empowered and equipped to make changes and improvements to their school to reduce their energy usage, save money on bills and lower their CO <sub>2</sub> -emissions.	<a href="http://www.lessco2.org.uk/">http://www.lessco2.org.uk/</a> 
Fit for the Future is an environmental sustainability network with over 100 charities, heritage organisations, cultural venues, public sector organisations and more in its membership. By collaborating and sharing knowledge, our members are becoming climate-friendly, adaptive and resilient.	<a href="http://www.fftf.org.uk">www.fftf.org.uk</a> 
<b>Health and housing</b>	
Citizens Advice and Cornwall Council have produced a Local Authority Toolkit: Supporting Fuel Poor and Vulnerable Households, for local authorities, health and third sector partners to work together to reduce fuel poverty in their localities through energy efficiency initiatives.	<a href="https://www.citizensadvice.org.uk/Global/CitizensAdvice/Local%20authority%20cold%20homes%20toolkit.pdf">https://www.citizensadvice.org.uk/Global/CitizensAdvice/Local%20authority%20cold%20homes%20toolkit.pdf</a> 
HACT have developed a social value toolset to help housing providers, their suppliers and partners understand and implement social value measurement and to use social value as a tool to inform decisions.	<a href="https://www.hact.org.uk/hact-value">https://www.hact.org.uk/hact-value</a> 
HACT have also produced a tool to calculate the social value and mental health impact of energy efficiency work.	<a href="https://www.hact.org.uk/mental-health-social-value-calculator">https://www.hact.org.uk/mental-health-social-value-calculator</a> 
NICE published guidance on how to reduce the risk of death and ill health associated with living in a cold home; see Chapter 9 for the evidence base Guideline NG6 Excess winter deaths and illness and the health risks associated with cold homes.	<a href="https://www.nice.org.uk/guidance/ng6/chapter/9-The-evidence">https://www.nice.org.uk/guidance/ng6/chapter/9-The-evidence</a> 

Resource	Link
<b>Health, travel and air quality</b>	
<p>The World Health Organisation has produced the Health and economic assessment tool (HEAT) for cycling and walking which is designed to enable users without expertise in impact assessment to conduct economic assessments of the health impacts of walking or cycling.</p>	<p><a href="http://www.euro.who.int/en/health-topics/environment-and-health/Transport-and-health/activities/guidance-and-tools/health-economic-assessment-tool-heat-for-cycling-and-walking">http://www.euro.who.int/en/health-topics/environment-and-health/Transport-and-health/activities/guidance-and-tools/health-economic-assessment-tool-heat-for-cycling-and-walking</a></p> 
<p>Quantifying health costs of air pollution: Tool developed by Dr Daniela Fecht with Imperial Business School and Public Health England:</p> <ul style="list-style-type: none"> <li>• Allows local authorities to quantify the potential costs to the NHS and social care due to the health impacts of Nitrogen Dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>2.5</sub>).</li> <li>• Costs include primary care, secondary care, medication use, social care, and the combination of all the above costs.</li> <li>• Provides the ability to test different general 'what if' scenarios for the reduction of air pollution.</li> <li>• Can be used to estimate the health cost savings of low carbon transport projects.</li> </ul>	<p><a href="https://www.gov.uk/government/publications/air-pollution-a-tool-to-estimate-healthcare-costs">https://www.gov.uk/government/publications/air-pollution-a-tool-to-estimate-healthcare-costs</a></p>  
<p>Essential evidence on transport and health brings together a range of evidence on the health impacts of different transport interventions. For example:</p> <ul style="list-style-type: none"> <li>• Assessing the potential for carbon emissions savings from replacing short car trips with walking and cycling.</li> <li>• Can environmental improvement change the population distribution of walking.</li> <li>• Sustainable Travel Towns: An evaluation of the longer term impacts.</li> </ul>	<p><a href="https://travelwest.info/essentialevidence">https://travelwest.info/essentialevidence</a></p> 

Resource	Link
<b>Health and sustainable development</b>	
<p>The Sustainable Development Unit (SDU) supports the NHS, public health and social care to embed and promote the three elements of sustainable development. It is committed to helping local authorities and their Health and Well-Being Boards (HWBs) to help embed the principles and benefits of sustainable development within local cross system approaches to health and well-being. The Health and Well-being Toolkit focuses on embedding sustainable development approaches into local public health action and engaging Health and Wellbeing Boards in sustainability, resilience and climate change.</p>	<p><a href="https://www.sduhealth.org.uk/areas-of-focus/community-resilience/health-and-wellbeing-board-toolkit.aspx">https://www.sduhealth.org.uk/areas-of-focus/community-resilience/health-and-wellbeing-board-toolkit.aspx</a></p> 
<p>The Sustainable Development Unit (see above) has produced a range of guidance on supporting healthy, sustainable and resilient communities.</p>	<p><a href="https://www.sduhealth.org.uk/areas-of-focus/community-resilience.aspx">https://www.sduhealth.org.uk/areas-of-focus/community-resilience.aspx</a></p> 
<b>Social value</b>	
<p>The Social Value Hub is a free resource hosted by Social Enterprise UK, partnered with NCVO, National Housing Federation, NHS Confederation, and NAVCA. It is designed for anyone who wants to understand more about social value, and especially about the Public Services (Social Value) Act 2012, which requires public bodies to consider how the services they commission and procure might improve the economic, social and environmental well-being of the area.</p>	<p><a href="http://www.socialvaluehub.org.uk/">http://www.socialvaluehub.org.uk/</a></p> 
<b>Green space</b>	
<p>Public Health England produced a health equity briefing (2014) on Local action on health inequalities: improving access to green spaces.</p>	<p><a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/355792/Briefing8_Green_spaces_health_inequalities.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/355792/Briefing8_Green_spaces_health_inequalities.pdf</a></p> 

Resource	Link
<b>Local energy</b>	
<p>Local Partnerships and Cornwall Energy (2016) have published guide to local energy for local authorities: Local Energy Options – A Guidance Document for Local Government</p>	<p><a href="http://localpartnerships.org.uk/wp-content/uploads/2016/12/Local-Energy-options-guide-web-version-1.pdf">http://localpartnerships.org.uk/wp-content/uploads/2016/12/Local-Energy-options-guide-web-version-1.pdf</a></p> 
<b>Planning for climate change</b>	
<p>TCPI and RTPI have published (2018) Planning for Climate Change A Guide for Local Authorities</p>	<p><a href="https://www.rtpi.org.uk/media/2852781/TCPA%20RTPI%20planning%20for%20climate%20change%20guide_final.pdf">https://www.rtpi.org.uk/media/2852781/TCPA%20RTPI%20planning%20for%20climate%20change%20guide_final.pdf</a></p> 
<b>Vulnerability to climate change and fuel poverty</b>	
<p>Climate Just is a free webtool for public service providers designed to:</p> <ul style="list-style-type: none"> <li>• Identify who is vulnerable to climate change and fuel poverty and why</li> <li>• Highlight neighbourhoods where climate disadvantage is highest</li> <li>• Explain the factors involved and help you decide what actions to take</li> </ul>	<p><a href="https://www.climatejust.org.uk/">https://www.climatejust.org.uk/</a></p> 