Worcestershire Energy Strategy

WORCESTERSHIRE

Executive Summary

Energy Strategy for Worcestershire Local Enterprise Partnership

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Local Enterprise Partnership

Executive summary

The energy system is changing and energy in Worcestershire needs to change too. We are well placed to respond to both the opportunities and challenges afforded by rapidly advancing technology and emerging commercial markets. This strategy has been developed to promote a vision of the future where ambitious economic growth is not restricted by energy provision and opportunities to become more resilient, innovative and fully connected are not just met; but exceeded.

This strategy is intended to build awareness of the LEP's role in the context of energy, provide a pathway for the LEP to build on previous work, capitalise on the area's strengths and address the challenges of decarbonisation to deliver affordable energy and clean growth. It will also inform the development of Worcestershire's Local Industrial Strategy and other relevant local strategic plans.

There are three key measures that we will aim to deliver as part of this strategy:

- Reduction in carbon emissions of **50%** on 2005 levels by **2030**
- Double the size of the low carbon sector by **2030**
- Tripling energy production from renewable generation by **2030**

The vision for the future of energy in Worcestershire is;

"By 2030, Worcestershire will have a thriving low carbon economy which supports the creation of high value jobs, and stimulates investment and clean growth across the county.

We will have high quality energy efficient housing stock and a robust, diverse energy infrastructure, underpinned by low carbon generation which utilises Worcestershire's unique local resources."

-2030 Vision Statement

EVIDENCE BASE

A full and comprehensive review of the evidence base has shown a strong emphasis on support for both small businesses and householders to support them in reducing energy bills. These are primarily delivered through established programmes and successful partnership work that allows access to expertise and funding to invest in future energy resilience. There are also a number of examples of good practise in both the public and private sector, providing tangible demonstrators of the benefits of low carbon technologies and innovative commercial models.

There are also a number of inherent challenges that were identified. Capacity on the electricity network both in terms of new demand connections and the ability to connect renewable energy or storage technologies were highlighted as a particular problem. This is causing a major barrier to new commercial and residential development. High instances of fuel poverty and high carbon emissions can be attributed to the rural nature of the large proportion of the County; this means that access to gas networks is limited and other more carbon-intensive fuels are utilised, such as oil or coal, and also has an impact on transport emissions, with rural areas particularly reliant on the car for transport.

The current state of the energy sector as documented in the evidence base is not a static picture; this must be mapped to future energy projections to understand the potential opportunities and challenges that a future energy system would afford. The strategy has been developed to take account of this changing picture and recommend actions that will allow future flexibility to fully capture the benefits and mitigate the risks of that future energy system.
The strategy is broken down into four priority theme areas that have been developed from the evidence base and in consultation with local stakeholders:

- Access to affordable, clean energy
  - » The ability of Worcestershire to offer low cost, low carbon energy
  - » To reduce instances of fuel poverty and reduce the overhead cost on small business that energy provision entails
- Clean economic growth
  - » The ability of Worcestershire to achieve its ambitious growth targets without causing a subsequent rise in carbon emissions
  - » To promote and encourage the flourishing low carbon supply chain to expand further
- Overcoming infrastructure and development barriers
  - » To remove barriers to development by encouraging alternative means to achieve secure energy supply through smart systems
- Promoting low carbon transport and active travel
  - » To recognise that low carbon transport, particularly the rising use of electric vehicles, is an opportunity for rapid decarbonisation driven by both legislation and consumer trends
  - » To facilitate integrated approaches to transport to increase rates of active travel including walking and cycling

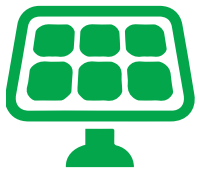
ACCESS TO AFFORDABLE, CLEAN ENERGY

There are significant energy generation resources identified within Worcestershire. In order to maximise Worcestershire's green ambition in the shift to a low carbon economy, it is important to work to develop these resources where possible. Geothermal heat below Worcestershire has been identified as a significant energy resource and the development of this is a high priority. It is clear that this will be a challenge, and the significant investment required will necessitate a solid business case to justify investment and ensure that the heat produced can be utilised locally.

Some areas of Worcestershire face particularly high levels of fuel poverty, while the average rate of fuel poverty across the county is **11.5%** (2016), marginally above the national level of **11.1%,** there are some areas where levels of fuel poverty can be as high as **25%** of properties. Improving energy efficiency standards will help lift households out of fuel poverty, but efforts should also be made to focus on sources of energy, in particular, alternatives to expensive high carbon fuels for homes off the gas grid. There may be a range of appropriate solutions for these properties that could both reduce heating costs, and these alternative fuels should be considered within the context of the need to decarbonise heating, ensuring that low carbon alternatives to oil and solid fuel heating systems are considered where appropriate, including heat pumps, bio-gas or hybrid systems.

Worcestershire aims to engage with over **80%** of households in fuel poverty through the Warmer Worcestershire initiative between **2018** and **2030**.

triple
renewable
energy



50% REDUCTION on 2005

CARBON EMISSIONS

CLEAN ECONOMIC GROWTH

Worcestershire's low carbon sector is an area of strength, with many innovative businesses in this area. Worcestershire's low carbon business support programmes have also supported many businesses to improve their energy efficiency or make investments in low carbon technologies.

The Low Carbon and Renewable Energy sector has outperformed the growth of the wider economy, with growth in turnover nationally of **5%** from 2015 to 2016 . With the Government putting Clean Growth at the forefront of its Industrial Strategy there is a clear opportunity to maximise the local benefits of this and keep growing Worcestershire's low carbon economy to the benefit of UK PLC.

Worcestershire LEP's Strategic Economic Plan sets a goal of increasing Worcestershire's GVA by **£2.9 billion** by **2025**, the growth of the low carbon sector can play a key role in this. Tracking in line with national growth in this area of around **5%** annually would see the sector grow to a size of over **£500m** in **2025** and double to **£662m** by **2030**. The size and performance of the local low carbon sector should be tracked over time in order to quantify the benefits to the wider economy of the LEP's work with the low carbon sector.

The success of the LEP's energy efficiency and low carbon programmes should be built on and these continued to ensure businesses are able to access the support they need to make the low carbon transition.

Grid

Improve grid capacity and flexibility to support local development

Generate

Generate over **15%** of electricity from local renewable resources by **2030**

Fuel Poverty

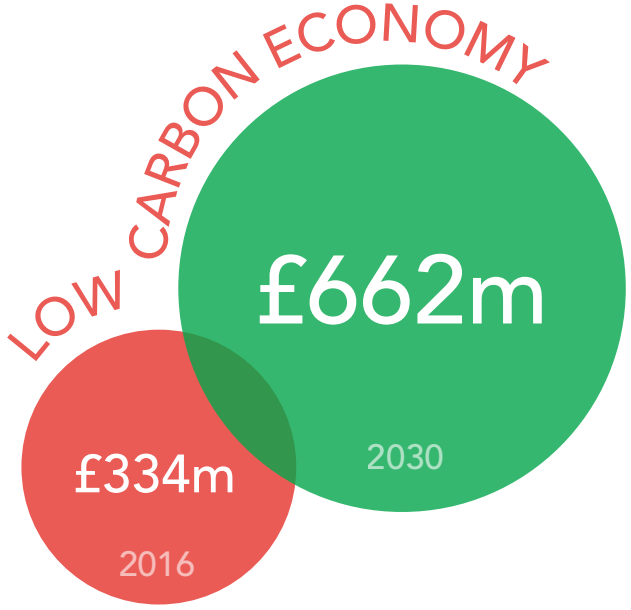
Engage with **2,000** Worcestershire residents per year through energy efficiency programmes

Growth

Double the size of the low carbon economy by **2030**

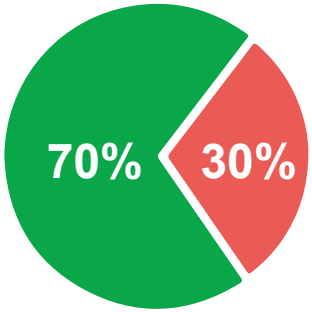
CO_2

Reduce carbon emissions ahead of UK targets, reducing Worcestershire's emissions by **50%** on 2005 levels by **2030**



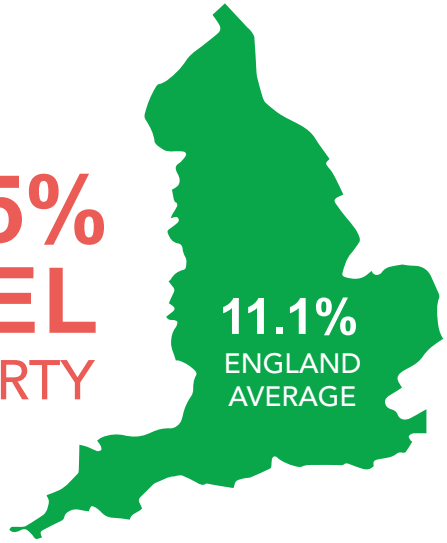
Worcestershire statistics

588,370
Population of Worcestershire



Population **70%** Urban, **30%** rural (more rural than England as a whole)

11.5% FUEL POVERTY

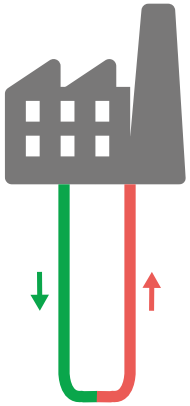


14%
DOMESTIC PROPERTIES
off the gas network

£1.2billion
spent on energy
in Worcestershire annually (**10.5%** of Worcestershire GVA)

of local
ELECTRICITY CONSUMPTION
met by local renewable generation

5.4%



significant potential for
geothermal resource

51%
Annual 2017 growth in electric vehicle ownership in Worcestershire

750
businesses active in the low carbon sector

Worcestershire low carbon economy has growth in the top quintile of LEPs at over **4.9%** per annum.

4.9%
GROWTH

0.068
TONNES CO_2/m^2

3.83
TONNES CO_2 PER HOUSEHOLD

Domestic emissions 3.83 tonnes CO_2/ household per annum, **4%** higher than England average

Commercial and Industrial emissions 0.068 tonnes CO_2/m^2 floor area, **20%** better than England average

OVERCOMING INFRASTRUCTURE AND DEVELOPMENT BARRIERS

Identified through the evidence base was a clear challenge of grid capacity, in particular when set against the context of significant planned growth in Worcestershire. The LEP's Strategic Economic Plan aims to create **25,000 jobs** and deliver **21,500 new homes** between **2014** and **2025**. This adds significant growth in energy demand requirements, and a need to ensure that the increase in electrical demand can be facilitated by the local network. There are also areas where existing low carbon generation installations have led to network constraints where there is no further capacity for generation connections in some areas. There is a clear need to liaise closely with the distribution network operator in order to enable the scale of development that is likely to take place over the next ten years.

Worcestershire has been chosen by Government as the home of a new 5G Testbed, putting the county at the forefront of technological innovation. This is a flagship project, and represents a prospect to integrate greater smart energy monitoring and control in a trial area to demonstrate the opportunities brought by automation, response and control of energy.

The LEP should facilitate the involvement of energy and smart control into the Worcestershire 5G testbed to enable rapid business demand side response.

PROMOTING LOW CARBON TRANSPORT AND ACTIVE TRAVEL

Electric vehicle chargepoint provision is suitable for current levels of electric vehicle take-up, with an existing spine of motorway chargepoints and destination chargepoints in urban centres. However, the likely future trajectory of electric vehicle ownership will require substantial further investment in this area, particularly in rural areas. Worcestershire needs a coherent strategy in place to meet these challenges.

Reducing carbon emissions from transport will also be enabled through greater shift towards use of public transport and increasing the use of active modes of travel such as walking and cycling. This is being developed through Local Transport Plans with the implementation of active travel infrastructure such as cycle paths to link urban centres with public transport hubs.

Worcestershire County Council, in collaboration with partners, should develop an EV strategy that will offer guidance on the broad range of policy measures and initiatives that can be utilised to encourage the uptake of EVs.

SUMMARY OF KEY FINDINGS

Worcestershire is currently a net importer of energy, we need to increase local energy generation in Worcestershire, with an ultimate focus on zero carbon emissions. Worcestershire has a number of local assets which enable us to do this, and we also have a healthy low carbon sector operating in the county which we can learn from, develop and work with to scale up benefits across the county. This strategy provides the evidence base and priorities for Worcestershire to focus on, looking ahead to 2030.

We have found that there are significant opportunities to demonstrate that Worcestershire can be the most connected county in the UK both physically and digitally. There are some landmark projects in the making including the Worcestershire 5G test bed and the Offenham geothermal resource which would be nationally leading. The 5G test bed project is the most pressing opportunity to capture given the achievement of the LEP in securing one of the UK's pilot projects, and the timescale of the wider initiative. Worcestershire is well placed to maximise the growth opportunity from investment in the low carbon and renewable energy sector.

Our team of multi-disciplinary consultants provides project engineering services to ensure our customers get the results they expect from their energy projects.

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